The Science of Negative Pressure Wound Therapy

Interruption of Therapy Recommended for Best Results

A strong and growing number of studies have found that intermittent negative therapy increases blood flow to the wound site more effectively than continuous negative pressure and that proliferation of new granulation tissue is significantly higher with intermittent negative pressure. One theory regarding increased blood flow is that this may be due to the fact that during higher pressure settings there is an increase in perfusion of blood flow to the wound site creating a hypoperfused “halo” at the wound edge. As pressure levels decrease the “halo” decreases as blood flow disperses into the surrounding tissue maintaining possible ischemic effects.

Low Levels of Continuous Pressure Recommended

Recent research indicates that lower pressure may be beneficial especially with tissue to maintain ischemia in the hypoperfused zone surrounding the wound edge. Research done at the Lund University Medical Center recommends levels of 120 to 150 mmHg to treat soft tissue.

Basic Mechanisms of Negative Pressure Wound Therapy

The response of wounds to NPWT is the result of controllable and equally distributed negative pressures, not from the particular dressing and drain combinations used to apply negative pressure therapy. Three leading mechanisms of action are thought to contribute to the wound healing benefits of NPWT therapy.

• Vacuum Assisted Drainage
• Reduction of Interstitial Fluid
• Mechanical Effects on Blood Flow, Cell Growth and Cell Proliferation

NPWT produces mechanical stress and a pressure gradient across tissue that results in surges of blood flow to the wound area. In addition, NPWT can increase oxygen consumption on cells, stimulating them to interact with soluble growth factors in the extracellular matrix. This effect is often referred to as cell stretch. The stretched cells then distribute, proliferate, dividing, and maturing, leading to the growth of new vessels, collagen deposition, and granulation tissue formation.

Indications for Use

The PRO-II® Negative Pressure Wound Therapy System is indicated for patients who would benefit from a suction system, particularly as the device may promote wound healing.

Contraindications

When used for wound healing, the PRO-II is contraindicated in the presence of:

• Necrotic tissue.
• Unexplored or non-enteric fistulas.
• Untreated osteomyelitis.
• Wounds containing malignant tissue.
• Exposed arteries, veins, or organs.

Precautions

Precautions should be taken in the presence of:

• Anticoagulation or active bleeding.
• Difficult wound hemostasis.
• Close proximity of blood vessels, organs, muscle, and fascia requiring adequate protection.
• Irradiated vessels and tissue.
• Bony fragments.
• Untreated malnutrition.
• Non-compliance.

Technical Data

Air-flow rate of pump ........... 8 liters/min
Negative pressure ............... Max. –200mmHg
Nominal voltage of electronic circuit board ........ 12V
Nominal voltage of power supply adapter ................. 100–240V primary, 12VDC secondary
Power requirements ............ 100–240V , 50/60Hz, 45W
Maximum load current ......... 1.25 A
Rechargeable battery ............ 7.4V , 4.4Ah – lithium-ion battery
Charging time of empty battery ................. 6 – 7 hours
Charging time of half empty battery ............. 3 – 3.5 hours
Dimensions (W x H x D) ....... 8.4” x 6.5” x 3.5”
Weight (basic unit).... 1.3kg (2.65 lbs.), with canister
Operating time  AC operation: continuous operation DC operation: approx. 24 – 48 hours, depending on use

Degree of protection according to IEC 601-1 ........ Type BF
Risk class according to 93/42/EEC, IX ................. IIa
Sound emission ................. 35dB (A)
Protection class according to IEC 601-1 ........ II

Introduction... all the new PRO-II™

Advancing the art and science of NPWT.

DeRoyal, improving care, improving business.

DeRoyal Industries, Inc.
200 DeBusk Lane
Powell, TN 37849
800.938.7828 or 865.938.7828
www.deroyal.com

DeRoyal © 2013
Reprint #0-2293
Rev. 10/13

The PRO-II® Negative Pressure Wound Therapy System
Looking for a better NPWT® option for your homecare and ambulatory patients? Take a look at the all-new PRO-II. Now you can get all the features, benefits and flexibility of the PRO-III and more...in a comfortable, compact package.

Your patients will thank you.

The Portable PRO-II™ Means Quality of Life for Your Patients

The portable PRO-II delivers all the benefits of NPWT without pain and discomfort for the patient. Lightweight and discreet; the PRO-II is portable and comfortable so your ambulatory and homecare patients can get on with their lives.

FEATURES

• Contoured design for patient comfort
• Virtually silent operation
• Discreet, disposable catheter
• Over 24-hour battery run time
• Carrying case that can be worn on the waist or over the shoulder

Lower pressure settings enhance comfort during use

VPT® provides intermittent pressure in the form of a gentle massage effect eliminating painful high to low spikes characteristic of traditional intermittent pressure

VPT® Variable Pressure Therapy

The literature has confirmed that intermittent negative pressure increases blood flow to the wound site more effectively than continuous negative pressure and that proliferation of new granulation tissue is significantly higher. But until now, pumps available on the market were not able to provide practical, comfortable intermittent therapy. New Prospera VPT technology is engineered to deliver comfortable, manageable intermittent pressure therapy for best results and patient comfort.

• Pressure levels and time settings for high and low pressures are completely customizable
• Recommended pressures of between 40 and 80mmHg are calibrated to increase and decrease in comfortable 5mmHg increments providing a gentle massage effect
• Discomfort and pain due to sudden high to low pressure spikes is virtually eliminated

Negative pressure is always maintained at the wound site because pressures never drop to 0mmHg

The portable PRO-II delivers all the benefits of NPWT without pain and discomfort for the patient. Lightweight and discreet; the PRO-II is portable and comfortable so your ambulatory and homecare patients can get on with their lives.

SUTTLE MODERATOR. Full control of

DeRoyal

Impressing Care. Improving Outcomes.


You can be confident in the evidence to support the positive impact of intermittent negative pressure therapy on wound care. The literature has confirmed that intermittent negative pressure increases blood flow to the wound site more effectively than continuous negative pressure and that proliferation of new granulation tissue is significantly higher. But until now, pumps available on the market were not able to provide practical, comfortable intermittent therapy. New Prospera VPT technology is engineered to deliver comfortable, manageable intermittent pressure therapy for best results and patient comfort.

• Pressure levels and time settings for high and low pressures are completely customizable
• Recommended pressures of between 40 and 80mmHg are calibrated to increase and decrease in comfortable 5mmHg increments providing a gentle massage effect
• Discomfort and pain due to sudden high to low pressure spikes is virtually eliminated

Negative pressure is always maintained at the wound site because pressures never drop to 0mmHg

The portable PRO-II delivers all the benefits of NPWT without pain and discomfort for the patient. Lightweight and discreet; the PRO-II is portable and comfortable so your ambulatory and homecare patients can get on with their lives.

SUTTLE MODERATOR. Full control of

DeRoyal

Impressing Care. Improving Outcomes.


You can be confident in the evidence to support the positive impact of intermittent negative pressure therapy on wound care. The literature has confirmed that intermittent negative pressure increases blood flow to the wound site more effectively than continuous negative pressure and that proliferation of new granulation tissue is significantly higher. But until now, pumps available on the market were not able to provide practical, comfortable intermittent therapy. New Prospera VPT technology is engineered to deliver comfortable, manageable intermittent pressure therapy for best results and patient comfort.

• Pressure levels and time settings for high and low pressures are completely customizable
• Recommended pressures of between 40 and 80mmHg are calibrated to increase and decrease in comfortable 5mmHg increments providing a gentle massage effect
• Discomfort and pain due to sudden high to low pressure spikes is virtually eliminated

Negative pressure is always maintained at the wound site because pressures never drop to 0mmHg

The portable PRO-II delivers all the benefits of NPWT without pain and discomfort for the patient. Lightweight and discreet; the PRO-II is portable and comfortable so your ambulatory and homecare patients can get on with their lives.

SUTTLE MODERATOR. Full control of

DeRoyal

Impressing Care. Improving Outcomes.


You can be confident in the evidence to support the positive impact of intermittent negative pressure therapy on wound care. The literature has confirmed that intermittent negative pressure increases blood flow to the wound site more effectively than continuous negative pressure and that proliferation of new granulation tissue is significantly higher. But until now, pumps available on the market were not able to provide practical, comfortable intermittent therapy. New Prospera VPT technology is engineered to deliver comfortable, manageable intermittent pressure therapy for best results and patient comfort.

• Pressure levels and time settings for high and low pressures are completely customizable
• Recommended pressures of between 40 and 80mmHg are calibrated to increase and decrease in comfortable 5mmHg increments providing a gentle massage effect
• Discomfort and pain due to sudden high to low pressure spikes is virtually eliminated

Negative pressure is always maintained at the wound site because pressures never drop to 0mmHg

The portable PRO-II delivers all the benefits of NPWT without pain and discomfort for the patient. Lightweight and discreet; the PRO-II is portable and comfortable so your ambulatory and homecare patients can get on with their lives.

SUTTLE MODERATOR. Full control of

DeRoyal

Impressing Care. Improving Outcomes.