Precise Excision

smith&nephew
VERSAJET II
Hydrosurgery System
The VERSAJET™ II Hydrosurgery System
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The VERSAJET II system enables a surgeon to precisely select, excise and evacuate nonviable tissue, bacteria and contaminants from wounds, burns and soft tissue injuries using a tissue-sparing technique.

Advanced hydrosurgery technology helps reduce time to closure, which may reduce overall treatment cost.
Precision and control

The VERSAJET™ system uses a high-pressure stream of saline to optimize surgical debridement.

As the hand piece travels tangentially across the wound, the device’s razor-thin saline jet removes necrotic tissue, bacteria and debris – sparing the surrounding viable tissue.

The VERSAJET system quickly prepares a cleaner, more uniform wound bed simultaneously addressing multiple barriers to healing.
Mode of action
Precision to preserve

Conventional surgical excision

VERSAJET® excision

Adapted from Cubison TC, Pape SA, Jeffery SL. Burns. 2006;32:714-720.
Precision to preserve

Achieving maximum tissue preservation

**Tissue loss**
Centripetal debridement:
Stage IV sacral decubitus ulcer before (1a) and after (1b) conventional surgical excision

**Tissue preservation**
Centrifugal debridement:
Chronic lower extremity ulcer before (2a) and after (2b) precise VERSAJET excision

Precision and performance

Clinical efficacy

- Helps reduce time to wound closure\(^3, 4\)
- Creates a smooth wound bed for improved graft and synthetic dressing results\(^1\)
- Reduces bacterial burden and other inhibitory elements,\(^4, 6, 8\)
- Removes unwanted tissue and contaminants, while preserving healthy tissue\(^3, 5, 6\)
- Accesses difficult-to-reach and contoured areas with ease and control\(^6\)
Precision and value

Cost effectiveness

- Requires fewer debridement procedures, which may improve hospital profitability³
- Helps reduce time to closure, which may shorten hospital stay⁴,⁶
- Removes bacteria to help reduce the risk of infection⁴,⁶,⁸
- Minimizes procedure time, thereby increasing blockable OR time⁷,⁹
- Uses fewer instruments/supplies, potentially reducing cost per procedure³,⁷
Improve profitability
Fewer debridement procedures

With VERSAJET®, 75% of wounds were closed in the first operative procedure.

- Saving in the total cost of debridement = $2,200/per patient*
- Saving in the cost of consumables = $521 per patient*

* Saving in the average number of procedures with VERSAJET (1.91-1.26=0.65) * average cost per debridement procedure reported in Granick, et al [ref 3] of $3,393 in 2002/03, of which the average cost of disposables per procedure was $802 (24%). Savings are shown before the cost of the VERSAJET hand piece.

** Based on five clinical studies involving 451 patients with mixed wounds (acute, chronic, trauma, burns) debrided with VERSAJET: (Granick, [ref 3]; Gravante, [ref 9]; Gurunlouglu, [ref 10]; Mosti & Mattaliano, [ref 4]; Vanwijck, [ref 6])
Fewer debridement procedures

With VERSAJET®, 75% of wounds were closed in the first operative procedure.

• Operating room sessions released for other uses = 65 per 100 patients*

• Surgeon and professional time saved (hours) = 33 per 100 patients**

Reduced debridement time by 39% per patient

<table>
<thead>
<tr>
<th>Method</th>
<th>Time (hours)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional surgical debridement (n=22)</td>
<td>17.7</td>
<td></td>
</tr>
<tr>
<td>VERSAJET system (n=19)</td>
<td>10.8</td>
<td>&lt;0.008</td>
</tr>
</tbody>
</table>

* Based on fewer debridement procedures per patient on average (1.91-1.26 = 0.65 per patient) * 100
** Assuming 30 minutes per procedure. Based on the mean time of a debridement procedure in the operating room reported in Gravante [ref 9] (24 minutes) and Caputo [ref 6] (18 minutes)
Shorter hospital stay

Reducing repeat debridements may facilitate earlier discharge (by 3 days on average)* because the wound is closed more quickly

- However, not all patients can be discharged early because the wound is closed**

- Even if only 30 patients can be discharged early per year:
  - Potential bed days saved = 90
  - Potential additional patients treated = 12***
  - Potential savings in hospital costs = $54,000****

* Mosti & Mattaliano [ref 4] found healing time reduced from 4.3 days to 1.3 days with VERSAJET, leading to 3 days shorter length of stay
** Because of co-morbidities and other reasons, not all patients can be discharged early
*** 12=90/7.8. US national average (Medicare) length of stay for skin graft DRGs (DRG codes 573-578) in 2008 was 7.8 days. [Healthcare Cost and Utilization Project (HCUP), http://www.ahrq.gov/data/hcup/]
****Estimated at 33% ($600) of the US national (Medicare) cost per day for the same DRG codes ($1,800). [http://www.ahrq.gov/data/hcup/]
Effective bacterial clearance

VERSAJET® is effective at removing bacteria and other contaminants from the wound. This reduces the risk of graft failure and infection.

- Avoiding one graft failure could potentially save $12,900*
- The average length of stay for a skin grafting procedure in the US is 7.8 days*


** Vanwijck [ref 5]
Summary

The VERSAJET™ II system

- Targets devitalized tissue
- Preserves healthy tissue
- Reduces closure time
- Lowers treatment cost
- Improves outcomes
Economic Model Disclaimer

The economic model is intended to provide an estimate of potential cost savings on hospital operating expenses associated with use of the Versajet in accordance with its FDA-approved indications.

The estimates are based on the disclosed assumptions and a peer-reviewed article titled, "Efficacy and cost-effectiveness of a high-powered parallel waterjet for wound debridement." Granick MS, Posnett J, Jacoby M, Noruthun S, Ganchi PA, Datiashvili RO. Wound Repair Regen. 2006 Jul-Aug; 14(4):394-7. The estimates are not necessarily representative of the economic impact of the Versajet on all hospitals that will use the Versajet. The actual economic impact of the Versajet on a particular hospital will depend on the hospital’s particular circumstances. Hospitals should not make decisions regarding the medical products they purchase based solely on the anticipated cost savings associated with a product; the clinical efficacy and appropriateness of a product should be a primary consideration in all purchasing decisions.”

The new technology (VERSAJET) may trigger changes in coding (i.e. excisional debridement 86.22 à non-excisional débridement 86.28). This may result in a lower reimbursed amount from either public or commercial payors.

Under no circumstances should this presentation be used by a health care provider for coding, payment or verification purposes AND Smith & Nephew is not responsible for any overpayment for health care services that may result from the use of this presentation. The Corporate Reimbursement Disclaimer prevails.
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Precise Excision
References and support material
References


# Ordering Information

## VERSAJET® II Hydrosurgery System

<table>
<thead>
<tr>
<th>Order No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>66800039</td>
<td>Console (115V/230V)</td>
</tr>
<tr>
<td>66800979</td>
<td>Surgical cart</td>
</tr>
<tr>
<td>66800475</td>
<td>Replacement shelf (Retrofit to 50800)</td>
</tr>
</tbody>
</table>

## VERSAJET® II Exact Handsets

- **For maximum dermal preservation**
  - Order No: 66800041
    - VERSAJET® II Exact disposable handset (45°/14mm)
  - Order No: 66800042
    - VERSAJET® II Exact disposable handset (45°/8mm)
  - Order No: 66800040
    - VERSAJET® II Exact disposable handset (15°/14mm)

## VERSAJET® II Plus Handsets

- **For maximum removal of non-viable tissue and contaminants†**
  - Order No: 66800044
    - VERSAJET® II Plus disposable handset (45°/14mm)
  - Order No: 66800045
    - VERSAJET® II Plus disposable handset (45°/8mm)
  - Order No: 66800043
    - VERSAJET® II Plus disposable handset (15°/14mm)

† The VERSAJET II Plus handset is more powerful than the VERSAJET II Exact. VERSAJET II Plus will select, section and evacuate tissue faster and more aggressively.

- **Lower deck height**
- **Narrower channel**
- **Higher deck height**
- **Wider channel**
- **0.11 mm Nozzle orifice**
- **0.10 mm Nozzle orifice**
Fewer Surgical Procedures

- Case control study, n=62 (mixed wounds)
- Fewer procedures required to prepare the wound for grafting: 1.18 vs 1.91 (p<0.002)
- Net cost saving to the hospital = $1,900 per patient (at 2002/03 prices)
- Cost offset: Requires only a small incision and drainage tray, no need to open a major instrument set

- Case control study, n=34 (chronic wounds). [sub-set of patients from Granick 2006a (above)]
- Fewer procedures required to prepare the wound for grafting: 1.14 vs 2.00, (p<0.001)
- Net cost saving to the hospital = $2,800 per patient

- Case series, n=167 mixed wounds. Patients were grafted immediately following VJ debridement
- 95% of patients could be immediately grafted following a single VERSAJET procedure, graft take was total except for 5 patients
- Average number of debridement procedures = 1.2 per patient
- Hospital cost savings: Immediate grafting has the potential to reduce length of stay, cost of dressings and cost of nurse time
Faster debridement

- RCT (n=41), comparison of conventional surgical debridement and VERSAJET in debriding leg and foot ulcers in the OR
- **Debridement time:** was shorter with VERSAJET by 39% (p<0.008)
- **Cost offset:** No need to use pulse lavage in the VERSAJET group, saving $240 per patient (p<0.001)
- **Cost offset:** Smaller instrument set was required (13 instruments only required with VERSAJET)-potential saving in inventory and sterilisation

- RCT (n=87), comparison of VERSAJET with hand-held dermatome in burns patients
- **Debridement time:** Both achieved adequate debridement, VJ was quicker (p<0.05) and more precise
- VERSAJET has a particular advantage in difficult areas such as the hands and face
Shorter hospital stay


- Case control study with contemporaneous controls. Bedside debridement with VERSAJET (n=142) or moist dressings (n=327)
- 76% of VERSAJET patients were adequately debrided in a single procedure
- Most VJ patients (66/142) required no anaesthetic; 57/142 required local only
- Time to clean wound bed 1.3 days vs 4.3 days: shorter length of stay (2-3 days)
Effective bacterial clearance


- Case series, n=167 mixed wounds. Patients were grafted immediately following VJ debridement
- 95% of patients could be immediately grafted following a single VERSAJET procedure, graft take was total except for 5 patients
- Average number of debridement procedures = 1.2 per patient
- Hospital cost savings: Immediate grafting has the potential to reduce length of stay, cost of dressings and cost of nurse time
Effective bacterial clearance


- RCT (n=21), comparison of pulse lavage (at 40 psi) and VERSAJET in patients with traumatic wounds. The aim was to compare the ability to reduce bacterial counts in contaminated wounds
- Quantitative bacterial analysis was undertaken on tissue cultures taken before and after debridement and irrigation
- Bacterial counts reduced by 90.8% (range 62.66-100%) and 86.9% (58.35-100%) in VERSAJET and lavage groups, respectively (p=0.38)
- Both methods significantly reduced bacterial counts. There was no difference between the two methods


- Case control study with contemporaneous controls. Bedside debridement with VERSAJET (n=142) or moist dressings (n=327)
- After Verasjet debridement the bacterial count reduced from a mean $10^6$ to $10^3$