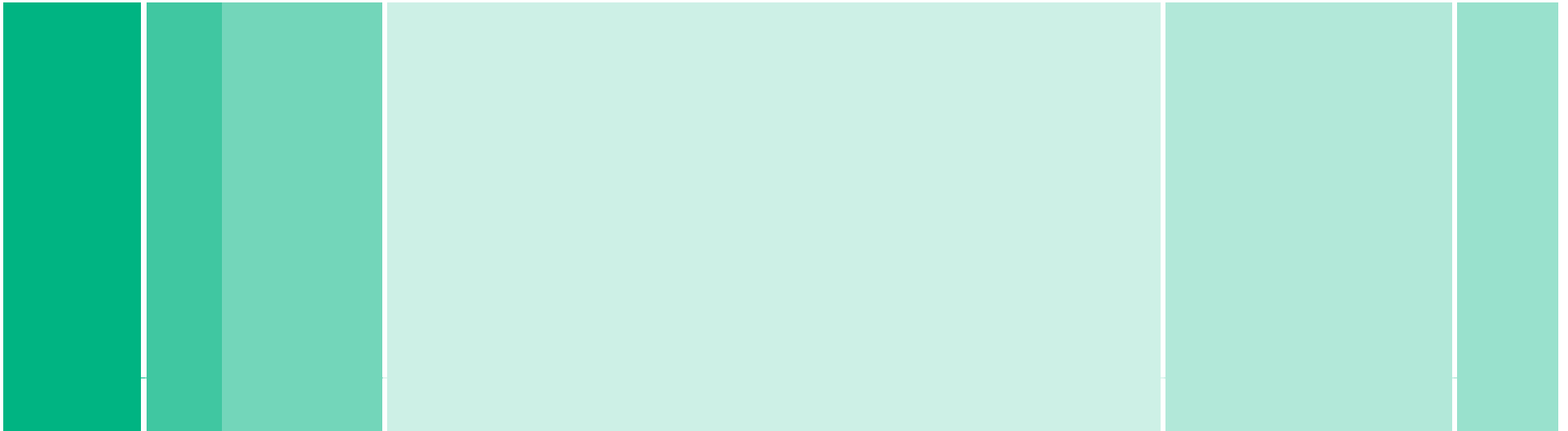




# Medical Production Sites

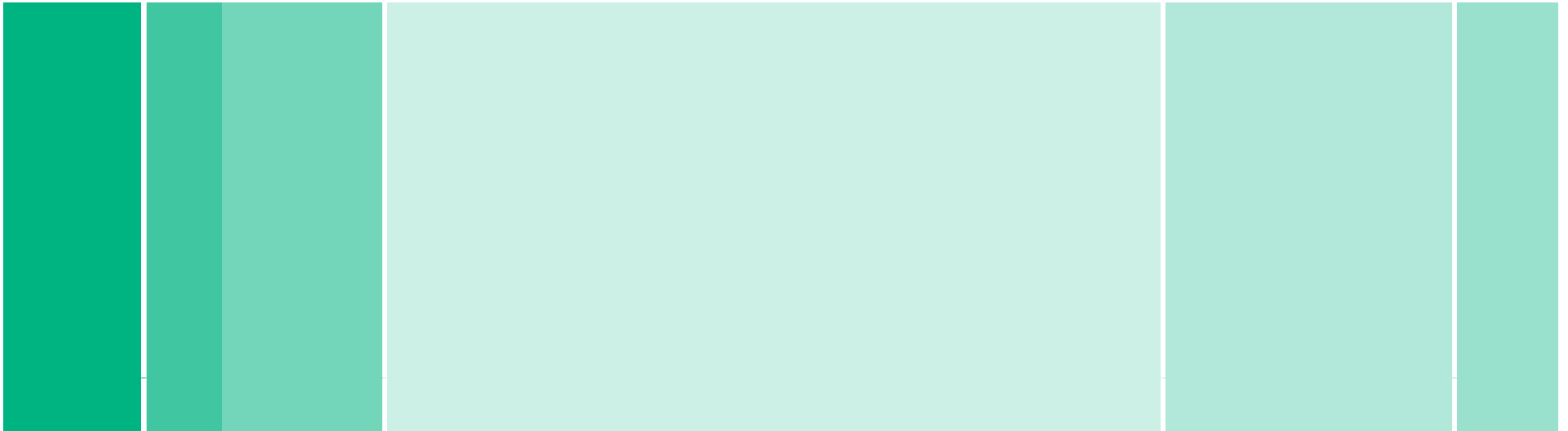
OEM Division, December 2009

**B | BRAUN**  
SHARING EXPERTISE



## Medical Production Sites

- Europe
- Asia/Pacific
- USA



## European Medical Production Sites

- **Germany**
  - [Bad Arolsen](#)
  - [Melsungen](#)
- **Switzerland**
  - [Escholzmatt](#)
- **Hungary**
  - [Gyöngyös](#)
- **Italy**
  - [Mirandola](#)
- **France**
  - [Nogent-le-Rotrou](#)



Germany: [Bad Arolsen](#)

**ALMO-Erzeugnisse Erwin Busch GmbH**  
**Große Allee 84**  
**34454 Bad Arolsen**  
**Germany**

**Employees: 360**

ALMO: 60 % B. BRAUN Melsungen

## Bad Arolsen: Size of site

- Total area: 26,742 m<sup>2</sup>
- Production area: 10,546 m<sup>2</sup>
- Size of clean room: ca. 6,500 m<sup>2</sup>
- Class of clean room: 100.000, class D according to ISO 13485/2003

## Bad Arolsen: Product lines

- Standard syringes (1 - 20 ml)
- 2-piece-single-use syringes (Injekt®)
- 3-piece-single-use syringes (Omnifix®)
  
- Fine dosage syringes (3-piece single-use syringes; 1ml)
- 3-piece single use syringe (Omnican®-F)
- 3-piece fine dosage syringe (Omnifix®-F)
- 2-piece fine dosage syringe (Injekt®-F)

## **Bad Arolsen: Production method**

- Standard syringes are produced fully automatic
- Fine dosage syringes are produced semi-automatic

## **Bad Arolsen: Capacity**

### **Capacity per product line**

- Quantity of syringes p.a.: > 2 billion syringes
- Daily production: 8 million syringes

### **Minimum order quantity per product line**

- 100.000 pieces

## **Bad Arolsen: Technology**

### **Production Technology**

- Injection moulding
- Assembling
- Printing
- Packaging
- Sterilization

### **Sterilization method**

- EO-Sterilization

### **Additional services**

- Customized Sets

## Bad Arolsen: Labeling / Packaging range

### Labeling / Technologies

- Laser-labeling
- Manual and fully automatic printing of labels
- Automatic packaging-unit
- Camera-control-system
- Offset printing

### Packaging range

- Corrugated box  
from 391 x 391 x 349 mm (1 cc) to 587 x 387 x 434 mm (20 cc)
- Cardboard box  
from 189 x 126 x 114 mm (1 cc) to 430 x 180 x 194 mm (30 cc)

## **Bad Arolsen: Investments**

- GMP upgrade
- New technologies
- New equipment

## Bad Arolsen: Certifications

- FDA registered
- ISO 9001/2000
- ISO 13485/2003



Germany: [Melsungen](#)

**B. Braun Melsungen AG**  
**Carl-Braun-Straße 1**  
**34212 Melsungen**  
**Germany**

**Employees: 866**

Center of Excellence for IV Sets, RA and CVC

## Melsungen: Plant

### Melsungen

- Plant P  
City of industry, PfiEFFewiesen
- Plant K  
Carl-Braun-StraÙe



## Melsungen: Size of site

- Total size: 15,085 m<sup>2</sup>

### Plant P

- Production area: 5,425 m<sup>2</sup>
- Office area / break rooms: 1,496 m<sup>2</sup>

### Plant K

- Production area: 4,790 m<sup>2</sup>
- Storage area: 1,079 m<sup>2</sup>
- Office area: 663 m<sup>2</sup>

- Quality control: 524 m<sup>2</sup>
- Sterilization: 700 m<sup>2</sup>
- Extrusion: 408 m<sup>2</sup>

## Melungen: Product lines

- IV administration sets
  - Intrafix® (IV administration sets with air vent for gravity infusions)
  - Eurofix (injection ports)
  - Extension lines
  
  - Drug and admixture tools
  - Mini Spike® (withdrawal and injection spike for multidose vials)
  - Transofix® (transfer spike for large containers)
  - Combi Stopper (closing cones)
  
  - Automated infusion systems
- Medical devices for regional anaesthesia
  - Perifix® sets (sets for continuous epidural anesthesia)
  
  - Medical devices for peripheral venipuncture
  
  - Safety CVCs (central venous catheters)
  - Cavafix® (single-lumen catheter set)
  - Certofix® Mono (single-lumen catheter set)
  
  - Components for other subsidiaries

## Meldungen: Capacity

### Capacity per product line

Forecast FY 2009:

▪ IV administration sets	125 mio pieces / annum
▪ Drug and admixture tools	352 mio pieces / annum
▪ Caps / IN-Stopper	286 mio pieces / annum
▪ Mini Spike® / Transofix®	66 mio pieces / annum
▪ Medical devices for regional anaesthesia	9,0 mio pieces / annum
▪ Medical devices for peripheral venipuncture (Mandrin)	61 mio pieces / annum
▪ Safety CVCs	3,1 mio pieces / annum
▪ Components for other subsidiaries	150 mio pieces / annum

### Minimum order quantity per product line

- Mostly mass production
- Deliveries ex stock
- Minimum quantity depends on packaging

## Melungen: Technology

- Injection molding
- Fast / slowly runner; high / lowly cavity mold
- Extrusion processes
- high speed, co extrusion, multi lumen extrusion
- Assembly processes
- fully automatic, semi-automatic, by hand
- Connection processes
- gluing, sealing, ring molding, ultrasonic welding, laser
- Printing (tampon print)
- Checking and control
- vision inspection, air inspection, length measurement
- Packaging (harden / soft packaging)
- Labeling

## Meldungen: Technology

### Sterilization method

- Two sterilization plants for medical products
- Gamma irradiator with cobalt 60, EN 552 and ISO 11137
- Capacity: 51,000 Euro pallets per year
- Gas sterilization with ethylene oxide (EtO), EN 550 and ISO 11135
- Capacity: 13,000 Euro pallets per year
- Sterility assurance level (SAL) 10<sup>-6</sup>, EN 556



## **Meldungen: Labeling / Product range**

### **Labeling / Technologies**

- Primary packaging label
- Printed paper variable dates by printing plate
- Printed paper variable dates by Ink – Jet
- Copying
  
- Secondary packaging label
- Thermo transfer print

### **Packaging range**

- Depends on product specification

## Melungen: Investments

- Capacity enlargement Combi-Stopper, Transfer Set, Mini Spike®
- Capacity enlargement IV-set production
- PE / PVC extrusion line
- Assembly machine connector/protective cap
- Assembly machine filter/protection cap “prime stop”
- Perifix® new catheter generation
- New packaging line for stopper/cones
- Fully automatic line dilatators
- Cavafix® production line
- Replacement investments

## Messungen: Certifications

- DIN EN ISO 9001: Qualitätsmanagementsysteme – Anforderungen QM-Darlegung in Design, Entwicklung, Produktion, Montage und Wartung
- DIN EN ISO 13485: Qualitätssicherungssysteme – Medizinprodukte
- Richtlinie 93/42/EWG des Rates über Medizinprodukte
- 21 Code of Federal Regulations (CFR) 820 (US-Bundesgesetz)
- Canadian Medical Devices Regulations
- Japanese Pharmaceutical Affairs Law (J-PAL)
- Medizinproduktegesetz der Bundesrepublik Deutschland
- Umweltmanagement
- DIN EN ISO 14001: Umweltmanagementsysteme – Spezifikation mit Anleitung zur Anwendung
- Verordnung EMAS-VO 761/2001



Switzerland: [Escholzmatt](#)

**B. Braun Medical AG**  
**Hauptstraße 39**  
**6182 Escholzmatt**  
**Switzerland**

**Employees: 200**

## Escholzmatt: Size of site

- Total size: approx. 13,000 m<sup>2</sup>
- Size of clean room: 3,100 m<sup>2</sup>
- Class of clean room: Class 100 000 according to  
FED 209 / Class D according to GMP /  
ISO 8 according to ISO 14644-1

## Escholzmatt: Product lines

- Syringes (3-piece-single-use syringes; 30 - 100 ml)
- Irrigation syringes (Omnifix® Solo 50 ml; 100 ml)
- Original Perfusor® syringe (20 - 50 ml)
  
- Infusion and transfusion accessories
- Exadrop® (precision IV flow regulator for gravity infusions)
- Portsystem Ecobag®
- Discofix® (stopcock systems for infusion therapy)
- Discofix® C (three-way-stopcock)

## **Escholzmatt: Production method**

- Fully or semi-automatic assembling
- Injection moulding

## Escholzmatt: Capacity

### Capacity per product line

Available capacities (basis budget volume 2006):

- Original Perfusor® syringes: approx. 55 mio pieces
- Omnifix® : approx. 25 mio pieces
- Discofix® C: approx. 35 mio pieces
- Discofix® Standard: approx. 70 mio pieces
- Exadrop® : approx. 3 mio pieces

### Minimum order quantity per product line

- Nearly no restrictions due to customer demand

## **Escholzmatt: Technology**

### **Production Technology**

- Injection moulding
- Assembling (fully or semi-automatic)
- Packaging (form–fill–seal / Multivac)

### **Sterilization method**

- ETO (inhouse)
- Gamma (in Melsungen)

### **Additional Services**

- Service – from the idea to the product from one source
- Research & Development (design and process)
- Prototyping
- Engineering assembling / packaging lines
- Toolmaking (tool shop inhouse)
- Customized products

## **Escholzmatt: Labeling / Packaging range**

### **Labeling / Technologies**

- Ink jet technology

### **Packaging range**

- Nearly no restrictions

## **Escholzmatt: Investments**

- Injection moulding machines (new and replacement)
- Assembling lines (new and replacement)
- Automatisations of packaging
- Environmental investments e.g. reduction of energy consumption
- Improvement of workplace safety

## Escholzmatt: Certifications

- ISO 9001: 2008
- ISO 13485: 2003
- ISO 11135-1: 2007
- OHSAS 18001: 2007
- ISO 14001: 2004
- FDA CFR 21 Part 820



Hungary: [Gyöngyös](#)

**B. Braun Medical Kft.**  
**Deli-Külhatár út 2 – 4**  
**3200 Gyöngyös**  
**Hungary**

**Employees: 600**

## Gyöngyös: Size of site

■ Total size:	45,000 m <sup>2</sup>
■ Total production:	2,830 m <sup>2</sup>
■ Clean room:	2,330 m <sup>2</sup>
■ Class of clean room:	100,000
■ Tube extrusion:	720 m <sup>2</sup>
■ Assembly:	1,260 m <sup>2</sup>
■ Packaging:	350m <sup>2</sup>
■ Final packaging (black zone):	500 m <sup>2</sup>
■ Raw material warehouse:	2,000 m <sup>2</sup>

## **Gyöngyös: Product lines**

- IV administration sets
- Infusion and transfusion accessories
- Medical devices for extracorporeal blood treatment
- Customized kits

## **Gyöngyös: Production method**

- Extrusion of PVC and PUR tubes
- Automatic and manual assembly and packaging

## **Gyöngyös: Capacity**

### **Capacity per product line**

- Medical devices for extracorporeal blood treatment: 3,5 million sets
- IV administration sets: 22 million
- Customized kits: 10 million
- Catheters / suction: 11 million
- WDS bottles: 5,6 million → Development center of WDS bottles in Gyöngyös

### **Minimum order quantity per product line**

- 500 pcs

## Gyöngyös: Production Technology

### Production Technology

#### Extrusion:

- 8 extruder machines equipped with inline Cpk monitoring
- Compounds processed: PVC, PUR
- Diameters: from 2,5 mm to 14 mm
- Inline cutting and punching or reel winded

#### Assembly:

- Automatic assembly machines, manual and semi-automated gluing, welding and heat forming

#### Packaging:

- 8 Multivac packaging lines, blister packaging

## **Gyöngyös: Technology**

### **Sterilization method**

- External sterilisation at Rose (Trier) and in Melsungen

### **Additional services**

- Customized products

## **Gyöngyös: Labeling / Packaging range**

### **Labeling / Technologies**

- Thermotransfer printing

### **Packaging range**

#### Packaging size

- from 60 to 30
- from 660 to 25
- from 350 to 180

## Gyöngyös: Investments

- Automatic assembly machines, productivity improvement

## **Gyöngyös: Certification**

- TÜV Product Service GmbH
- DIN EN ISO13488:2001
- DIN EN ISO9002:1994

### Unique expertise

- Electronic KANBAN, wide application of LEAN tools



Italy: [Mirandola](#)

**B. Braun Avitum Italy S.p.A.**  
**Via XXV Luglio, 11**  
**41037 Mirandola (MO)**  
**Italy**

**Employees: 191**

Center of Excellence and R&D for EVA bags for  
parenteral nutrition and tubing systems for Dialysis

## Mirandola: Size of site

■ Total size:	9,750 m <sup>2</sup>
■ Total production area:	4,750 m <sup>2</sup>
■ Clean room:	1,050 m <sup>2</sup>
■ Class of clean room:	100,000
■ Sterilization:	840 m <sup>2</sup>
■ Utilities:	450 m <sup>2</sup>
■ Laboratories:	550 m <sup>2</sup>

## **Mirandola: Product lines**

- Concentrates for parenteral nutrition in 2- and 3-chamber bags
- Medical devices for clinical nutrition
- Medical devices for extracorporeal blood treatment
- Urology and arthroscopy sets
- Dialysis kits
- Aphaeresis LDL kits

## **Mirandola: Production method**

- Complete manufacturing cycle from raw material selection through component assembly to ETO and Gamma sterilization

## Mirandola: Capacity

### Capacity per product line

Forecast FY 2006:

- |  |                |
|--|----------------|
| ▪ Concentrates for parenteral nutrition in<br>2- and 3-chamber bags for clinical nutrition | 620.000 pcs    |
| ▪ Medical devices for clinical nutrition   | 11.000.000 pcs |
| ▪ Medical devices for extracorporeal blood treatment                                       | 294.000 pcs    |
| ▪ Urology and arthroscopy sets   | 1.000.000 pcs  |

### Minimum order quantity per product line

- Depending by the type of product

## **Mirandola: Technology**

### **Production technology**

- Manual and / or automatic assembling
- Over-moulding
- High frequency welding
- Ultra sonic welding
- Heating welding
- Printing
- Packaging in clean room
- Sterilization

## **Mirandola: Technology**

### **Sterilization method**

- EtO sterilization in BBC
- Gamma sterilization in Melsungen or through Italian sub-contractor

### **Additional services**

- Service “from the idea to the product”
- R&D department
- Engineering department
- Microbiology, chemical and metrology laboratories
- Regulatory
- Quality assurance
- Customized products

## **Mirandola: Labeling / Packaging range**

### **Labeling / Technologies**

- Printing: transfer, serigraphy, ink jet
- Laser-labeling
- Manual and fully automatic printing of labels
- Automatic packaging-unit

### **Packaging range**

- Blister and pouch packaging depending on product

## **Mirandola: Investments**

- Upgrading of acid concentrate production line
- New shipping department area

## **Mirandola: Certifications**

- ISO 9001: 2000
- ISO 13485: 2003
- FDA registered
- EN 550 certified by TUV Product Service



France: [Nogent-le-Rotrou](#)

**B. Braun Medical SAS**  
**13 Rue Croix-la-Comtesse**  
**28400 Nogent-le-Rotrou**  
**France**

**Employees: 500**

Center of Excellence for urine management  
Production for IV systems and urine management

## Nogent-le-Rotrou: Size of site

- Total surface: 22,250 m<sup>2</sup>
- Dark zone: 14,718 m<sup>2</sup>
- Clean room (unclassified): 1,923 m<sup>2</sup>
- White zone (classified): 5,609 m<sup>2</sup>
- Class of clean room: ISO 8

## **Nogent-le-Rotrou: Product lines**

Disposables and sets for automated infusion systems

- Infusomat®
- Extension lines PVC
- Extension lines PE

Containers for urine drainage and urin measurement

- Ureofix®
- Collecting bags

Catheters for urine drainage and urin measurement

- Catheters
- Actreen®

## **Nogent-le-Rotrou: Production method**

- Plastic injection and extrusion
- Fully automatic lines: Infusomat®, extension lines, incontinence products
- Manual production: catheters

## **Nogent-le-Rotrou: Capacity**

Disposables and sets for automated infusion systems

- Infusomat®: 14 millions and 2 millions available
- Extension lines PVC: 21 millions and 5 millions available
- Extension lines PE: 8 millions and 2 millions available

Containers for urine drainage and urin measurement

- Ureofix®: 1.3 million and 0.2 million available
- Collecting bags: 5 millions and 2 millions available

Catheters for urine drainage and urin measurement

- Catheters: 0.4 millions and 0.2 available
- Actreen®: 11 millions and 3 millions available

## **Nogent-le-Rotrou: Capacity**

- Capacity available in injection and extrusion depending of components
- Capacity for EtO sterilization available

### **Minimum order quantity per product line**

- Depending on product line

## **Nogent-le-Rotrou: Technology**

### **Production technology**

- Injection
- Extrusion
- Manual or automatic assembling (gluing, overmoulding, HF, heating,...)
- Packaging

### **Sterilization method**

- EtO in Nogent
- Gamma sterilization in Melsungen

## **Nogent-le-Rotrou: Technology**

### **Additional services**

- R&D department
- Engineering department
- Quality control (technology, microbiology, physic-chemistry, metrology)
- Quality, security, environment management
- Supply chain
- Financial controlling

## **Nogent-le-Rotrou: Labeling / Packaging range**

### **Labeling / Technologies**

#### Printing

- Transfer
- Serigraphy
- Inkjet

### **Packaging range**

- Depending of product and customer

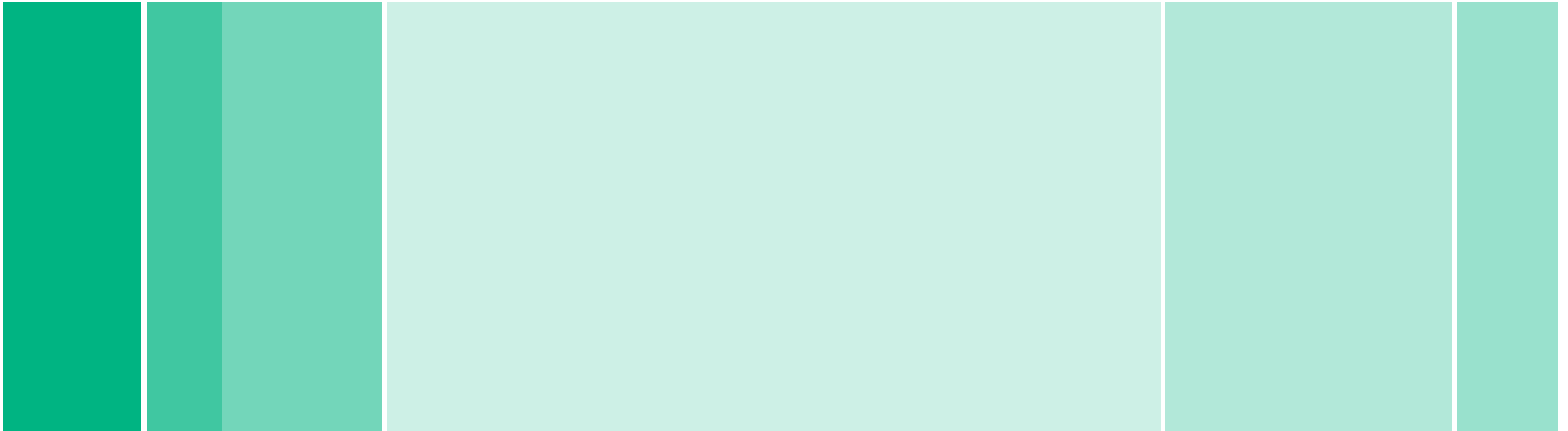
## **Nogent-le-Rotrou: Investments**

Assembling lines for

- Dedicated sets Infusomat®
- Actreen® new generations
- Container Ureofix® Classic
- Collecting bags (Urinocol®,...)
- Extension lines (PVC, PE)
- Building extension to increase surfaces of production area

## **Nogent-le-Rotrou: Certification**

- ISO 9001-v 2008
- EN 13485 –v 2004
- ISO 11 135 –v 2007
- ISO 14001 –v 2004
- BS OHSAS 18001 –v 2007
- Certified for Canada
- Being certified for Japan



## Asia/Pacific Medical Production Sites

- **Malaysia**
  - Penang
  - Penang Needle Production



Malaysia: [Penang](#)

**B. Braun Medical Industries Sdn. Bhd.  
Bayan Lepas Free Industrial Zone  
11900 Bayan Lepas Penang  
Malaysia**

**Employees: 2059**

Center of Excellence for IVC Safety

## Penang: Size of site

- Total: 12,967 m<sup>2</sup>
- Size of clean room: 11,267 m<sup>2</sup>
- Class of clean room: D

## Penang: Product lines

- Safety IVCs (venous catheters for peripheral venipuncture)
- Venofix® (winged IV needles)
- Medical devices for regional anesthesia
- Dosifix® (IV-administration sets with dosage burette)
- IV-administration sets

## **Penang: Production method**

- Safety IVCs: fully automatic, semi-automatic & manual production
- Winged IV needles: fully automatic & semi-automatic
- Medical devices for regional anesthesia: manual production
- IV-administration sets with dosage burette: manual production
- IV-administration sets: manual production & fully automatic

## **Penang: Capacity**

- Safety IVCs: 320 mio units
- Winged IV needles: 35.5 mio units
- Medical devices for regional anesthesia: 10 mio units
- IV-administration sets with dosage burette: 3.5 mio units
- IV-administration sets: 7 mio units (Infusion & Transfusion Sets)

### **Minimum order quantity per product line**

- Safety IVCs: from 10,000 to 24,000 units
- Winged IV needles: 30,000 units
- Medical devices for regional anesthesia: 1,000 units
- IV-administration set with dosage burette: 4,800 units
- IV-administration sets: 1,000 units

## **Penang: Technology**

### **Production technology**

1. Extrusion
2. Injection moulding
3. Semi/Auto assembly machine
4. Packing
5. Gas sterilization
6. IV cannula safety clip stamping

### **Sterilization method**

- EtO

### **Additional services**

- Customized kits (pack our product with customer products as a complete kit. Case to case basis only)

## **Penang: Labeling**

### **Labeling / Technologies**

- Zebra printer using ribbon
- Ink jet technology

## Penang: Investments

- Investment for IV safety cannula production (~Eur 84.4 mio) on auto lines to increase the capacity to 350 mio units per annum in year 2009

## **Penang: Certifications**

- TÜV Product Service according to ISO 9001: 2000 and ISO 13485: 2003



Malaysia: [Penang - Needle Production](#)

**B. Braun Medical Industries Sdn. Bhd.  
Bayan Lepas Free Industrial Zone  
11900 Bayan Lepas Penang  
Malaysia**

**Employees: 373**

## Penang Needle Production: Size of site

- Total size: 4,801 m<sup>2</sup>
- Size of clean room: 2,207 m<sup>2</sup>
- Class of clean room: 100.000 (D)

## Penang Needle Production: Product lines

- Special needles
- Aspiration cannula
- Sterican® (single use hypodermic needle)
- Safety IVCs
- Venofix® (winged IV needles)
- Single use pen needle

## Penang Needle Production: Production method

- Special needles: manual
- Aspiration cannula: semi-automatic
- Single use hypodermic needle: semi-automatic
- Safety IVCs: semi-automatic
- Winged IV needles: semi-automatic
- Single use pen needle: semi-automatic

## Penang Needle Production: Capacity

### Capacity per product line

- Special needles: 20 million pcs/year
- Aspiration cannula: 42 million
- Single use hypodermic needle: 1.2 billion pcs/year
- Safety IVCs: 270 million pcs/year
- Winged IV needles: 34 million
- Single use pen needle: 62 million



### Minimum order quantity per product line

- Special needles: from 1,020 to 35,000 pcs/order (depending on products)
- Aspiration cannula: 100,00 pcs/order
- Single use hypodermic needle: from 150,000 to 216,000 pcs/order
- Safety IVCs: 100,000 pcs/order
- Winged IV needles: 100,00 pcs/order
- Single use pen needle: 130,00 pcs to 176,00 pcs/order (depending on products)

## Penang Needle Production: Technology

### Production technology

- Tube extrusion
- Cannula grinding
- Assembly
- Moulding
- Packing

### Bevels available:

- Regular bevel
- Short bevel
- Blunt needles
- Back cut bevel (usually use for IVC)

### Sterilization method

- EtO

## Penang Needle Production: Labeling / Packaging range

### Labeling / Technologies

- Zebra printer using ribbon
- Laser box printing

### Packaging range

- Sterican®: 100pcs/box
- Special® needles: 15 to 100 pcs/box (depends on product)
- IV cannula } range from 25 Tpcs/box to 80 Tpcs/box depending
- Venofix® cannula } on the sizes
- Aspiration cannula: 5000 pcs/box
- Pen cannula: 100 pcs/box

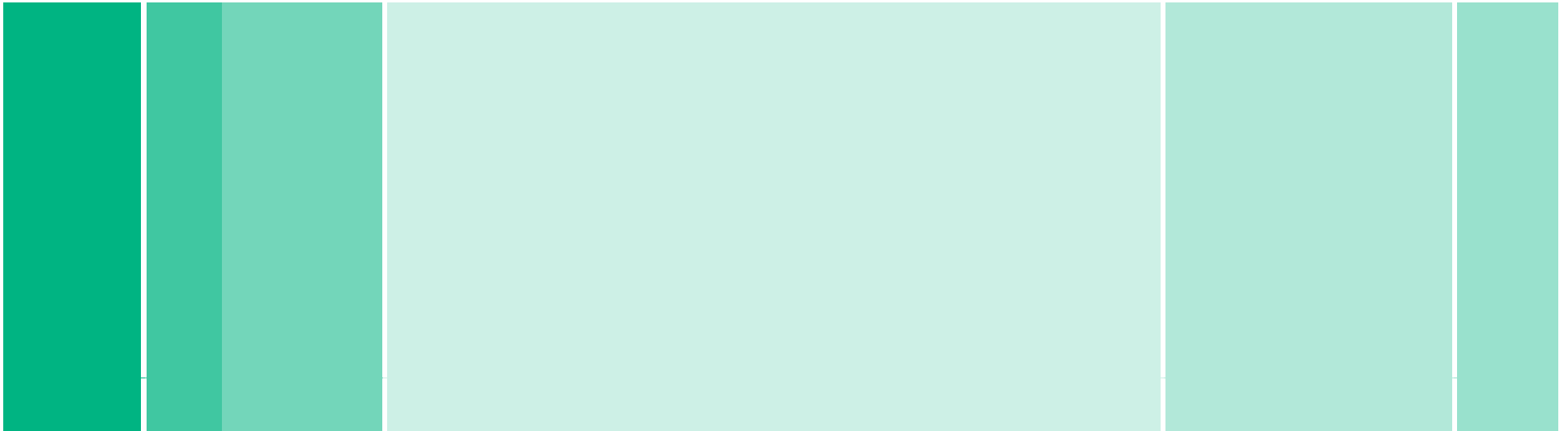
## Penang Needle Production: Investments

Investment for upgrading old machinery & automation

- Electrofusion machine for process simplification.
- This machine will combine 3 process in to 1 and remove 4 interval processes.

## **Penang Needle Production: Certifications**

- TÜV Product Service according to ISO 9001: 2000 and ISO 13485: 2003



## USA Medical Production Sites

- **USA**  
Allentown



**USA: Allentown**

**B. Braun Medical Inc.  
901 Marcon Boulevard  
Allentown, PA 18109-9341**

**Employees: 431 direct & 490 indirect (QA included)**

## Allentown: Size of site

- Production area: 27,881.04 m<sup>2</sup> (300,000 ft<sup>2</sup>)
- Size of clean rooms: 836.43 m<sup>2</sup> (9,000 ft<sup>2</sup>)
- Class of clean room: controlled area ~ class 100,000

## Allentown: Product lines

### Anesthesia Kits

- Epidural
- Spinal

### Needle free valves

- Ultrasite® (injection site)
- Safesite® (safety connector for infusion systems)
- Safeline®

### Pharmacy accessories

- Dispensing pins
- Filter straws
- Filter needles
- Replacement caps

### IV sets

- Specialty products
- Automated small-bore extension sets
- Smith & Nephew
- Inflator syringe
- Custom sets and IV components

## Allentown: Production method

- Plastic injection molding and extrusion
- Automatic lines in needle free, pharmacy, and small-bore set assembly
- Manual production in kits, pharmacy and specialty products

## Allentown: Capacity

- Kits: 7.5 million units
- Ultrasite®: 70 million units
- Safesite®: 30 million units
- Safeline®: 10 million units
- Dispensing pins: 30 million units
- Filter straws: 14 million units
- Filter needles: 10 million units
- Replacement caps: depends on cap
- Automated extension sets: 12.5 millions
- Specialty sets: 750,000
- Smith & Nephew: 600,000
- Inflator syringe: 170,000
- EtO sterilization: 85 percent

## **Allentown: Minimum order quantity per productline**

### **Minimum order quantity per product line**

- Depends on the product

## **Allentown: Technology**

### **Production Technology**

- Injection molding
- Extrusion
- Manual or automatic assembly (solvent bonding ultrasonic, RF, U.V. gluing)
- Packing in clean room

### **Sterilization method**

- EtO

### **Additional services**

- R & D department
- Engineering department
- Quality assurance

## **Allentown: Labeling / Packaging range**

### **Labeling / Technologies**

#### Printing

- Flexography
- Ink jet
- Offset

### **Packaging range**

- Blister and pouch packaging depending on product

## Allentown: Investments

- Specialty products expansion
- Ultra site expansion
- Dispensing pin expansion
- Add ease and horizon automation

## Allentown: Certifications

- ISO 13485: 2003
- FDA registered



**Thank you for your attention**

OEM Division, December 2009

**B | BRAUN**  
SHARING EXPERTISE