

# NEUROFLOW





**NEUROLINE**  
PRODUCT CATALOGUE  
2024

We reserve the right to change specifications, features and solutions without notice.

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## Be Ahead Of The Curve With Our Latest Innovations

WE ARE FAMILY OF MOTIVATED INDIVIDUALS, DRIVEN BY OUR DESIRE TO MAKE INNOVATIVE, EXCELLENT QUALITY MEDICAL PRODUCTS AVAILABLE TO MODERN MEDICINE IN A SUSTAINABLE WAY.

At EMD we offer quality design, production and services, that enable medical professionals to perform advanced minimal invasive operations.

Our carefully accumulated knowledge and expertise enable us to create singular tools and devices that medical professionals can use sustainably. To offer our customers the best of the best, our products are manufactured with meticulous care from high quality materials.

We are dedicated and passionate in everything we do. Through our performance and solution driven mindset, we have the opportunity to make a difference. We are innovation and business oriented with a strong belief in daring to do things better.

# FOREWORD

## From CEO

“

Everything we do is rooted in the belief that, together with our colleagues, teams and partners, we can create positive change to support modern medicine through our high-end products and services.

Each time before we embark on a new development, we have to make sure we possess the essential attributes that will fuel us to work for years to come for the very moment we first hold a new product in hand. These are: know-how, perseverance, proof and faith.

We've been working hard and have come a long way over the last 25 years. When EMD was founded in 1997, we were thinking about how we could design and manufacture minimal invasive medical devices. Since then, we've made such a progress as a team that today, however, we are thinking about how to become one of the best and most innovative companies in the industry.

We are proud of the progress we're making, and are ensuring that our expertise and competencies are essential elements of EMD's future that we will continue to embrace and grow.”

**Mr. Gyula Ujvari**  
FOUNDER & CEO



- 1997** EMD is founded as a repair service provider. Main activity is repair of endoscopic optics and endoscopic instruments.
- 2001** We launch our laparoscopic system being first own product development.
- 2005** EMD steps out of being a local supplier and starts export activities in various markets. EMD begins to develop and produce neurosurgery devices.
- 2012** EMD relocates to new headquarters with more on site facilities. Company profile continues to expand.
- 2017** The company obtains CE approval for own neurosurgical and laparoscopy development.
- 2021** Product portfolio is further increased by six additional EMD product group receiving CE mark.
- 2022** First product group got FDA approval.

# ABOUT US

## Our Vision

We believe in leading not following. We turn fault into our virtue and trust our never-compromising nature dictating our rhythm, which takes us to innovative ideas and exceptional product developments.

We are convinced that possibility is bigger than the fear of failure. That is why we dare to dream big and are not afraid to be challenged on the way to success. Our vision is to be industry leaders in medical device development and manufacture.

## Our Mission

OUR MISSION IS TO SUPPORT MODERN MEDICINE  
BY OFFERING ADVANCED, FIRST-CLASS QUALITY  
MEDICAL DEVICES.

## Our Values

We like to walk our talk and lead by example. Our values are part of who we are, what we stand for and how we act.

Our great colleagues make the difference. It's when we share our skills, knowledge and expertise, we become one team.

We encourage and help each other to achieve our goals, while always having our customers' and their patients' best interest in mind.

## Markets & Expansion

EMD is expanding, with a focus on multi-channel sales. We treat and nurture long term partnerships and business growth as one of our top priorities. We offer advanced and unique medical tools for minimal invasive surgeries that want to give professionals unbeatable value with the best combination of innovation, quality, price and sustainability.

When it comes to expansion strategies and activities, we spare no time to find the most prosperous opportunities we are able to find out there, that not only benefit us, but our partners too. With the continuous product developments we have been making recently, we are enthusiastic to be on the path greatly expanding our existing presence on the market.

## Research & Development

Our network of medical professionals, together with the global industry needs and challenges set new directions to our developments.

Through our product developments, our priority is to effectively support surgical procedures, which are still very difficult or can only be performed with conventional surgery, so that they could be carried out with as few and little incisions as possible. In the near future, we continue to focus on minimal invasive developments and present new products for spine,- neuro,- and laparoscopic surgery.

## Innovative Solutions

Innovative product developments enable us to find and implement new technologic solutions, which are not yet in practice.

At the birth of a new idea, we start exploring ways of execution and won't stop until we find the right technology that can be applied for best results. This way, we are inspired to never stand still, we find new discoveries and are able to create that was thought impossible.

## Professional Experience

**COMBINED WITH BRILLIANT IDEAS  
IN THE SERVICE OF NEUROSCIENCE.**

NEUROSURGERY IS ABOUT PRECISION AND CAREFUL PLANNING.

WITH THE BEST OF OUR KNOWLEDGE AND EXPERIENCE, IN CLOSE CO-OPERATION WITH MOST RENOWNED NEUROSURGEONS, WE OFFER OWN DEVELOPED, PATENTED PRODUCTS IN THE FIELDS OF CRANIAL AND SPINE SURGERY.

# NEUROSURGERY



With **MULT:SMART<sup>®</sup>**

**WE OFFER  
MULTI-CHOICE SOLUTIONS**

DESIGNED FOR ALL NEUROSURGICAL APPLICATIONS, **NeuroSmart** IS AN ADVANCED ELECTRIC MOTOR SYSTEM OF EMD'S NEUROLINE PRODUCT LINE WITH ITS EXTENDED USABILITY FROM CONVENTIONAL SKULL AND BONE SURGERY TO MINIMAL INVASIVE OPERATIONS.

In addition to the **High Speed Mode** which is most commonly used for skull and bone surgery, the MULTISMART-featured control unit has been enhanced with two additional functions (**Endoscopic Spine & Slim Attachment Modes**) that facilitate the system's applicability to spinal surgery and thinner, lower-speed handpieces.

Intelligent improvements eg. Automatic Handpiece Detection and Speed Range Optimisation of the Dedicated Modes maximize patient safety and support user experience.

The upgraded control unit is compatible with the NSS-120 HS engine, which already delivers outstanding performance.



**High Speed**  
RPM MAX 80 000



**Endoscopic Spine**  
RPM MAX 20 000



**Slim Attachment**  
RPM MAX 40 000



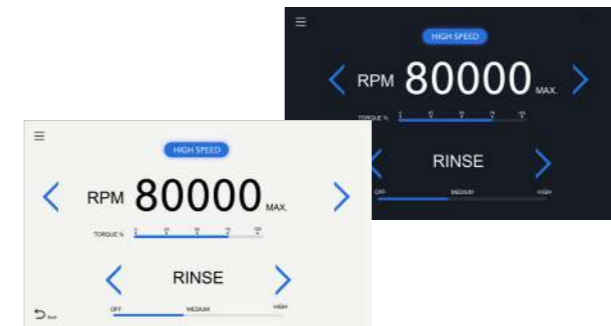
**Maximum Safety. High Power.**

- + MULTI-APPLICATION MODES OF HIGH SPEED/ENDOSCOPIC SPINE/SLIM ATTACHMENT
- + OPTIMAL SPEED RANGES GRANT PATIENT SAFETY
- + OUTSTANDING MOTOR PERFORMANCE OF 120W
- + SPEED RANGE 10.000-80.000 RPM
- + COST-EFFECTIVE SOLUTION - ONE MOTOR OF ALL ATTACHMENTS
- + AUTOMATIC HANDPIECE DETECTION FOR MAXIMUM SAFETY IN HIGH SPEED MODE
- + INTEGRATED IRRIGATION PUMP WITH 5-DEGREE ADJUSTMENT
- + TOUCH SCREEN DISPLAY FOR EASY HANDLING AND CLEANING
- + ONE-CLICK CONNECTION OF SYSTEM ELEMENTS

**TOUCH SCREEN  
FRONT PANEL**

With its one-piece glass front panel, the **NeuroSmart** Control Unit was designed with medical hygiene and user practicality in mind.

The touch screen display offers easy handling and all-inclusive cleaning options. The user-friendly menu supports easy navigation in functions and settings.



**LIGHT/DARK  
APPEARANCE**

The user has the possibility to switch between light and dark view modes at any point during procedure.

**INTEGRATED  
IRRIGATION PUMP**

During neurosurgical procedures, it is essential to ensure about proper cooling at surgical area. The Control Unit features integrated irrigation pump with variable flow control.





## MULT:SMART High Speed

The intelligent, emd®-engineered Motor System recognizes whether a Perforator Handpiece or high speed Handpiece is connected to the motor.

At the same time as the Perforator Handpiece is connected by the user, the Control Unit automatically sets for its most optimal speed for emd® Cranial Perforators, preventing inappropriate speed starting.

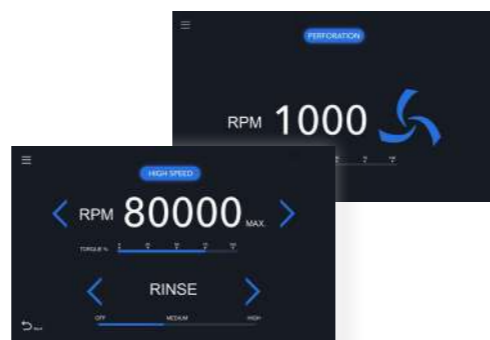
For maximum patient protection, speed drive is automatically optimized to ensure perforation starts at appropriate rpm. Therefore, with the High-Speed Motor System the risk of an accidental high speed start is completely avoided. When the adapter is disconnected, the control unit resets to latest speed use of High Speed Mode.

## AUTOMATIZED MODE SETUP

Connection and disconnection of the Perforator Handpiece results in an immediate, automatized change of user modes and display functions.

In Perforation Mode speed is fixed on 1.000 RPM.

Irrigation can be activated/deactivated by using the rinse button of the footswitch expect for use in Perforation Mode.



## MULT:SMART Endoscopic Spine

For minimal invasive applications in Neurosurgery, dedicated handpieces are developed for the NeuroSmart Motor System.

In Endoscopic Spine Mode the controller software sets the maximum speed that can be adjusted to the limit specified for the Spine Handpieces. This feature eliminates incorrect, excessive speed settings, and provides safety for both user and patient, while protecting the handpiece from premature failure.

Speed is limited in range of 3.000-20.000 RPM. Irrigation is disabled in this mode.



## MULT:SMART Slim Attachment

The purpose of Slim Attachment Mode is to ensure safe, error-free use for the user when applying slim attachments with the NeuroSmart Motor System. This upgrade mode is designed to use of slim handpiece with the heads under a preset safety speed limit.

Speed is limited in range of 10.000-40.000 RPM. Irrigation is disabled in this mode.



## SMART & SUPERB POWERED MOTOR

Highly cost-efficient, due to its high-excursion motor power, the NeuroSmart High-Speed Motor by itself manages to drive the entire range of **emd**® Handpiece attachments at appropriate speed.

Using *One-Click Technology*, the complete range of Hand,- and Nosepiece tools are easily connected to the motor by a single snapping movement.

Integrated *bend relief* to prevent cable torsion and increase protection of connection.



## CABLE CONNECTED FOOTSWITCH

The combined Footswitch pedal is used to start/stop motor operation, while using the push button, rinsing mode is turned on/off.

The footswitch construction complies with IPX8 standard and is therefore easy to clean and disinfect.

Pedal and push button positioning delivers comfort even during longer user times.



## Standard Set Configuration



### NSS-110

#### CONTROL UNIT

Power consumption: 300 VA  
 Power Supply: 110-240 VAC; 50-60 Hz  
 Irrigation capacity: 0-50 ml/min.  
 Weight: 5kg  
 Device class: IIb  
 Protection class: I



### NSS-120

#### HIGH SPEED MOTOR with integrated cable 3m long connecting cable

Autoclavable  
 Max speed: 80.000 rpm  
 Output power: 120W  
 Device class: IIb



### NSS-130

#### DOUBLE FOOTSWITCH 4m long connecting cable

Waterproof  
 Device class: IIb  
 Standard IPX8

WE KNOW THAT

## Patient Safety

STARTS AT ENGINEERING.

THE SKILL LEVEL OF A HIGH-SPEED MOTOR SYSTEM IS GIVEN BY THE VARIETY OF ATTACHMENTS AND THEIR EXTENSIVE FUNCTIONALITY. THE MAIN PRINCIPLES OF OUR CONSTRUCTION ARE SAFETY, ERGONOMICS AND SUSTAINABILITY.

# CRANIAL PERFORATION

# NeuroSmart Perforator Handpiece

## EXPERIENCE THE DIFFERENCE A Handpiece Can Make.

WITH FULL STAINLESS STEEL FINISH, THE NEW GENERATION **emd**® PERFORATOR HANDPIECE TAKES CRANIAL PERFORATION TO THE NEXT LEVEL. A HIGHLY EFFICIENT YET EASY USE MADE POSSIBLE BY THE INTEGRATED SMART TECHNOLOGY.

The speed reducer features *Automatic Trepan Mode* recognition for the NeuroSmart Control Unit. Ergonomic handle for a comfortable, stable grip. Handpiece is available with Hudson end connection.

Thanks to the One-Click Connection, the Perforator Handpiece can be simply mounted on the motor. The perforator lock/release knob can be easily operated with the thumb.

The ergonomic handle is very comfortable to hold and its surface finish allows a secure grip.



**MULTI:SMART**®



Illustration of **emd**® Perforator Handpiece equipped with NeuroLine Single Use Cranial Perforator.






Illustration of **emd**® Perforator Handpiece equipped with NeuroLine Reusable Cranial Perforator.



**NSH-210**  
PERFORATOR HANDPIECE  
Autoclavable

### General Features

-  SPEED SET AT 1.000 RPM
-  **emd**® PERFORATOR HANDPIECE ACCEPTS HUDSON END CONNECTION
-  TO BE USED WITH **emd**® HS MOTOR AND CRANIAL PERFORATORS FOR SKULLS 3.0MM AND 1.5MM THICK



## Unique Advantages. Multiple Safety Mechanisms.

**emd**® NEUROLINE CRANIAL PERFORATORS WERE DESIGNED AND DEVELOPED TO PROVIDE MAXIMUM PERFORMANCE WITH MAXIMUM PATIENT SAFETY. THE INTEGRATED THREE-LEVEL SAFETY TECHNOLOGY IS PATENT PROTECTED AND OFFERS EXCLUSIVE DRILLING EXPERIENCE FOR THE USER.

### EXCELLENT TIP CONTROL TO AVOID SKIDDING

The start of perforation is a critical point, the guiding tip of the drill ensures keeping the perforator exactly on the operation point to avoid skidding on uneven surfaces as well.



### HIGH PERFORMANCE & CONSISTENT DRILLING QUALITY

Thanks to the specially developed edge design, the simultaneous movement of the drilling and cutting heads guarantees optimum results.



### RESTARTABLE AT ANYTIME

The surgeon has the possibility to continuously supervise the perforation, as the device can be stopped and safely restarted anytime.



### BONE PAD FORMATION

Cranial perforation is not a simple drilling, NeuroLine perforators form a bone pad at the end of the drilling process, which protects the dura.

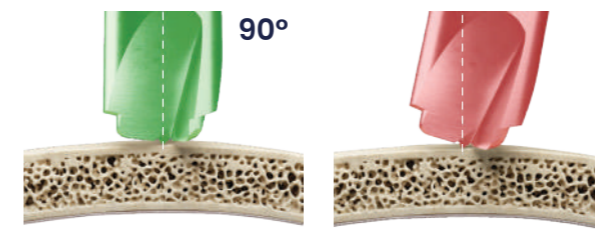


## Product Versatility & Compatibility

PRODUCT RANGE OF **emd**® NEUROLINE CRANIAL PERFORATORS GIVES A FREE CHOICE FOR THE CUSTOMER EITHER THEY PREFER SINGLE USE OR REUSABLE MODELS.

All our perforators are manufactured with universal Hudson end coupling.

Thanks to the standardized connection, compatibility is granted for the most commonly used medical high speed motordrill trepan adapters/speed reducers, which are equipped with standard Hudson chuck fitting.



### IMPORTANCE OF CORRECT POSITIONING

To ensure a safe and successful operation, maintaining the correct position (90°) of the perforator against the skull is crucial and must be remembered at all times when drilling is being performed.

### Explanation of Article Numbers by Size

**NLO-7/11-1.5**

**NLO-B/A-C**

(eg. for disposable perforator for thin bone)

**NLM-11/14-3.0**

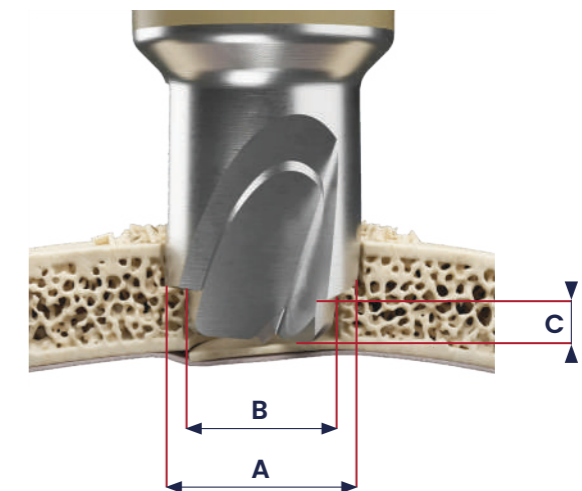
**NLM-B/A-C**

(eg. for reusable perforator for thick bone)

**A:** DIAMETER OF PERFORATOR EXTERNAL DRILL PART  
• DIAMETER OF UPPER PART OF HOLE

**B:** DIAMETER OF PERFORATOR INTERNAL DRILL PART  
• DIAMETER OF LOWER PART OF HOLE

**C:** MINIMUM THICKNESS OF SKULL BONE REQUIRED FOR OPERATION OF PERFORATOR  
(OVERHANG OF INTERNAL DRILL PART ON EXTERNAL DRILL PART)



# DISPOSABLE Cranial Perforators

WITH PATENTED TECHNOLOGY, DISPOSABLE CRANIAL PERFORATORS ARE FULLY DEVELOPED AND MANUFACTURED BY **emd**.

SAFETY BEING OUR TOP PRIORITY, SINGLE-USE PERFORATORS ARE EQUIPPED WITH THREE SAFETY SYSTEMS.

THE BUILT-IN SAFETY MECHANISM ALLOWS THE SAME PRESSURE TO BE APPLIED ON SOFTER AREAS AS WELL WITH SAME EFFICIENCY.



FOR USE ON SKULLS MIN. 3.0MM THICK



**NLO-6/9-3.0**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-7/11-3.0**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-9/13-3.0**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-11/14-3.0**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*

FOR USE ON SKULLS MIN. 1.5MM THICK



**NLO-6/9-1.5**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-7/11-1.5**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-9/13-1.5**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



**NLO-11/14-1.5**  
CRANIAL PERFORATOR, SINGLE USE  
*Disposable, sterile*



# REUSABLE Cranial Perforators

OUR REUSABLE CRANIAL PERFORATORS WITH PATENTED TECHNOLOGY OFFER HIGHEST SAFETY FOR BOTH USER AND PATIENT.

WITH THE DEVELOPMENT OF THE REUSABLE PERFORATOR, WE AIMED TO CREATE SUCH A REUSABLE DEVICE THAT IS ENTIRELY CLEANABLE AND STERILIZABLE.

CONSISTING OF FOUR PARTS, PRODUCT ASSEMBLY AND DISASSEMBLY IS PARTICULARLY EASY. THE **emd**® REUSABLE CRANIAL PERFORATOR IS CURRENTLY THE ONLY CRANIAL PERFORATOR WITH SUCH PRODUCT FEATURES ON THE MARKET.

AVAILABLE WITH HUDSON CONNECTION.



FOR USE ON SKULLS MIN. 3.0MM THICK



**NLM-6/9-3.0**  
CRANIAL PERFORATOR, REUSABLE  
Autoclavable  
available in set with Holder Device



**NLM-7/11-3.0**  
CRANIAL PERFORATOR, REUSABLE  
Autoclavable  
available in set with Holder Device



**NLM-11/14-3.0**  
CRANIAL PERFORATOR, REUSABLE  
Autoclavable  
available in set with Holder Device



**NLM-S2-6/9**  
HOLDER DEVICE  
Autoclavable  
Use with perforator:  
**NLM-6/9-3.0**

**NLM-S2-7/11**  
HOLDER DEVICE  
Autoclavable  
Use with perforator:  
**NLM-7/11-3.0**

**NLM-S2-11/14**  
HOLDER DEVICE  
Autoclavable  
Use with perforator:  
**NLM-11/14-3.0**

## REPROCESSING MADE EASIER

NeuroLine Reusable Perforators are fully dismountable. To make the assembly and reprocessing easier, we developed a holder device for storage and sterilization.

Handling is made easy with the components' dedicated locations identified by pictograms. All cutting edges are protected, minimizing the risk of damage to inserted parts.





WE BELIEVE THAT

## Functionality And Design

CREATE WORK OF ART.

EITHER WE ARE WORKING ON A NEW PRODUCT DEVELOPMENT OR WE ARE RETHINKING AN OLDER DESIGN, OUR TOP PRIORITY IS CREATING HIGH-END PRODUCTS THAT COMPLY WITH THE CHALLENGES OF THE TIME, BOTH IN TERMS OF FUNCTION AND USABILITY.

# CRANIOTOMY

# HANDPIECES Craniotome

## Absolute Performance. Without Compromises.

EACH **emd**® HANDPIECE COLLECTION IS MADE OF STAINLESS STEEL, GUARANTEEING LONG PRODUCT LIFE. WITH THE SLEEKEST DESIGN ON THE MARKET, A CLEAN SHAPE AND SURFACE MAKES OUR CRANIOTOME HANDPIECE ESPECIALLY EASY TO CLEAN AND HOLD. THE ERGONOMIC PEN-GRIP SOLUTION ALLOWS COMFORTABLE USE AND A STABLE GRIP DURING OPERATION.

The *One-Click Technology* provides easy connection of the Craniotome Handpieces by simply snapping it to the motor.

Both the inserted craniotome cutter and duraguard are simultaneously locked in position with rotary knob. For greatest safety, starting of the motor is not possible until rotary knob is locked.

For more user support, duraguards and craniotome cutters are marked with size identifiers. Duraguards are available in fixed and rotatable configurations.

The range also includes additional models for special application areas. Eg. *special head* for craniotomy nearby the sinus or duraguards with *increased head length* for laminotomy.

Craniotome/laminotome heads with fix duraguard are also available with irrigation. The feature ensures a consistent low temperature during cutting.



**MULTISMART**®



Illustration of **emd**® Craniotome Handpiece



Illustration of **emd**® Craniotome Handpiece with Craniotome Head



**NSH-320**  
**CRANIOTOME HEAD**  
Fix - Without Duraguard  
Use with cutters:  
*NLC-1T 3.5mm exposure*  
*NLC-1ST 3.5mm exposure*  
*NLC-2T 5.5mm exposure*  
*NLC-2ST 5.5mm exposure*



**NSH-331R**  
**CRANIOTOME HEAD, L11 R**  
Rotatable - Duraguard - Size 1  
Use with cutters:  
*NLC-1T*  
*NLC-1ST*



**NSH-331**  
**CRANIOTOME HEAD, L11**  
Fix - Duraguard - Size 1  
Use with cutters:  
*NLC-1T*  
*NLC-1ST*



**NSH-332R**  
**CRANIOTOME HEAD, L15 R**  
Rotatable - Duraguard - Size 2  
Use with cutters:  
*NLC-2T*  
*NLC-2ST*



**NSH-332**  
**CRANIOTOME HEAD, L15**  
Fix - Duraguard - Size 2  
Use with cutters:  
*NLC-2T*  
*NLC-2ST*



**NSH-333R**  
**CRANIOTOME HEAD, L25 R**  
Rotatable - Duraguard - Size 3  
Use with cutters:  
*NLC-3T*  
*NLC-3ST*



**NSH-333**  
**CRANIOTOME HEAD, L25**  
Fix - Duraguard - Size 3  
Use with cutters:  
*NLC-3T*  
*NLC-3ST*



**NSH-334R**  
**LAMINOTOME HEAD, L35 R**  
Rotatable - Protection Guard  
(max. speed 30,000 rpm)  
Use with cutters:  
*NLC-4T*  
*NLC-4ST*



**NSH-334**  
**LAMINOTOME HEAD, L35**  
Fix - Protection Guard  
(max. speed 30,000 rpm)  
Use with cutters:  
*NLC-4T*  
*NLC-4ST*

## General Features

- ⊕ SPEED RANGE 10.000-80.000 RPM (EXCEPT FOR LAMINOTOME)
- ⊕ **emd**® CRANIOTOME HANDPIECES ARE DESIGNED FOR BOTH ADULT AND PEDIATRIC SURGERY
- ⊕ **emd**® OFFERS THREE FOOTED DURAGUARDS; ONE LAMINOTOME HEAD; ONE SPECIALTY HEAD FOR SINUS
- ⊕ QUICK AND EASY RELEASE CHUCK OF DURAGUARDS
- ⊕ CRANIOTOME/LAMINOTOME HEADS WITH FIX DURAGUARD ARE ALSO AVAILABLE WITH IRRIGATION

For the available Craniotome cutters, please see HS Tools catalogue.



# CRANIOTOME Cutters

PRECISELY DESIGNED EDGE CONSTRUCTIONS, DURABLE BLADES ARE THE MAIN FEATURES OF NEUROLINE CRANIOTOME CUTTERS.

AVAILABLE IN *FOUR STANDARD LENGTHS* TO FIT THE RIGHT SIZE DURAGUARD OR EVEN A *SPECIAL CRANIOTOME HEAD*.

THREE CUTTING BLADES DELIVER THE BEST PERFORMANCE FOR BOTH *STRAIGHT AND SPIRALED* MODELS.



### NLC-1T

**CRANIOTOME CUTTER, L11**  
 Straight with 3 cutting edge - Size 1  
 Use with duraguard:  
 NSH-331  
 NSH-331R

### NLC-2T

**CRANIOTOME CUTTER, L15**  
 Straight with 3 cutting edge - Size 2  
 Use with duraguard:  
 NSH-332  
 NSH-332R

### NLC-3T

**CRANIOTOME CUTTER, L25**  
 Straight with 3 cutting edge - Size 3  
 Use with duraguard:  
 NSH-333  
 NSH-333R

### NLC-4T

**CRANIOTOME CUTTER, L35**  
 Straight with 3 cutting edge - Size 4  
 Use with duraguard:  
 NSH-334  
 NSH-334R



### NLC-1ST

**CRANIOTOME CUTTER, L11**  
 Spiral with 3 cutting edge - Size 1  
 Use with duraguard:  
 NSH-331  
 NSH-331R

### NLC-2ST

**CRANIOTOME CUTTER, L15**  
 Spiral with 3 cutting edge - Size 2  
 Use with duraguard:  
 NSH-332  
 NSH-332R

### NLC-3ST

**CRANIOTOME CUTTER, L25**  
 Spiral with 3 cutting edge - Size 3  
 Use with duraguard:  
 NSH-333  
 NSH-333R

### NLC-4ST

**CRANIOTOME CUTTER, L35**  
 Spiral with 3 cutting edge - Size 4  
 Use with duraguard:  
 NSH-334  
 NSH-334R

The above article numbers are compatible with the **emd** NeuroSmart HS Motor System.  
 For additional craniotome cutters, please see HS Tools catalogue.

WE BELIEVE THAT

## Uncompromising Quality

IS A MATTER OF HIGH EXPECTATIONS.

GUARANTEEING THE RELIABILITY OF AN **emd**<sup>®</sup> PRODUCT REQUIRES THE APPLICATION OF A MULTITUDE OF SKILLS. FROM THE PRECISE SELECTION OF RAW MATERIALS AND MACHINING TECHNOLOGIES TO THE COMPLEXITY OF PRODUCT CERTIFICATION, EVERY STEP IS TAKEN TO ENSURE THAT OUR QUALITY ITEMS MEET THE HIGHEST SAFETY STANDARDS FOR BOTH THE PATIENT AND THE SURGEON.

# ATTACHMENTS

# HANDPIECES Standard

## Absolute Performance. Without Compromises.

EACH **emd**® HANDPIECE COLLECTION IS MADE OF STAINLESS STEEL, GUARANTEEING A LONG PRODUCT LIFE. FEATURING A PURPOSEFULLY SLEEK DESIGN, THE CLEAN SHAPE AND SURFACE MAKES OUR STANDARD HANDPIECES ESPECIALLY EASY TO CLEAN. THE ERGONOMIC PEN-GRIP SOLUTION ALLOWS COMFORTABLE USE AND A STABLE GRIP DURING OPERATION.

The *One-Click Technology* provides easy connection of the Standard Handpieces by simply snapping it to the motor.

Both the inserted tool cutter and the handpiece are simultaneously locked in position with rotary knob. For greatest safety, starting of the motor is not possible until rotary knob is locked.

The special *Tool Grasping Technology* of attachments supports product selection and economic operation.



**MULTISMART**®



### General Features

- ⊕ SPEED RANGE 10.000-80.000 RPM
- ⊕ STANDARD HANDPIECES ARE COMPATIBLE WITH BURRS Ø 2,3MM
- ⊕ UNIFORM-SIZED ADJUSTABLE EXPOSURE TOOLS ARE COMPATIBLE WITH ALL STANDARD HANDPIECES OF THE NEUROLINE FAMILY

*For available burrs, see HS tools catalogue.*

# HANDPIECES Angled



MULTI:SMART®



**NSH-421**  
STANDARD ANGLED HANDPIECE  
Working length 25mm, ø 5.5mm

**NSH-422**  
STANDARD ANGLED HANDPIECE  
Working length 45mm, ø 5.5mm

**NSH-423**  
STANDARD ANGLED HANDPIECE  
Working length 70mm, ø 5.5mm

**NSH-424**  
STANDARD ANGLED HANDPIECE  
Working length 95mm, ø 5.5mm

**NSH-425**  
STANDARD ANGLED HANDPIECE  
Working length 120mm, ø 5.5mm

**NSH-426**  
STANDARD ANGLED HANDPIECE  
Working length 170mm, ø 5.5mm

**NSH-427**  
STANDARD ANGLED HANDPIECE  
Working length 220mm, ø 5.5mm

## Burrs With Benefits

USER-FRIENDLY AND COST-EFFICIENT HS TOOLS ARE AVAILABLE WITH THE MOST COMMONLY USED GEOMETRIES.

THANKS TO THE SPECIAL *TOOL GRASPING TECHNOLOGY*, ALL STANDARD STRAIGHT AND ANGLED **emd**® NEUROLINE HANDPIECES ARE TO BE USED WITH *UNIFORM-SIZED* BURRS AND TOOLS.



ONE SIZE.  
MANY APPLICATIONS.



### EXPOSURE IN 8 POSITIONS

Desired tool length is easily adjustable according to user preferences.



# ATTACHMENTS Slim

## Absolute Performance. Without Compromises.

EACH **emd**<sup>®</sup> HANDPIECE COLLECTION IS MADE OF STAINLESS STEEL, GUARANTEEING A LONG PRODUCT LIFE. FEATURING A PURPOSEFULLY SLEEK DESIGN, THE CLEAN SHAPE AND SURFACE MAKES OUR SLIM HANDPIECES ESPECIALLY EASY TO CLEAN. THE ERGONOMIC *PEN-GRIP SOLUTION* ALLOWS COMFORTABLE USE AND A STABLE GRIP DURING OPERATION.

Several neurosurgical applications require more precise access to the operating area.

Slim attachments have a detachable construction of angled handpiece and a small bore nosepiece. The surgeon can simply change the slim head on the handpiece to the suitable length or form model without any tools needed. Connection between the head and the handpiece is an **emd**<sup>®</sup> patent.

Slim Attachments are mainly used in spine surgery applications. All handpiece and nosepiece combinations are well balanced which is a great benefit during longer operations.



**MULTI:SMART**<sup>®</sup>



**NSH-510**  
SLIM HANDPIECE  
*Angled*



**NSH-521**  
LINEAR SLIM HEAD  
*Working length 85mm, ø 4.5mm*



**NSH-522**  
LINEAR SLIM HEAD  
*Working length 105mm, ø 4.5mm*



**NSH-523**  
LINEAR SLIM HEAD  
*Working length 125mm, ø 4.5mm*



**NSH-531**  
CURVED SLIM HEAD  
*Working length 85mm, ø 4.5mm*






**NSH-532**  
CURVED SLIM HEAD  
*Working length 105mm, ø 4.5mm*



**NSH-533**  
CURVED SLIM HEAD  
*Working length 125mm, ø 4.5mm*

### General Features

-  SPEED RANGE 10.000-40.000 RPM
-  SLIM HEADS ARE COMPATIBLE WITH SLIM BURRS ONLY (Ø 1.0MM SHAFT)
-  EACH SLIM HEADS CAN BE ROTATED AND LOCKED IN THE DESIRED POSITION IN A 360° RANGE



 **Stainless Steel**  
BALLTIP BURRS

 **Diamond**  
BALLTIP BURRS



$(\varnothing = \text{MM})$	2	L85	NLB-Z-A110A
	3		NLB-Z-A120A
	4		NLB-Z-A130A

$(\varnothing = \text{MM})$	2	L85	NLB-Z-A140A
	3		NLB-Z-A150A
	4		NLB-Z-A160A

$(\varnothing = \text{MM})$	2	L105	NLB-Z-A110B
	3		NLB-Z-A120B
	4		NLB-Z-A130B

$(\varnothing = \text{MM})$	2	L105	NLB-Z-A140B
	3		NLB-Z-A150B
	4		NLB-Z-A160B




$(\varnothing = \text{MM})$	2	L125	NLB-Z-A110C
	3		NLB-Z-A120C
	4		NLB-Z-A130C

$(\varnothing = \text{MM})$	2	L125	NLB-Z-A140C
	3		NLB-Z-A150C
	4		NLB-Z-A160C




BALLTIP Slim Burrs

BALLTIP Slim Burrs

**General Features**

-  SPEED RANGE 10.000-40.000 RPM
-  BURRS SHOWN ON THIS PAGE ARE COMPATIBLE WITH **emd**® NSH-5XX SLIM HEADS
-  SINGLE USE PRODUCT SUPPLIED IN STERILE PACKING

**General Features**

-  SPEED RANGE 10.000-40.000 RPM
-  BURRS SHOWN ON THIS PAGE ARE COMPATIBLE WITH **emd**® NSH-5XX SLIM HEADS
-  SINGLE USE PRODUCT SUPPLIED IN STERILE PACKING



WE SHOW MORE OF OUR  
**Expertise in Endoscopy**

MODERN SURGICAL TECHNOLOGIES ARE GAINING GROUND IN AN INCREASING NUMBER OF APPLICATIONS. AT **emd**<sup>®</sup> WE ARE COMMITTED TO MAKING OUR DECADES OF DEVELOPMENT AND MANUFACTURING EXPERIENCE IN ENDOSCOPY AVAILABLE TO AS MANY SURGICAL FIELDS AS POSSIBLE.

**ENDO SPINE SURGERY**

# ENDOSCOPIC SPINE Surgery

## Minimal Invasive Surgery Innovations In Spine Surgery

ENDOSCOPY IS AN ADVANCED TECHNIQUE IN OPERATION PROCEDURES, WHICH BRINGS THE ADVANTAGES OF THE MINIMAL INVASIVE SURGERY METHOD IN MANY MEDICAL FIELDS.

SPINE SURGERY IS A TYPICAL APPLICATION OF MIS IN NEUROSURGERY THAT CAN BENEFIT THE MOST FROM THE ADVANTAGES OF THIS SURGICAL METHOD, EITHER FROM THE PATIENT'S OR THE PHYSICIAN'S POINT OF VIEW.

For endoscopic spine surgery, disposable endoburrs with or without protection have been developed for this purpose. Endoburrs are special single use compact attachments containing the burrs and available with several burr shapes in two working lengths. With this economic construction Endoburrs are directly connecting to the motor ignoring the demand for any additional handpiece of the motor.

**emd**® Endoscopes and endoburrs for endoscopic spinal surgery are designed for use in stenosis, interlaminar and transforaminal approaches, with some overlap in size, allowing the user to minimise the cost of surgical instruments.



**MULTISMART**



### STENOSIS

#### NET-100A15

**ENDOSCOPE**  
Outer diameter: ø 10mm  
Working channel: 7.1mm  
Irrigation-suction channel: 2 x 1.7mm  
Working length: 125mm  
Total length: 199mm  
Angle of view: 15°

#### NED-100AA

**DILATOR, SINGLE HOLE**  
Diameter: ø 10.1mm  
Length: 170mm

#### NES-100AA

**WORKING TUBE, BEVELED**  
Outer diameter: ø 12mm  
Inner diameter: ø 10.1mm  
Length: 126mm

#### NES-100AB

**WORKING TUBE, FLAT**  
Outer diameter: ø 12mm  
Inner diameter: ø 10.1mm  
Length: 126mm

### INTERLAMINAL II.

#### NET-070B30

**ENDOSCOPE**  
Outer diameter: ø 6.9mm  
Working channel: 4.2mm  
Irrigation-suction channel: 2 x 1.4mm  
Working length: 181mm  
Total length: 255mm  
Angle of view: 30°

#### NED-070BB

**DILATOR, 2 CHANNEL**  
Diameter: ø 7mm  
Length: 226mm

#### NES-070BA

**WORKING TUBE, BEVELED**  
Outer diameter: ø 9mm  
Inner diameter: ø 7mm  
Length: 182mm

### INTERLAMINAL I.

#### NET-070A30

**ENDOSCOPE**  
Outer diameter: ø 6.9mm  
Working channel: 4.2mm  
Irrigation-suction channel: 2 x 1.5mm  
Working length: 130mm  
Total length: 204mm  
Angle of view: 30°

#### NED-070AB

**DILATOR, 2 CHANNEL**  
Diameter: ø 7mm  
Length: 175mm

#### NES-070AA

**WORKING TUBE, BEVELED**  
Outer diameter: ø 9mm  
Inner diameter: ø 7mm  
Length: 131mm

### TRANSFORAMINAL

#### NET-070B30

**ENDOSCOPE**  
Outer diameter: ø 6.9mm  
Working channel: 4.1mm  
Irrigation-suction channel: 2 x 1.4mm  
Working length: 181mm  
Total length: 255mm  
Angle of view: 30°

#### NED-070BB

**DILATOR, SINGLE HOLE**  
Diameter: ø 7mm  
Length: 226mm

#### NES-070BA

**WORKING TUBE, BEVELED**  
Outer diameter: ø 9mm  
Inner diameter: ø 7mm  
Length: 182mm

#### NES-070BC

**WORKING TUBE, ELEVATED**  
Outer diameter: ø 9mm  
Inner diameter: ø 7mm  
Length: 182mm







**NLB-Z-A210B**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A220B**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A010B**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A020B**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G140B**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G160B**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A230B**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A240B**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A030B**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A040B**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G140A**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G160A**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A210C**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A220C**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A010C**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A020C**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Ball diameter: ø 3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G140C**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G160C**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-D140C**

**ENDOBURR, L220, STAINLESS STEEL EGG BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 220mm  
 Sterile, Single use (use directly with NSS-120 Motor)

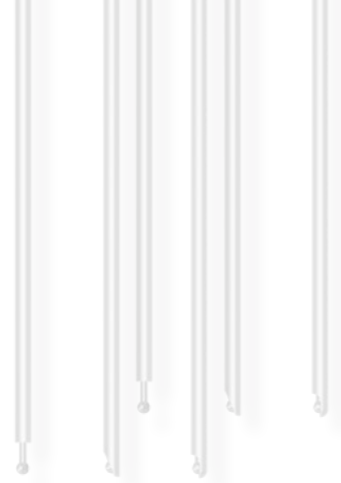
**NLB-Z-D160C**

**ENDOBURR, L300, STAINLESS STEEL EGG BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter: ø 4mm  
 Tip size: ø 3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)

INTERLAMINAL I.

**For INTERLAMINAL** APPROACH SURGERY,  
A SHORTER AND A LONGER WORKING LENGTH ENDOSCOPE CAN  
BE SELECTED TO ENSURE COVERAGE OF THE ENTIRE SPINAL COLUMN.

THE ENDOSCOPE WITH THE SHORTER WORKING LENGTH IS COMPATIBLE  
WITH THE HANDPIECES FOR STENOSIS SURGERY, WHILE  
THE ENDOSCOPE WITH THE LONGER WORKING LENGTH AND  
THE HANDPIECES ARE ALL SUITABLE FOR TRANSFORAMINAL APPROACH  
SURGERIES.



**NLB-Z-A210A**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*

**NLB-Z-A230A**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  4mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A010A**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G040B**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  4mm x 6mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A210B**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A010C**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G140C**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



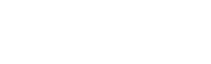
**NLB-Z-A010B**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G140B**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A210C**

**ENDOBURR, L220, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A010C**

**ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G140C**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G140C**

**ENDOBURR, L220, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 220mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



INTERLAMINAL I.



STERILE R

**NLB-Z-A230B**

ENDOBURR, L220, DIAMOND BALLTIP BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A030B**

ENDOBURR, L220, STAINLESS STEEL BALLTIP BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G140A**

ENDOBURR, L220, STAINLESS STEEL  
CYLINDRICAL BURR IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 220mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-D140A**

ENDOBURR, L220, STAINLESS STEEL EGG BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 220mm  
Sterile, Single use (use directly with NSS-120 Motor)

INTERLAMINAL I.



STERILE R

**NLB-Z-A220A**

ENDOBURR, L300, DIAMOND  
BALLTIP BURR IN SUPPORT TUBE  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A240A**

ENDOBURR, L300, DIAMOND  
BALLTIP BURR IN SUPPORT TUBE  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  4mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A020A**

ENDOBURR, L300, STAINLESS STEEL  
BALLTIP BURR IN SUPPORT TUBE  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G060B**

ENDOBURR, L300, STAINLESS STEEL  
CYLINDRICAL BURR IN SUPPORT TUBE  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  4mm x 6mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A220B**

ENDOBURR, L300, DIAMOND  
BALLTIP BURR IN SUPPORT TUBE  
WITH DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A020B**

ENDOBURR, L300, STAINLESS STEEL  
BALLTIP BURR IN SUPPORT TUBE  
WITH DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G160B**

ENDOBURR, L300, STAINLESS STEEL  
CYLINDRICAL BURR IN SUPPORT TUBE  
WITH DISTAL PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A220C**

ENDOBURR, L300, DIAMOND  
BALLTIP BURR IN SUPPORT TUBE  
WITH BEVELED PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A020C**

ENDOBURR, L300, STAINLESS STEEL  
BALLTIP BURR IN SUPPORT TUBE  
WITH BEVELED PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-G160C**

ENDOBURR, L300, STAINLESS STEEL  
CYLINDRICAL BURR IN SUPPORT TUBE  
WITH BEVELED PROTECTION  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 300mm  
Sterile, Single use (use directly with NSS-120 Motor)

INTERLAMINAL II.



**NLB-Z-A240B**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A040B**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G160A**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Tip size:  $\varnothing$  3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-D160A**

**ENDOBURR, L300, STAINLESS STEEL EGG BURR IN SUPPORT TUBE WITH FOOTED DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Tip size:  $\varnothing$  3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A220A**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)

**NLB-Z-A240A**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  4mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A020A**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G060B**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE**  
 Outer diameter:  $\varnothing$  4mm  
 Tip size:  $\varnothing$  4mm x 6mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A220B**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A020B**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G160B**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH DISTAL PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Tip size:  $\varnothing$  3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A220C**

**ENDOBURR, L300, DIAMOND BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-A020C**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Ball diameter:  $\varnothing$  3mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)



**NLB-Z-G160C**

**ENDOBURR, L300, STAINLESS STEEL CYLINDRICAL BURR IN SUPPORT TUBE WITH BEVELED PROTECTION**  
 Outer diameter:  $\varnothing$  4mm  
 Tip size:  $\varnothing$  3mm x 5mm  
 Working length: 300mm  
 Sterile, Single use (use directly with NSS-120 Motor)

INTERLAMINAL II.

TRANSFORAMINAL



TRANSFORAMINAL



**NLB-Z-A240B**

**ENDOBURR, L300, DIAMOND BALLTIP BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-A040B**

**ENDOBURR, L300, STAINLESS STEEL BALLTIP BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Ball diameter:  $\varnothing$  3mm  
Working length: 300mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**NLB-Z-G160A**

**ENDOBURR, L300, STAINLESS STEEL  
CYLINDRICAL BURR IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 300mm  
*Sterile, Single use (use directly with NSS-120 Motor)*

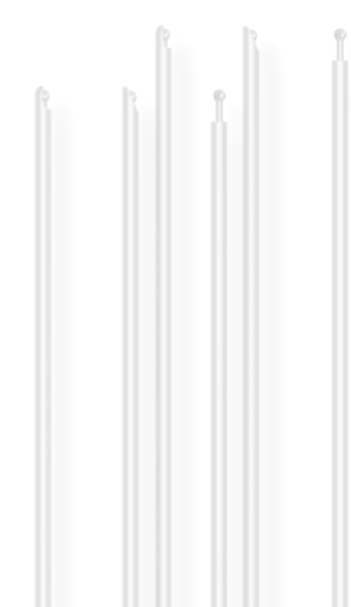


**NLB-Z-D160A**

**ENDOBURR, L300, STAINLESS STEEL EGG BURR  
IN SUPPORT TUBE  
WITH FOOTED DISTAL PROTECTION**  
Outer diameter:  $\varnothing$  4mm  
Tip size:  $\varnothing$  3mm x 5mm  
Working length: 300mm  
*Sterile, Single use (use directly with NSS-120 Motor)*



**MULTISMART**





WE KNOW THAT THE  
**Success Of An Operation**  
RELIES ON THE TEAM BEHIND.

THE LIFE EXPECTANCY OF A HIGH QUALITY MEDICAL DEVICE DEPENDS ON BOTH THE ACCURACY OF MANUFACTURING AND THE CARE TAKEN IN ITS OPERATION AND REPROCESSING.

AS MANUFACTURERS, WE STRIVE TO OFFER SOLUTIONS FOR MEDICAL PROFESSIONALS TO ENSURE EASE OF USE, STORAGE AND STERILISATION.

ACCESSORIES

## ACCESSORIES OF IRRIGATION

TO KEEP THE OPERATION AREA COOL WE RECOMMEND TO CHOOSE A SUFFICIENT IRRIGATION METHOD.

USING THE INTEGRATED PUMP OF THE NEUROSMART CONTROL UNIT WITH THE SINGLE USE IRRIGATION TUBE SET ADAPTED ON THE HANDPIECE PROVIDES A COMFORTABLE SOLUTION.

THE REUSABLE IRRIGATION ADAPTER CAN BE EASILY AND SAFELY FIXED ON THE HANDPIECE. WIDE SELECTION IS AVAILABLE FOR THE ALL WORKING LENGTH RANGE.



### NSI-641

STANDARD IRRIGATION ADAPTER, L25  
Standard – Size 1  
NSH-411  
NSH-421

### NSI-642

STANDARD IRRIGATION ADAPTER, L45  
Standard – Size 2  
NSH-412  
NSH-422

### NSI-643

STANDARD IRRIGATION ADAPTER, L70  
Standard – Size 3  
NSH-413  
NSH-423

### NSI-644

STANDARD IRRIGATION ADAPTER, L95  
Standard – Size 4  
NSH-414  
NSH-424



### NSI-611

FLUID BOTTLE HOLDER  
For NSS-110

### NSI-645

STANDARD IRRIGATION ADAPTER, L120  
Standard – Size 5  
NSH-415  
NSH-425

### NSI-646

STANDARD IRRIGATION ADAPTER, L170  
Standard – Size 6  
NSH-416  
NSH-426

### NSI-647

STANDARD IRRIGATION ADAPTER, L220  
Standard – Size 7  
NSH-417  
NSH-427

### NSI-610

IRRIGATION SET  
For NSH-4xx, NSH-5xx handpieces  
made by ASSAmed GmbH /  
REF AMP85.3000



# The Importance Of Product Care

PROPER PRE-CLEANING IS ESSENTIAL TO PROVIDE EFFECTIVE STERILIZATION. THANKS TO OUR WASH-RINSE DEVICE ALL THE ATTACHMENTS ARE FULLY FLUSHABLE.

THE SYSTEM COMPONENTS CAN BE EASILY POSITIONED AND ITS USAGE ENSURES THAT THE INSIDE OF EACH COMPONENT IS PERFECTLY FREE OF CONTAMINATION.



## THE LIFE CYCLE OF MEDICAL DEVICES CONTINUES BEYOND THE O.R.

Life expectancy of our tools and devices can be further extended by careful maintenance.

In our stainless steel Storage Container all system components can be perfectly over-viewed. The specific silicone holders fix the system elements safely, granting stable position during the preprocessing.

We strongly recommend using a synthetic Oiling Spray dedicated for cleaning and lubrication, as well as following our product specific instructions of use.



### NSC-710

**WASH-RINSE DEVICE**  
with cleaning connections for attachments  
Autoclavable



### NSC-712

**CERAMIC FILTER**  
For NSC-710  
made by MELAG Medizintechnik GmbH & Co. KG / REF 64375

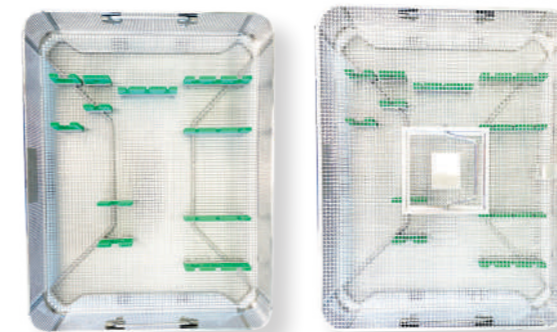


### NSC-720

**OILING SPRAY**  
300ML  
Use for all NSH-XXX handpieces (except for NSH-210)

### NSC-721

**OILING SPRAY NOZZLE**  
For NSC-720



### NSC-730

**INSTRUMENT TRAY**  
with lid and silicon holders  
Autoclavable  
dimensions: 482mm x 246mm x 73mm (L x W x H)  
For storage and sterilization





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