MagVenture

MAGNETIC STIMULATION

Accessories Catalogue

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At the time of printing, this manual correctly described the device and its functions. However, as modifications may have been carried out since the production of this manual, the system package may contain one or more addenda to the manual. This manual including any such addenda must be thoroughly read, before using the device.

The following situations void any guarantee(s) and obligations for Tonica Elektronik A/S:
- The device is not used according to the enclosed manuals and other accompanying documentation
- The device is installed or modified by persons other than Tonica Elektronik A/S or other authorized service technicians

Contents

Introduction

This Accessories Catalogue lists and describes all standard accessories available for the MagPro series.

Each application has its own stimulation requirements, and selecting an appropriate stimulating coil is important.

Selection Criteria for Magnetic Stimulating Coils

Large or Small Coils?

Large coils provide a good penetration depth, but are not very focused. The small coils, however, are more focused, but have relatively poor penetration depth.

The coils come in many sizes and shapes. The two most commonly used coils are the circular shaped coil and the butterfly shaped coil (or the "figure of 8" coil).

Circular Coils

The induced current in the tissue occurs under the windings; consequently fairly large area of body tissue will be stimulated. The circular coil may be positioned conveniently over many parts of the body and usually serves well as a "general purpose coil".

Butterfly Coils

The Butterfly coils are more focused in comparison with the circular coils. The two windings are placed side-by-side, enabling the coil to stimulate structures with focus right under its center. The butterfly coil is useful in focused stimulation of deep structures.

Coils with Fluid

Magnetic stimulating coils become warm during use because energy is deposited in the coil due to electrical resistance. To prevent fast overheating in the coil, coils with a reservoir of fluid (F-coils) have been developed. The fluid partially absorbs the heat, enabling the coil to perform more stimuli. These coils are not recommended for MagPro Compact.
When making more than a few stimuli, place the coil in a holding device. See separate section in this catalogue for a description of the Flexible Arm.

Coils with External Cooling

Where a very high number of stimuli are required at high repetition rates and long pulse trains, extra cooling is necessary.
Cool-Coils with external Cooler Unit fulfill these requirements. These coils are not recommended for MagPro Compact.
When making more than a few stimuli, place the coil in a holding device. See separate section in this catalogue for a description of the Flexible Arm.

Power Control

Most coils have a trigger button in the handle for clinical operation, and some also have a power control, making remote control of the amplitude possible*).

*) Coils with power control are not backwards compatible with old MagPro stimulator versions.

Custom Design and Modifications

Custom designed coils are available as well as modification of existing coils, ranging from extending the coil cable to a complete change of geometry of the coil. Please contact MagVenture for further details.

General Information

Environment

The devices have been designed for indoor use at operating ambient temperatures ranging from +10°C to +30°C (from +50°F to +86°F). The storage temperature is ranging from 0°C to 50°C (+32°F to +120°F).

The operating ambient humidity is ranging from RH 40% to 70%. Storage humidity from RH 10% to 90%

The coils have a thermo sensor, which turns the stimulator off, when the coil surface reaches a temperature of 41°C (106°F).

Intended use

See the accompanying documentation and the User Guide for the magnetic stimulator device.

Contraindications

See the accompanying documentation and the User Guide for the magnetic stimulator device.

General Warnings

See the accompanying documentation and carefully read the following warnings

Warnings

- Do not use this equipment for anything else than it is intended for by the manufacturer.
- The device must only be used under the constant supervision of qualified medical personnel, only on patients who are not anaesthetized and only for short term use.
- The device is not compatible for use in an MR magnetic field. Please consult the manufacturer for available special solutions such as the MRi-B90 II system.
- Rapid cortical stimulation can induce seizures. Ensure that appropriate safety measures are taken, before using the equipment.
- To protect patients from excessive exposure to magnetic gradients keep the number of stimulations as low as possible.
- Do NOT use the equipment when other equipment/device is within a distance of 1m from the connected coil.
- The device is not intended for use with anesthetic gases or any other flammable media – danger of electrical ignition.
- The operator must be protected against long-term magnetic fields (e.g. by using a holding device as the Flexible Arm).
- Hearing protection is recommended if the coil is used near the head or when operating with more than 100 stimuli a day.
- Not to be used on small children.
- Keep out of reach of children.
- Precautions should be taken when stimulating patients with suspected or diagnosed labile or hypertensive blood pressure.
- Do not use the equipment on patients who have an implanted device that is activated or controlled in anyway by. physiological signals (examples: pacemakers, implantable cardioverter-defibrillators [ICD's], vagus nerve stimulators [VNS] and wearable cardioverter-defibrillators [WCD's], ocular implants, deep brain stimulators, implanted medication pumps, intracardiac lines, even when removed. Contraindicated use could result in serious injury or death.
- Do not use the equipment on patients having conductive, ferromagnetic or other magnetic-sensitive materials implanted in the head or within 30cm of the treatment coil (examples: cochlear implants, implanted electrodes /stimulators, aneurysm clips or coils, stents, bullet

fragments, jewelry and hair barrettes, sutures, magnetic dental implants or implanted insulin pumps). Failure to follow this restriction could result in serious injury or death.

- Bystanders with implanted device of any kind or implanted metallic objects MUST stay in distance of least 1m from the coil in operation.
- To minimize uncertainty it is important always keeping the coil in direct contact and as tangent to the scalp surface, direct over the actual wanted exposed area.
- Electrical equipment for medical use requires special EMC precautions and needs to be installed and serviced according to the EMC documentation of the device.

Cautions

- Before connecting, please read the instructions for use.
- Metallic (conductive) objects in the field may be propelled forcibly by the stimulus pulse. Make sure there are no rings, coins or similar metal objects near the coil when it is activated.
- Do not place the stimulation coil on or near: video monitors, watches, calculators, credit cards, or computer disks. Damage or erasure may occur.
- Be careful by stimulate patient with implanted devices or metallic objects located also in areas outside the 30cm distance from the coil during rTMS. Examples include: sutures and implanted insulin pumps.
- Adverse effects as scalp pain, headache and burning sensation can appear during and after stimulation on the head. Ref.: the guideline “Safety of TMS Consensus Group, Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research” by Rossi S, Hallett M, Rossini PM, Pascual-Leone A. Clin Neurophysiology. 2009 Dec;120(12):2008-39.
- Longer term effects of exposure to the MagPro magnetic field on the head are not known. Experimental and observational evidence indicates that exposure to the type of magnetic fields produced by the MagPro coil does not present any significant risk of acute or long-term adverse effects. Ref.: the guideline “Safety of TMS Consensus Group, Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research” by Rossi S, Hallett M, Rossini PM, Pascual-Leone A. Clin Neurophysiology. 2009 Dec;120(12):2008-39.
- Before changing the stimulation coil, press Disable on the magnetic stimulator to avoid damage to personnel and equipment.
- Always use the Flexible Arm to hold the Magnetic Stimulation Coils of Fluid- or Cool types during stimulations.
- Changes in noise level or sound frequency from the coil during stimulation may indicate beginning damages inside the coil. Stop using the coil and contact a Service Center; otherwise it may disintegrate.
- Always carefully examine the coil handle, housing and cables for cracks, marks, deformations, color changes and other signs of damage before using it. Do not use the coil if there is any evidence of stress failure; otherwise it may disintegrate.
- The coil must not be submersed into any conductive liquid, including water. The encapsulation tolerates low levels of surface moisture - but in general care should be taken to **keep all surfaces clean and dry**.
- Service must be referred to your local distributor.

Operating period (Coils)

Danger

The Magnetic Coils have a restricted operating period.
Mechanical vibrations and thermal stress during stimulation can degenerate the coil over time.
Even if the coil is not used aging of materials and liquid inside the coil over time can occur.
Storage of the coil must always be within the range of temperature and humidity specified.

Magnetic Stimulating Coils must not be used after the expiration date.

The expiration date is shown on the label, which is situated on top of the large orange coil connector, as YYYY-MM-DD.

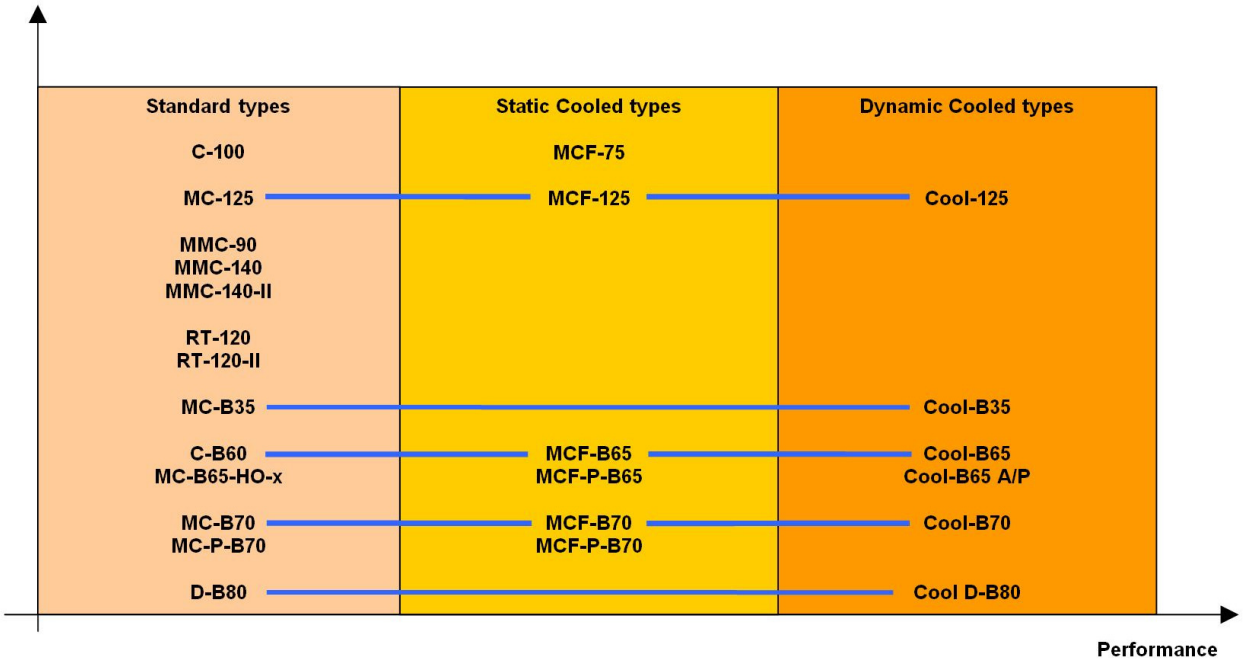
All Cool-Coils have a built in timer and counter with preset operating period (days and stimulations).

Maximum operating period for the coils:

Coil type	Maximum operating period
C-100 C-B60 MC-B35 MC-125 MC-B70 MMC-90 MMC-140 MMC-140-II RT-120 RT-120-II MC-B65-HO D-B80 MC-P-B70	5 years
MCF-B65 MCF-B70 MCF-75 MCF-125 MCF-P-B65 MCF-P-B70	3 years
Cool-B35* Cool-B65 Cool-B70 Cool D-B80 Cool-125 Cool-B65 A/P	5 years or max. 18.000.000 EPV *max. 2.000.000 EPV (see separate User Guide for Cool coils)
MRi-B90 II	2 years
Custom designed coils	See separate datasheets

Range of Coils

MagVenture is supporting a wide range of coils in 3 basic designs; standard, static cooled and dynamic cooled types.
Across these basic designs the magnetic field is similar for different families of coils. These are indicated with a blue horizontal line in figure below.



Magnetic stimulator overview

		MagPro R30 MagPro X100	MagPro R100	MagPro Compact
Part no.	**Coil type**	**SW support from**	**SW support from**	**Supported**
9016E0201	MCF-P-B70	5.0.0	1.1.43 rev.6	Not recommended
9016E0211	MMC-90	6.0.0	1.1.43 rev.6	Yes with converter
9016E0401	MCF-B70	5.0.0	1.1.43 rev.6	Not recommended
9016E0413	MCF-125	0.97	1.0.3	Not recommended
9016E0423	MCF-B65	0.97	1.0.3	Not recommended
9016E0431	D-B80	0.97	1.0.3	Yes with converter
9016E0442	MCF-75	3.21	1.0.3	Not recommended
9016E0462	MC-B65-HO-2	0.97	1.0.3	Yes with converter
9016E0472	MC-B65-HO-8	0.97	1.0.3	Yes with converter
9016E0482	C-B60	0.97	1.0.3	Yes
9016E0491	Cool-B65	3.22	1.0.3	Not recommended
9016E0501	Cool-B65 A/P	5.0.0 / 5.2.0 *		Not recommended
9016E0511	Cool-125	5.0.0		Not recommended
9016E0521	Cool-B70	5.0.0		Not recommended
9016E0531	Cool D-B80	5.0.1		Not recommended
9016E0555	MC-125	0.97	1.0.3	Yes with converter
9016E0564	MC-B70	0.97	1.0.3	Yes with converter
9016E0573	MMC-140	0.97	1.0.3	Yes with converter
9016E0582	C-100	0.97	1.0.3	Yes
9016E0592	MC-P-B70	0.97	1.0.3	Yes with converter
9016E0601	MCF-P-B65	0.97	1.0.3	Not recommended
9016E0631	MMC-140-II	0.97	1.0.3	Yes
9016E0641	RT-120	0.97	1.0.3	Yes with converter
9016E0651	RT-120-II	0.97	1.0.3	Yes
9016E0661	MRi-B90 II	5.2.0		No
9016E0671	MC-B35	5.0.1		Yes with converter
9016E0681	Cool-B35	5.2.0		Not recommended

*) Cool-B65 A/P:
Support for real double blinded studies requires MagPro software version 5.2.0 or newer and special Research PC program - MagLink (9016S0121) for study setup.

Symbols and Warnings

Symbols

The device complies with the EC directive 93/42/EEC on medical devices

The device is of Type BF, i.e. the applied part is electrically isolated.

Indicates the current direction on coils

Storage temperature range. Packaging label

SN xxx Serial Number.

P/N Part Number

Waste Electrical and Electronic Equipment: Compliance information.

User information: Do not dispose of this product in the unsorted municipal waste stream. Dispose of this product according to local regulations.

CAUTION Electric shock hazard. Do not remove the cover. The coils are not serviceable by the user. Please contact a Service Center (please see the back of this catalogue for further details).

Classification

Magnetic Coils.
IEC 60601-1, IP24

Encapsulation of Coils

Minimum 2mm plastic material. Windings are placed symmetrically in horizontal plane inside the encapsulation.

EMC and Interference

WARNING Electrical equipment for medical use requires special EMC precautions and needs to be installed and serviced according to the EMC documentation of the main device.

Maintenance and Waste Management

Daily

After use, clean the coil with normal dishwashing liquids, and then disinfect it with propyl alcohol, isopropyl alcohol, or ethyl alcohol.
The enclosure material can withstand a temperature of 50°C for cleaning and disinfecting.
Check the coil for damages, cracks, marks, deformations, color changes and other irregularities. Do not use the coil if there is any evidence of stress failure and contact a Service Center.

Waste Management

The device and its accessories must be disposed of separately as electronic waste according to local regulations.
See compliance information in the symbols section.

Standard Coils

C-100 Circular Coil with power control

- The coil is suitable for general-purpose stimulation.
- Equipped with power control and trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.6kg
Dimensions of transducer head	ø123 x 11.5 mm
Cable length	1.7m
Coil Winding Data	
Inner diameter	20mm
Outer diameter	110mm
Winding height	6mm
Number of windings	14
Magnetic and Electrical Properties	
Max initial dB/dt	35 kT/s near the coil surface.
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	400 pulses
Ordering Number	9016E058-

C-B60 Butterfly Coil with power control

- The coil is suitable for focused stimulations.
- Equipped with power control and trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.7kg
Cable length	1.7m
Dimensions of transducer head	165 x 85 x 19 mm
Coil Winding Data	
Inner diameter	35mm
Outer diameter	75mm
Winding height	11mm
Number of windings	2x (2 x 5)
Magnetic and Electrical Properties	
Max initial dB/dt	35 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C:	350 pulses
Mean output 75% of maximum at 1pps.	
Ordering Number	9016E048-

MC-B35 Butterfly Coil

- The coil handle is placed orthogonal to the coil surface.
- The coil is suitable for focused stimulation of peripheral nerves and muscles.
- Compact design
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.6kg
Cable length	1.5m
Dimensions of transducer head	103 x 55 x 18 mm
Coil Winding Data	
Inner diameter	24mm
Outer diameter	47mm
Winding height	9mm
Number of windings	2x (3 x 4)
Magnetic and Electrical Properties	
Max initial dB/dt	50 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	75 pulses
Ordering Numbers	9016E067-

MC-B70 Butterfly Coil

- The coil is suitable for focused stimulation.
- The coil is produced with a slight bend surface to closely follow the shape of the head.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1.1kg
Cable length	1.7m
Dimensions of transducer head	169 x 112 x 16/33 mm
Angle	150°
Coil Winding Data	
Inner diameter	25mm
Outer diameter	97mm
Winding height	6mm
Number of windings	2 x 10
Magnetic and Electrical Properties	
Max initial dB/dt	31 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	400 pulses
Ordering Number	9016E056-

MC-125 Circular Coil

- The coil is suitable coil for general purpose stimulation.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.6kg
Cable length	1.3m
Dimensions of transducer head	ø130 x 11.3 mm
Coil Winding Data	
Inner diameter	28mm
Outer diameter	114mm
Winding height	6mm
Number of windings	13
Magnetic and Electrical Properties	
Max initial dB/dt	41 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	450 pulses
Ordering Number	9016E055-

MMC-90 Parabolic Coil

- The coil is parabolic in shape to provide a powerful and focused stimulation.
- Suitable for stimulation of jaw, neck and popliteal region.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.9kg
Cable length	2.5m
Dimensions of transducer head	ø95 x 22/40 mm
Coil Winding Data	
Inner diameter	25mm
Outer diameter	87mm
Winding height	11mm
Number of windings	2 x 9
Magnetic and Electrical Properties	
Max initial dB/dt	30 kT/s near the coil surface on the convex side
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	450 pulses
Ordering Number	9016E021-

MMC-140 Parabolic Coil

- The coil is parabolic in shape to provide a powerful and focused stimulation.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.8kg
Cable length	1.5m
Dimensions of transducer head	ø143 x 14.5/33 mm
Coil Winding Data	
Inner diameter	25mm
Outer diameter	120mm
Winding height	6mm
Number of windings	14
Magnetic and Electrical Properties	
Max initial dB/dt	33 kT/s near the coil surface on the concave side
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	650 pulses
Ordering Number	9016E057-

MMC-140-II Parabolic Coil with power control

- The coil is parabolic in shape to provide a powerful and focused stimulation.
- Equipped with power control and trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.9kg
Cable length	2.5m
Dimensions of transducer head	ø143 x 17/39 mm
Coil Winding Data	
Inner diameter	25mm
Outer diameter	126mm
Winding height	6mm
Number of windings	15
Magnetic and Electrical Properties	
Max initial dB/dt	33 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	650 pulses
Ordering Number	9016E063-

RT-120 Racetrack Coil

- The coil is elliptic in shape and is especially suitable for stimulation of wider areas such as bigger muscles.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1.3 kg
Cable length	1.5 m
Dimensions of transducer head	ø90 x 200 x 26 mm
Coil Winding Data	
Outer loop	ø80 x 160 mm
Inner loop	ø30 x 110 mm
Winding height	15 mm
Number of windings	10
Magnetic and Electrical Properties	
Max initial dB/dt	31 kT/s near the coil surface
Active pulse width	280µs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	1500 pulses
Ordering Number	9016E064-

RT-120-II Racetrack Coil with power control

- The coil is elliptic in shape and is especially suitable for stimulation of wider areas such as bigger muscles.
- Equipped with power control and trigger button to support clinical operation.

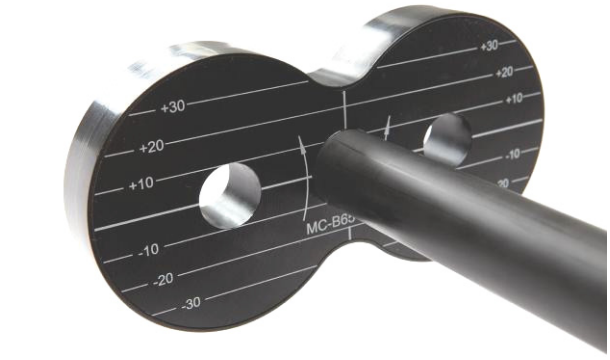
Mechanical Properties	
Weight of transducer head	1,5 kg
Cable length	2,5 m
Dimensions of transducer head	ø90 x 175 x 26 mm
Coil Winding Data	
Outer loop	ø80 x 160 mm
Inner loop	ø30 x 110 mm
Winding height	15 mm
Number of windings	10
Magnetic and Electrical Properties	
Max initial dB/dt	31 kT/s near the coil surface
Active pulse width	280µs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	1500 pulses
Ordering Number	9016E065-

D-B80 Butterfly Coil

- Open butterfly design for powerful stimulation.
- The coil is suitable for deep stimulation.
- The coil has a slightly bent surface to closely follow curved shapes.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	0.9kg
Cable length	1.7m
Angle	120°
Coil winding data	
Inner diameter	67mm
Outer diameter	95mm
Winding height	12mm
Number of windings	2x (3+4)
Magnetic and Electrical Properties	
Max initial dB/dt	31 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	500 pulses
Ordering Number	9016E043-

MC-B65-HO-2m and 8m Butterfly Coils



- The coil handle is placed orthogonal to the coil surface.

Mechanical Properties	
Weight of transducer head	0.7kg
Cable length	2m (B65-HO-2) 8m (B65-HO-8)
Dimensions of transducer head	162 x 85 x 22 mm
Coil Winding Data	
Inner diameter	35mm
Outer diameter	75mm
Winding height	11mm
Number of windings	2x (2 x 5)
Magnetic and Electrical Properties	
Max initial dB/dt	25 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	350 pulses
Ordering Numbers	9016E046- (2m) 9016E047- (8m)

Static Cooled Coils

MCF-B65 Butterfly Coil

- The Coil is designed for demanding clinical studies, requiring a high number of stimuli without the need for external cooling.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1.5kg
Cable length	2m
Dimensions of transducer head	174 x 94 x 53 mm
Coil Winding Data	
Inner diameter	35mm
Outer diameter	75mm
Winding height	12mm
Number of windings	2x (2 x 5)
Magnetic and Electrical Properties	
Max initial dB/dt	32 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	2000 pulses
Ordering Number	9016E042-

MCF-B70 Butterfly Coil

- The coil has electrical and magnetic properties similar to the MC-B70.
- The Coil is designed for demanding clinical studies, requiring a high number of stimuli without the need for external cooling. Number of stimulations up to 3 times more than MCF-B65.
- The coil is produced with a slightly bent surface to closely follow the shape of the head. Motor threshold is achieved at 10% to 20% lower output compared to MCF-B65.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	2.5kg
Cable length	1.3m
Dimensions of transducer head	180 x 116 x 45/64 mm
Angle	150°
Coil Winding Data	
Inner diameter	23mm
Outer diameter	97mm
Winding height	12mm
Number of windings	2 x 11
Magnetic and Electrical Properties	
Max initial dB/dt	28 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	5500 pulses
Protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=75% @ total number of stimulations 3000	One protocol can be performed without overheating the coil. Minimum cooling time between protocols: 2.5 hours at 20°C or 1 hour at 7°C
Ordering Number	9016E040-

MCF-75 Circular Coil

- The Coil is designed for demanding clinical studies, requiring a high number of stimuli without the need for external cooling.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1kg
Cable length	1.3m
Dimensions of transducer head	ø88 x 41.5 mm
Coil Winding Data	
Inner diameter	10mm
Outer diameter	65mm
Winding height	18mm
Number of windings	3 x 7
Magnetic and Electrical Properties	
Max initial dB/dt	43 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	500 pulses
Ordering Number	9016E044-

MCF-125 Circular Coil

- The Coil is designed for demanding clinical studies, requiring a high number of stimuli without the need for external cooling.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1.5kg
Cable length	2m
Dimensions of transducer head	ø140.5 x 41.5 mm
Coil Winding Data	
Inner diameter	35mm
Outer diameter	121mm
Winding height	6mm
Number of windings	13
Magnetic and Electrical Properties	
Max initial dB/dt	34 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	2000 pulses
Ordering Number	9016E041-

Dynamic Cooled Coils

The Cool-system is designed for applications requiring a very high number of stimuli.

The Cool-system is optimized for use with equipment enabling High Repetition Rates and long pulse trains – such as MagPro. The coils are equipped with trigger buttons in the handle to ease clinical operations.

Built-in timer and counter: Preset to an operating period of typical 1800 days (approximately 5 years) or a maximum Equivalent Pulse Value (EPV) of 18.000.000 whichever occurs first.

Cool-B35 Butterfly Coil

- The coil has electrical and magnetic properties similar to the MC-B35.
- The coil is suitable for focused stimulation of peripheral nerves and muscles.
- Compact design
- The Coil is designed for demanding clinical studies, requiring a higher number of stimuli than the MC-B35.
- The Coil is cooled from an external Cooler Unit.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.
- Built in timer and counter with preset operating period (days and stimulations)

Mechanical Properties	
Weight of transducer head	1.2kg
Cable length	1.3m
Dimensions of transducer head	113 x 65 x 42 mm
Coil Winding Data	
Inner diameter	10mm
Outer diameter	46mm
Winding height	15mm
Magnetic and Electrical Properties	
Max initial dB/dt	50 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 1pps.	150 pulses
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	300 pulses
Ordering Number	9016E068-

Cool-B65 Butterfly Coil

- The coil has electrical and magnetic properties identical to the MCF-B65.
- The Coil is designed for demanding clinical studies, requiring a very high number of stimuli.
- The Coil is optimized for use with equipment enabling High Repetition Rates and long pulse trains.
- The Coil is cooled from an external Cooler Unit.
- Equipped with trigger button to support clinical operation.
- Built in timer and counter with preset operating period (days and stimulations)

Mechanical Properties	
Weight of transducer head	1.7kg
Cable length	1.3m
Dimensions of transducer head	174 x 94 x 41 mm
Coil Winding Data	
Inner diameter	35mm
Outer diameter	75mm
Winding height	12mm
Number of windings	2x (2 x 5)
Magnetic and Electrical Properties	
Max initial dB/dt	36 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 2pps.	>20.000 pulses
Number of stimulations, before warm-up at ambient temperature 20°C with protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=75%.	>10.000 pulses
Ordering Number	9016E049-

Cool-B70 Butterfly Coil

- The coil has electrical and magnetic properties similar to the MCF-B70.
- The Coil is designed for demanding clinical studies, requiring a very high number of stimuli.
- The coil is produced with a slightly bent surface to closely follow the shape of the head.
- The Coil is optimized for use with equipment enabling High Repetition Rates and long pulse trains.
- The Coil is cooled from an external Cooler Unit.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.
- Built in timer and counter with preset operating period (days and stimulations)

Mechanical Properties	
Weight of transducer head	2.9kg
Cable length	1.3m
Dimensions of transducer head	180 x 116 x 45/64 mm
Angle	150°
Coil Winding Data	
Inner diameter	23mm
Outer diameter	97mm
Winding height	12mm
Number of windings	2 x 11
Magnetic and Electrical Properties	
Max initial dB/dt	28 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 2pps.	>20.000 pulses
Number of stimulations, before warm-up at ambient temperature 20°C with protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=100%.	>10.000 pulses
Ordering Number	9016E052-

Cool D-B80 Butterfly Coil

- The coil has electrical and magnetic properties similar to the D-B80.
- The coil is suitable for deep stimulation.
- The coil is produced with a slightly bent surface to closely follow curved shapes.
- The Coil is designed for demanding clinical studies, requiring a very high number of stimuli.
- The Coil is cooled from an external Cooler Unit.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.
- Built in timer and counter with preset operating period (days and stimulations)

Mechanical Properties	
Weight of transducer head	1.8kg
Cable length	1.3m
Dimensions of transducer head	2 x ø110mm Thickness 30mm
Angle	120°
Coil Winding Data	
Inner diameter	67mm
Outer diameter	95mm
Winding height	12mm
Number of windings	2x (3+4)
Magnetic and Electrical Properties	
Max initial dB/dt	31 kT/s near the coil surface
Active pulse width	280µs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 2pps.	>20.000 pulses
Number of stimulations, before warm-up at ambient temperature 20°C with protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=75%.	>10.000 pulses
Ordering Number	9016E053-

Cool-125 Circular Coil

- The coil has electrical and magnetic properties similar to the MCF-125.
- The Coil is designed for demanding clinical studies, requiring a very high number of stimuli.
- The Coil is optimized for use with equipment enabling High Repetition Rates and long pulse trains.
- The Coil is cooled from an external Cooler Unit.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.
- Built in timer and counter with preset operating period (days and stimulations)

Mechanical Properties	
Weight of transducer head	2.5kg
Cable length	1,3m
Dimensions of transducer head	ø140 x 45 mm
Coil Winding Data	
Inner diameter	15mm
Outer diameter	121mm
Winding height	12mm
Number of windings	15
Magnetic and Electrical Properties	
Max initial dB/dt	34 kT/s near the coil surface
Active pulse width	280μs (Biphasic)
Performance	
Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 2pps.	>20.000 pulses
Number of stimulations, before warm-up at ambient temperature 20°C with protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=100%.	>10.000 pulses
Ordering Number	9016E051-

Coil Cooler Unit

- Used as external cooling system for Cool coils.
- Equipped with special liquid cooling media.

Mechanical Properties	
Weight of unit	10kg
Height x width x depth	20 x 30 x 30 cm
Capacity of cooling media	1.8 liter
Mains power cable length	3m
Electrical Properties	
Available Main Voltage	100-240V, 50-60Hz
Power consumptions	Maximum 40VA
Ordering Number	9016B015-

MRi Coil System

MRi-B90 II Butterfly Coil

- Designed for use in MRI scanners up to 4 Tesla with biphasic waveform in standard mode.
- Coil windings are symmetrically placed inside the housing so the magnetic field on both sides is equal.
- With the External Control Software (9016S0141) it is possible to control different settings on MagPro from a standard PC with USB or Serial port interface.

Mechanical Properties

Weight of transducer head	1.1 kg
Dimensions of transducer head	172 x 142 x 32 mm
Cable length	6m

Coil Winding Data

Inner diameter	2 x ø35/ø52
Outer diameter	2 x ø75/ø92
Distance between centers	79 mm
Winding height	18 mm
Number of windings	2x (2x5)

Magnetic and Electrical Properties

Max initial dB/dt	24 kT/s
Active pulse width	280µs (Biphasic)

Performance

Number of stimulations before warm-up with coil start temperature 20°C: Mean output 100% of maximum at 1pps.	300 pulses

Ordering Numbers

9016E066-	Coil MRi-B90 II
9016C072-	Remote Control
9016C074-	Emergency stop
9016C075-	Power Line Filter

Coil MRi-B90 II

Emergency Stop

Remote Control

Power Line Filter

Dimensions: 360 x 160 x 70 mm (LxWxH)

Research Coils

MC-P-B70 Placebo Butterfly Coil

- The coil's magnetic shield provides a field reduction of approximately 80%.
- The Placebo Coil has a mechanical outline and sound level identical to MC-B70.
- The coil is produced with a slightly bent surface to closely follow the shape of the head.
- Number of stimulations before warm-up is identical to MC-B70
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	1.8kg
Cable length	1.3m
Dimensions of transducer head	169 x 112 x 36/53 mm
Angle	150°
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	400 pulses
Ordering Number	9016E059-

MCF-P-B65 Placebo Butterfly Coil

- The coil's magnetic shield provides a field reduction of approximately 80%.
- The Placebo Coil has a mechanical outline and sound level identical to MCF-B65.
- With a reduction of stimulus intensity with 20-25% the coil can perform the same number of stimulations as the normal MCF-B65.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	2.9kg
Cable length	2m
Dimensions of transducer head	174 x 94 x 53 mm
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	1600 pulses
Ordering Number	9016E060-

MCF-P-B70 Butterfly Coil

- The coil's magnetic shield provides a field reduction of approximately 90%.
- The Placebo Coil has a mechanical outline and sound level identical to MCF-B70.
- Large ergonomic handle.
- Equipped with trigger button to support clinical operation.

Mechanical Properties	
Weight of transducer head	2.2kg
Cable length	1.3m
Dimensions of transducer head	180 x 116 x 45/64 mm
Angle	150°
Performance	
Number of stimulations before warm-up at ambient temperature 20°C: Mean output 75% of maximum at 1pps.	1400 pulses
Ordering Number	9016E020-

Cool-B65 A/P Butterfly Coil

- The Cool-B65-A/P Coil is designed for advanced clinical studies where double blinded research experiments are required.
- The Cool-B65-A/P functions both as an active (A) coil and as a placebo (P) coil.
- The Cool-B65-A/P has a symmetrical mechanical design and no labeling on the coil indicates the active or placebo side. Consequently it is not possible for the operator to see or hear which side is used.
- The coil has electrical and magnetic properties identical to the MCF-B65 and Cool-B65.
- Built-in orientation switch to determine which side the operator shall direct towards the patient.
- For use only with MagVenture rTMS Research software – MagLink (9016S0121).
- Adjustable output for current stimulation surface electrodes enables skin stimulation to occur synchronously with the magnetic stimulation pulse
- Built in timer and counter with preset operating period (days and stimulations)
- Includes Stimulator Electrode Cable and one pack of Surface Electrodes (12pcs.)

Mechanical Properties

Weight of transducer head	3kg
Cable length	1.3m
Dimensions of transducer head	174 x 94 x 80 mm

Coil Winding Data

Inner diameter	35mm
Outer diameter	75mm
Winding height	12mm
Number of windings	2x (2 x 5)

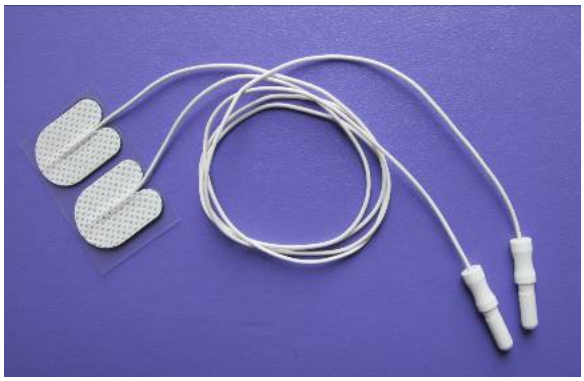
Magnetic and Electrical Properties

Max initial dB/dt	Max initial dB/dt: 36 kT/s near the coil surface on the active side, same as Cool-B65 Coil. The magnetic field near the coil surface on the placebo side is reduced to <5% of active side.
Active pulse width	280μs (Biphasic)

Performance

Number of stimulations, before warm-up at ambient temperature 20°C: Mean output 100% of maximum at 2pps.	>20.000 pulses
Number of stimulations, before warm-up at ambient temperature 20°C with protocol: 60 trains @ 50 pulses/train @ 10pps @ Inter Train Interval: 25s @ Output=75%.	>10.000 pulses
Ordering Number	9016E050-

Stimulator Electrode Cable and Electrodes for Cool-B65 A/P Coil



- Pack of Pre-gelled Surface electrodes (12pcs.) with 1.5mm touch-proof connector.

Surface Electrodes (pack of 12pcs.)	
Electrode size	28 x 20 mm
Sensor material	Silver / silver chloride
Gel system	Solid gel
Sensor area	490 mm^2
Cable length	50 cm
Connector	1.5mm female TP
Ordering Number	9016S020-

- Stimulator Electrode cable for Cool-B65 A/P Coil with 1.5mm touch-proof connectors.

Shielded Electrode cable	
Cable length	2 m
Connector for electrodes	1.5mm male TP (2 pcs.)
Ordering Number	9016C080-

Basic Stimulator Accessories

Super Flex Arm for Magnetic Coil Positioning

Mechanical Properties (long version)

Coils	All coils up to ø38mm handle
Length of arm	Vertical rod: 60cm Flexible rods: 2 x 40 cm
Weight of arm	6.5 kg
Ordering Number	9016B017-

Mechanical Properties (short version)

Coils	All coils up to ø38mm handle
Length of arm	Vertical rod: 60cm Flexible rods: 2 x 25 cm
Weight of arm	6 kg
Ordering Number	9016B018-

- For easy and flexible positioning of the magnetic coils.
- The arm has three joints. Two ball joints which can rotate in multiple directions and one central joint which can rotate in one direction.
- All three joints can be locked and unlocked by the grip on the central joint.
- Designed for use with all types of coils.
- Mounted on the side of the trolley for MagPro.

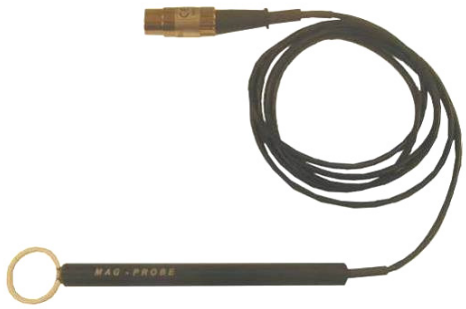
MagProbe magnetic field evaluation

MagProbe is designed to provide information about the magnetic field from stimulating coils. The probe is useful as a simple tool for estimating the suitability of a specific coil, intended for a specific application. In addition, the probe enables the user to predict the ability to stimulate at different locations in tissue, when using different coil positions.

MagProbe provides a quantitative measure of the field gradient and the peak magnetic field amplitude. The MagProbe output is proportional to the magnetic field change with time (dB/dt). The change in the magnetic field with time induces a proportional voltage in tissue. This voltage generates a current, the amplitude of which is depending on the conductivity of the tissue and bone structure. This is the current that can stimulate the nerve and muscle fibers.

3 different types of MagProbes are available.

MagProbe (DIN)



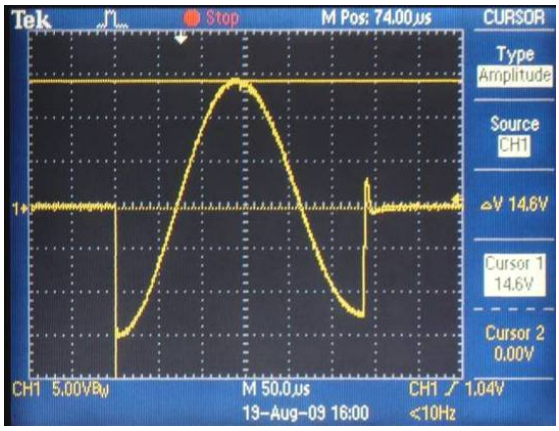
With a standard DIN connector for easy usage with EMG/EP equipment.

Technical Data for MagProbe (DIN)

Connector	5p DIN plug
Cable length	3 m
Loop wire	ø2.8mm CU.
Loop inside diameter	20mm.
Output voltage	1 mV per 1 kT/s.
Accuracy	±10%
Approx. peak Correction factors	20kHz 1.2 10kHz 1.4 5kHz 1.8
Ordering Number	9016E031-

MagProbe (BNC)

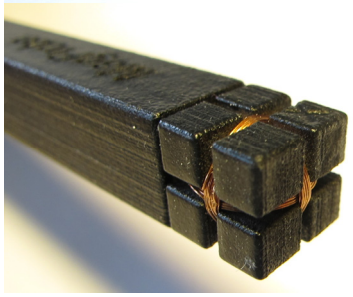
With a standard BNC connector for easy usage with an oscilloscope.



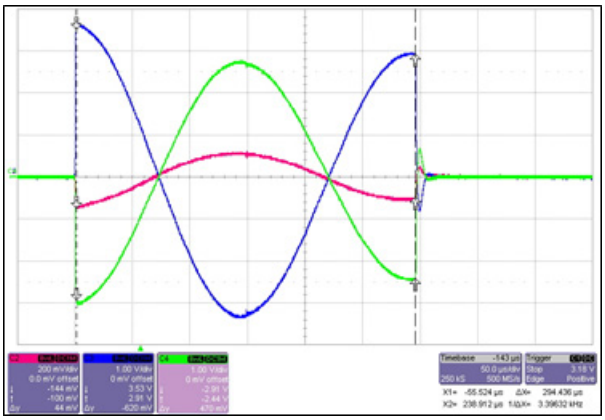
Technical Data for MagProbe (BNC)

Connector	BNC plug
Cable length	3 m
Loop wire	ø2.8mm CU.
Loop inside diameter	20mm.
Output voltage	1 V per 2.6 kT/s.
Accuracy	±10%
Ordering Number	9016E033-

MagProbe 3D



Probe measures all 3 axes (X, Y and Z) at the same time. With standard BNC connectors for easy usage with an oscilloscope.



Sample of all 3 waveforms (Ex,Ey,Ez) measured concurrent.
Etot = Sqrt(Ex2+Ey2+Ez2)

Technical Data for MagProbe 3D

Connector	BNC plug – 3 pcs.
Cable length	2 m
Loop wire	ø0.2mm CU.
Loop inside diameter	ø10 – 10 windings
Output voltage	1 V per 1.4 kT/s.
Accuracy	±5%
Ordering Number	9016E035-

110V Power Supply Option for MagPro Compact

Mechanical Properties

Weight of transformer	7kg
Cable length primary	3m
Cable length secondary	1.3m
Height x width x depth	11 x 18 x 18 cm
Encapsulation	Overall min 2 mm PS Non flammable Impact resistant

Electrical Properties

Available Main Voltage	100V, 115V, 127V
Max Energy Output	750VA
Ordering Number	9016D002-

Isolation Transformer for MagPro System solutions

- For supporting MagPro System solutions with MagPro and other MagVenture devices, an Isolation Transformer is required
- The Isolation Transformer is available in different models for supporting local mains power; 100V~, 120V~ and 230V~
- Outlet for MagPro Stimulator and four 230V auxiliary outlets for other devices such as Treatment Chair, Vacuum Pump Unit and Coil Cooler Unit
- Complies with the leakage current requirements according to IEC 60601-1-1

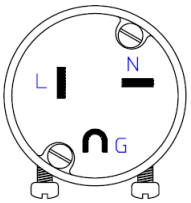
Mechanical Properties

Weight of unit	17kg
Height x width x depth	12 x 30 x 23 cm
Cable length primary	3m
Cable length for MagPro	1m
Encapsulation	Overall min 2 mm PC Non flammable Impact resistant

Electrical Properties

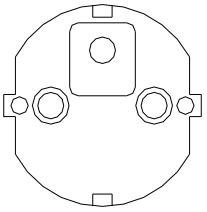
Mains Voltage Inlet	9016D003-: 120V~, 50/60Hz 9016D004-: 230V~, 50/60Hz 9016D005-: 100V~, 50/60Hz
Outlet for MagPro	Fixed cable , 230V~, 50/60Hz
Auxiliary outlets	4 pcs. IEC, 230V~, 50/60Hz, Total max 100VA
Ordering Numbers	9016D003- (120V~/230V~) 9016D004- (230V~/230V~) 9016D005- (100V~/230V~)

Mains inlet connector



100V and 120V version

Hospital Grade connector
Rating: 20A/125VAC
Connector type: NEMA 5-20P



230V version

Shuko connector
Rating: 10A/250VAC
Connector type: CEE 7/7

Cable for External Triggering with BNC

Technical Data

Connectors	9p D-sub plug (MagPro) 2 x BNC plug
Cable length	3 m
Ordering Number	9016E456-

Cable for External Triggering with D-sub

Technical Data

Connectors	9p D-sub plug (MagPro) 9p D-sub plug (Keypoint)
Cable length	3 m
Ordering Number	9016E455-

Cable for External Triggering MagPro to MagPro

- Cable for External Triggering from one MagPro stimulator to second one
- With this setup it is possible to have two magnetic coils connected and synchronized

Technical Data

Connectors	9p D-sub plug (MagPro master) 9p D-sub plug (MagPro slave)
Cable length	2 m
Ordering Number	9016E457-

Trolley for MagPro X/R-Models

- Trolley suitable for complete system with MagPro stimulator, Isolation Transformer, Coil Cooler unit and Vacuum Pump unit
- Prepared for mounting of Accessories for Trolley, Flexible Arm and Sham Noise Generator

Mechanical Properties

Weight	14kg
Height x width x depth	80 x 64 x 55cm
Ordering Number	9016B010-

Trolley for MagPro Compact

Mechanical Properties

Weight	11.7kg
Height x width x depth	80 x 56 x 55cm
Ordering Number	9016B011-

Extra Shelf for 9016B011-

Weight	1.4kg
Height x width x depth	3 x 50 x 45cm
Ordering Number	9031B304-

MagPro Remote Control

- The MagPro Remote Control provides the user with the possibility to operate the MagPro from a distance.
- With the MagPro Remote Control it is possible to enable MagPro, make single stimuli and to set the output power from a distance.
- The LED indicates whether the Stimulator is enabled or disabled.

Mechanical Properties

Dimensions (WxDxH)	117 x 79 x 19 mm
Weight	0,4 kg
Cable length	8 m *
Connector	6 pole Lemo type
Encapsulation material	ABS plastic with soft side grip for hand-held comfort
Housing protection	IP20
Ordering Number	9016C072-

* Other lengths can be specified.

Coil Converter (External Power Control)

- Interface unit to be used with MagPro Compact only.
- The unit is mounted on the front of MagPro Compact between the stimulator and the coil
- The external power control is for coils without controls in the coil handle. Instead, the control is carried out from the external power control.

Technical Data

Coils	All coils except C-100, C-B60, MMC-140-II and RT-120-II Note: F- and Cool-coils types are not recommended for MagPro Compact
Weight	140g
Ordering Number	9016E045-

Research Accessories

Treatment Chair with neck rest

- Wide and optimal comfort design.
- Possible to adjust height and tilting of seat, footrest and backrest for best possible comfort.
- Specially designed neck rest for use with vacuum pillow to ensure stable positioning of the patient's head during treatment.

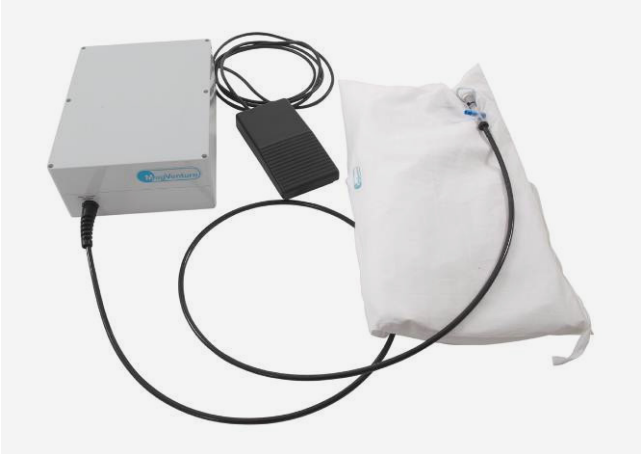
Electrical Properties

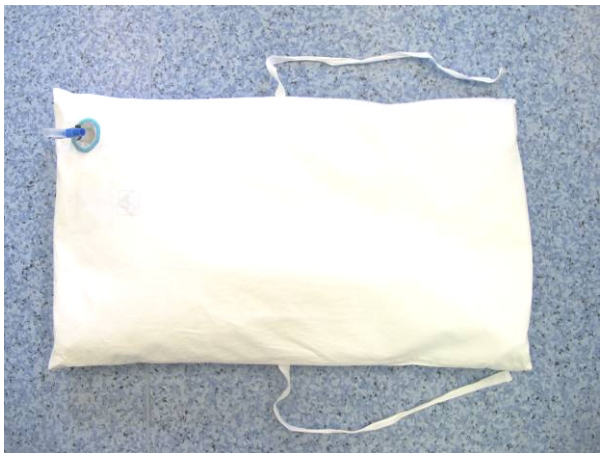
Mains inlet	230V AC
Motors	4 motors for height, tilting of seat, footrest and backrest adjustment

Mechanical Properties

Color	White PVC upholstery. Biocompatibility according to ISO 10993
Width	63 cm without armrest, 80 cm with armrest
Height	63-87 cm
Length	190-210 cm
Weight	85 kg / 187 lbs
Patient max. weight	130 kg / 286 lbs
Ordering Number	9016B008-

Vacuum Pump and Vacuum Pillow





- Vacuum Pump unit for vacuum pillows for stable support of the patient's head during magnetic stimulation.
- Easy control by foot switch.
- When air is evacuated by use of the Vacuum Pump unit, the pillow becomes stable in the chosen form and stiffness. When the air valve is released, allowing air into the pillow, the Vacuum Pillow regains its flexibility and is ready to be shaped again.
- The Vacuum Pillow consists of an airtight shell containing granules of polystyrene.
- Delivered with washable pillow cases.

Vacuum Pump Unit	
Mechanical Properties	
Weight of unit	4.5kg
Height x width x depth	12 x 30 x 23cm
Encapsulation	Overall minimum 2 mm PC Non flammable Impact resistant
Vacuum performance	<15 seconds for a 55 x 30cm Vacuum Pillow
Electrical Properties	
Main Voltage Inlet	230V~, 50/60Hz
Ordering Number	9016B012-
Vacuum Pillow	
Mechanical Properties	
Dimensions	55 x 30cm
Materials	PVC shell with granules of polystyrene
Ordering Number	9016B013-
Additional Pillow Cases	Set of 5pcs.
Ordering Number	9016B026-

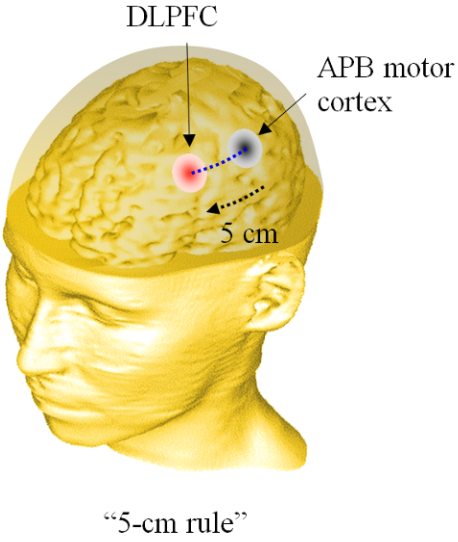
Textile Caps for repositioning

- With the caps it is easy to mark the position for a magnetic coil. This facilitates correct repositioning of the coil at future treatment sessions.
- Head caps in textile material.
- Available in different sizes; S, M, L and XL.
- For right repositioning of the cap on the patient head, the distance from the edge of cap to the nasion point can be used.
- Patient ID and distance to the edge of the cap can be written on the cap. One cap per patient.

Caps

Material	Textile with elastic band in the back of the neck	
Sizes	Small:	54-56 cm
	Medium:	56-58 cm
	Large:	58-60 cm
	Extra large:	60-62 cm
Ordering Numbers	Small:	9016B020- (10 pcs.)
	Medium:	9016B021- (10 pcs.)
	Large:	9016B022- (10 pcs.)
	Extra large:	9016B023- (10 pcs.)

Marking Accessories for Depression studies



"5-cm rule"

- When performing depression studies the treatment spot is normally based on the standard 5cm rule anterior to APB motor cortex. Other standards e.g. 6cm is supported too.
- With marking plate for C-B60 coil mounted, the DLPFC spot is easy located during the motor threshold determination. When APB motor cortex is located a curved line is drawn with a pen along the marking plate.
- The curved line from the marking has the shape of the Cool-B65 and Cool-B65 A/P coil and it will be easy to positioning the treatment coil on the scalp over DLPFC.
- With the marking plate mounted on the C-B60 coil the magnetic field is equal to the Cool-B65 and the Cool-B65 A/P coil's active side.

Marking accessories for Depression studies

Marking plate for C-B60 Coil	1.5mm plastic. Designed for 5 cm rule standard anterior to APB motor cortex. Optional 6 cm rule (on request)
Measurement pin	Scale in millimeters and centimeters
Marking pen	Textile pen
Ordering Number	9016B019-

Sham Noise Generator

- In order to hide the click noise when a magnetic stimulation pulse is fired, white noise is send into the ears of the patient.
- This sham noise pulse will hide the click noise from the coil for the patient; even at 100% stimulus intensity.
- For double blinded research experiments the MagPro operator should also receive the sham noise.
- It is possible to connect an iPod or similar to the Sham Noise Generator to make the patients feel comfortable with music during the treatment.
- Two headsets are included, each with 2m extension cables

Technical Data

Output sham noise amplitude	Max 100dB
Pulse width of the sham noise	25-200mS

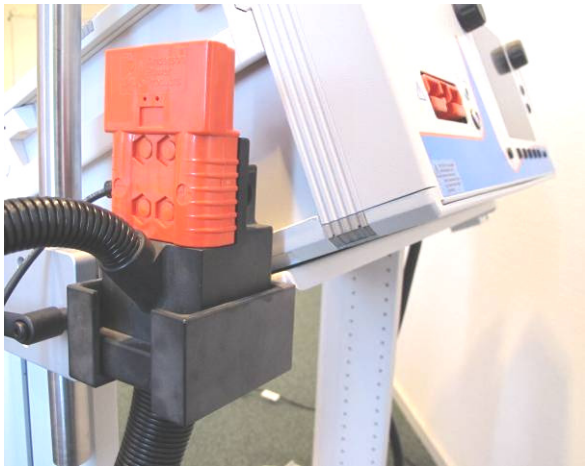
Mechanical Properties

Dimensions (WxDxH)	86 x 35 x 170 mm
Weight	0.4 kg
Cable length	2.5m
Connectors	Stereo MP3 input max 1V-rms 3.5 mm stereo jack Two Stereo audio outputs 3.5 mm stereo jack
Encapsulation material	ABS plastic
Housing protection	IP20 Tight

Ordering Numbers

Sham Noise Generator	9016C077-
Additional Headset	9016C078-

Accessories for Trolley



- When performing research or depression studies with rTMS often more than one coil is used during the process.
- This accessories kit includes:
  - holder for an extra standard coil, (e.g. C-B60 for motor threshold determination)
  - holder for coil connector of rTMS coil during motor threshold determination
  - holder for USB connectors from the rear panel of MagPro
- With this kit all components are easily placed on the trolley

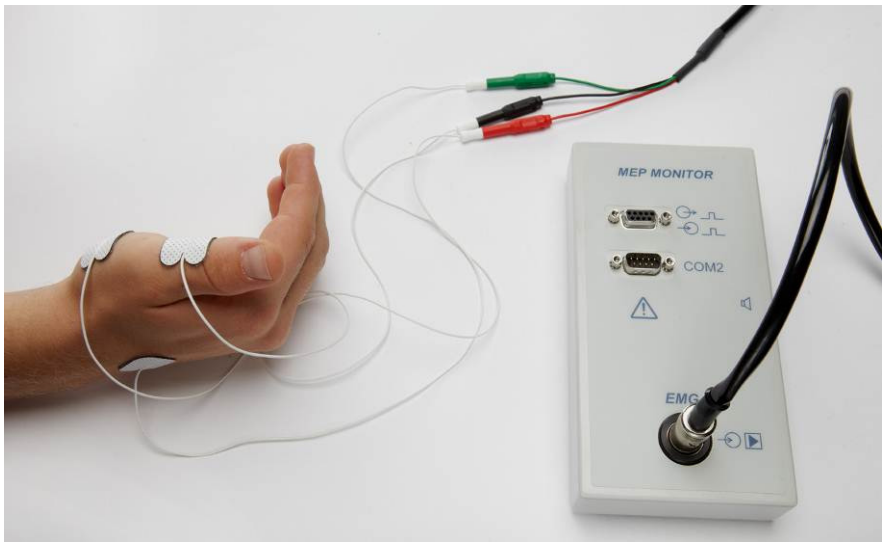
Accessories for Trolley	
Holder for standard coils	Mounted on the side of trolley
Holder for rTMS coil connector	Mounted on the side of trolley
Holder for USB connectors	Mounted on the side of trolley
Ordering Number	9016B028-

EMG Accessories

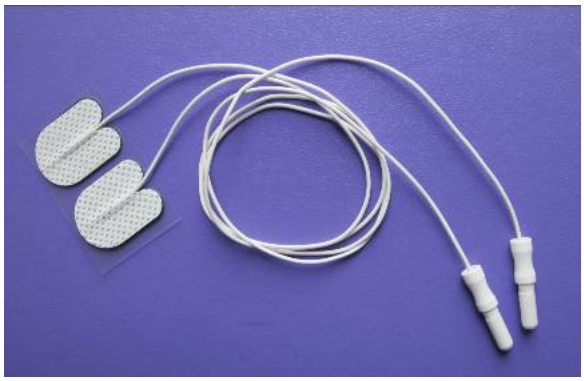
MEP Monitor, 1 channel EMG amplifier

- 1 channel EMG amplifier to be mounted on the back of the MagPro system.
- Measurement of Motor Evoked Potentials (MEP).
- Specially designed for determination and documentation of Motor Threshold.
- Includes MEP Electrode Cable and one pack of Surface Electrodes (12pcs.)

Technical Data	
Dimensions	(HxWxD:) 184 x 94 x 40mm
Weight	0.7kg
Number of Inputs	1 input protected against electro-static discharge. Balanced inputs. 1 pc. 5-pole DIN 240° connector for electrode cable
Sound	Output for external loudspeaker, 3.5mm jack.
Patient Safety	EMG channel galvanically isolated 1.5 kV RMS
Input Impedance	200 MΩ // 100 pF (balanced), >1000 MΩ // 50 pF (common mode)
Noise Level	Typical 0.6 µVrms at bandwidth 2 Hz to 20 kHz and shorted input
Common Mode Rejection Ratio	From surface electrode, through cable and amplifier: >55 dB. Direct: >100 dB
Isolation Mode Rejection Ratio	From input to power ground: >160 dB
Sensitivity Factors	100, 200, 500 µV/Div, 1, 2, 5, 10 mV/Div
Time Scales	1, 2, 5, 8, 10 ms/Div
Trigger Mode	Level, Autotrig on stim
Lower Frequency Limits (-3dB): DSP	1, 2, 5, 10, 20, 50, 100 Hz,
Upper Frequency Limits (-3dB): DSP	1, 2, 5, 10, 20 kHz,
Anti-Aliasing	20 kHz (-3 dB), 1st order
Sampling	100 ks/s, 16 bit
Ordering Number	9016C070-



Electrode cable and Electrodes for MEP Monitor



- Pack of Pre-gelled Surface electrodes (12pcs.) with 1.5mm touch-proof connector. Used for MEP recordings as Active, Reference and Ground electrode.

Surface Electrodes (pack of 12pcs.)

Electrode size	28 x 20 mm
Sensor material	Silver / silver chloride
Gel system	Solid gel
Sensor area	490 mm^2
Cable length	50 cm
Connector	1.5mm female TP
Ordering Number	9016S020-

- Shielded Electrode cable for MEP Monitor with 1.5mm touch-proof connectors for Active, Reference and Ground electrodes.

Shielded Electrode cable

Cable length	3 m
Connector for MEP Monitor	5-pole DIN 240°
Connector for electrodes	1.5mm male TP (3 pcs.)
Ordering Number	9016C081-

MagPro and accessories are manufactured by:

Tonica Elektronik A/S

Tonica Elektronik A/S
Lucernemarken 15
DK-3520 Farum
Denmark
Telephone: +45 44 99 84 44
Fax: +45 44 99 15 44
www.tonica.dk

Distributed by:

MagVenture

MagVenture A/S
Lucernemarken 15
DK-3520 Farum
Denmark
Telephone: +45 44 99 84 44
Fax: +45 44 39 04 49
www.magventure.com

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