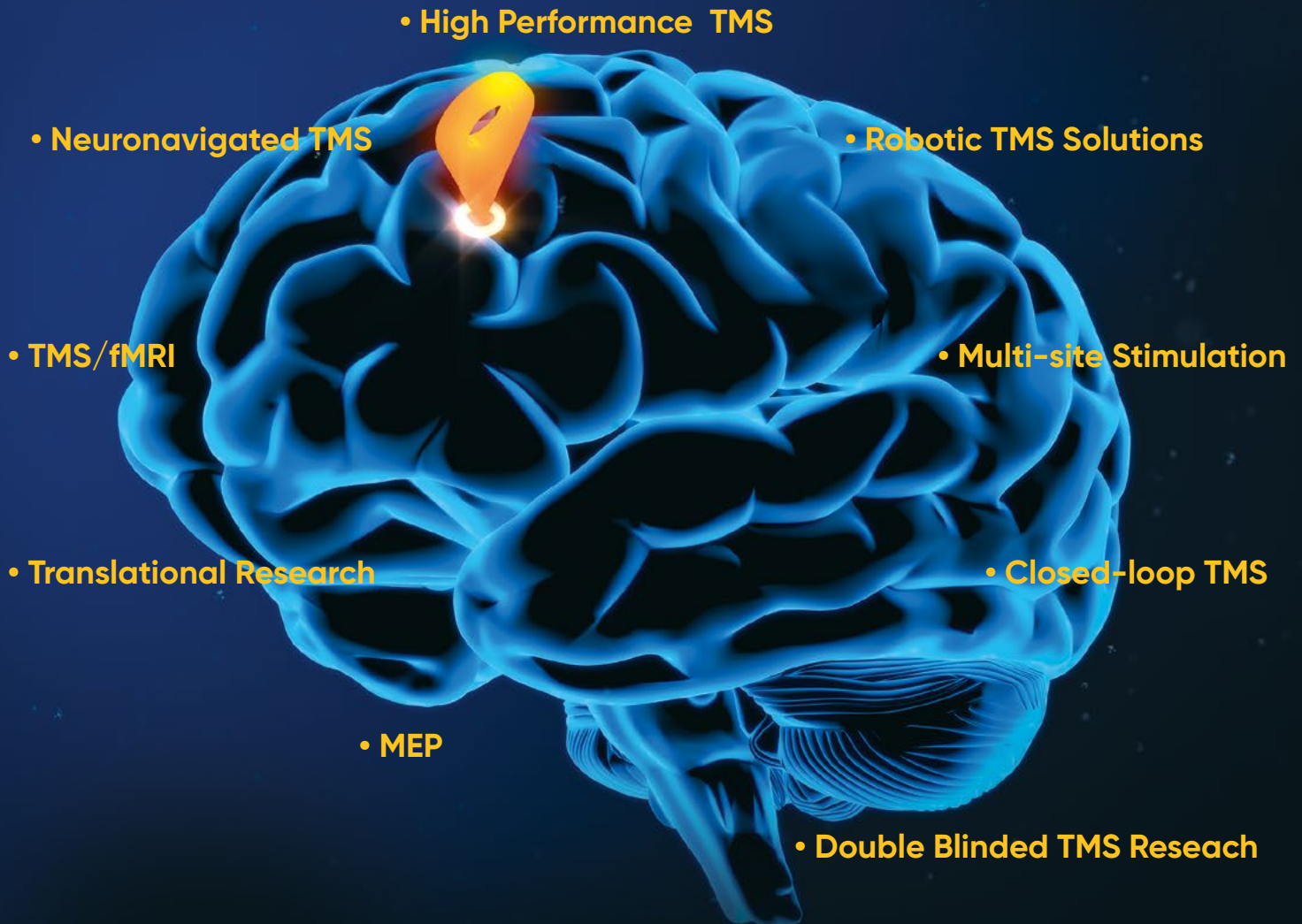


MagVenture TMS Research


Making impossible possible.



EXPLORE THE BRAIN

Powering research within TMS, MagVenture has been fueling for 30 years, pioneering and enabling research within TMS to develop next-generation therapeutic applications.

CONTENTS



The background of the page features a technical drawing of a TMS coil assembly. The drawing includes various dimensions and labels such as R2, 2,50, 17, 175, 15°, 62, 28,50, 22, 7, 10, 11, 12, 14, 15, 16, 17, 18, 19, 22, 50,32, 64, R12,50, R14,25, R16,75, R18,50, R52, 1,75, 2,50, and R2. The drawing shows a cross-section of a coil with a central opening and a surrounding structure. The dimensions are in millimeters.

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The world of research utilizing TMS is dynamic and fascinating. Thanks to the hard and groundbreaking work of researchers across the globe, TMS has progressed to the widespread adoption we see today.

MagVenture has been a pioneering force in TMS research since its inception 30 years ago, led by our chief engineer and CEO, Stig Wanding Andersen. From the very beginning, MagVenture has engaged in long-term collaborations with high-ranking neuroscience institutions worldwide, consistently being at the forefront of innovation and pushing the boundaries of TMS technology.

This catalog provides a glimpse into our advanced neuromodulation systems, from turnkey solutions for interleaved TMS/fMRI and double-blinded research systems to translational research, robotic, and neuronavigated solutions.

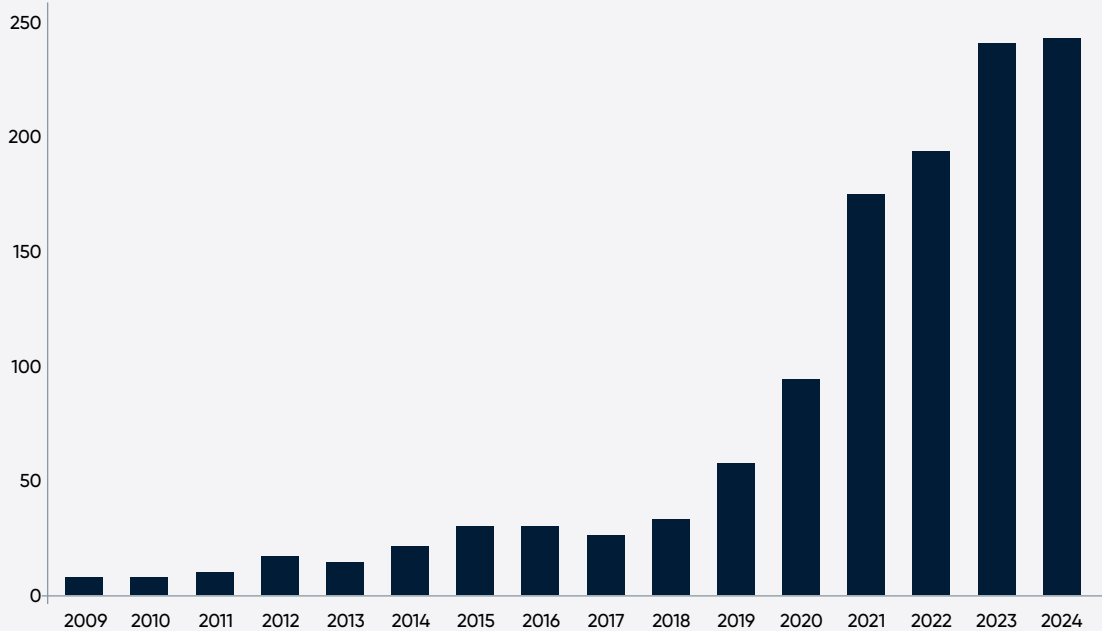
At MagVenture, we are passionate about delivering innovative solutions and rise to the challenge of solving even the most complex research needs. Our commitment helps researchers gain a deeper understanding of the human brain and develop future clinical applications that stand to benefit millions of patients.

That's why we say, "Making Impossible Possible".

MAGVENTURE IN RESEARCH

Number of research studies: 211 studies applying MV devices were published in 2024.

No. of publications

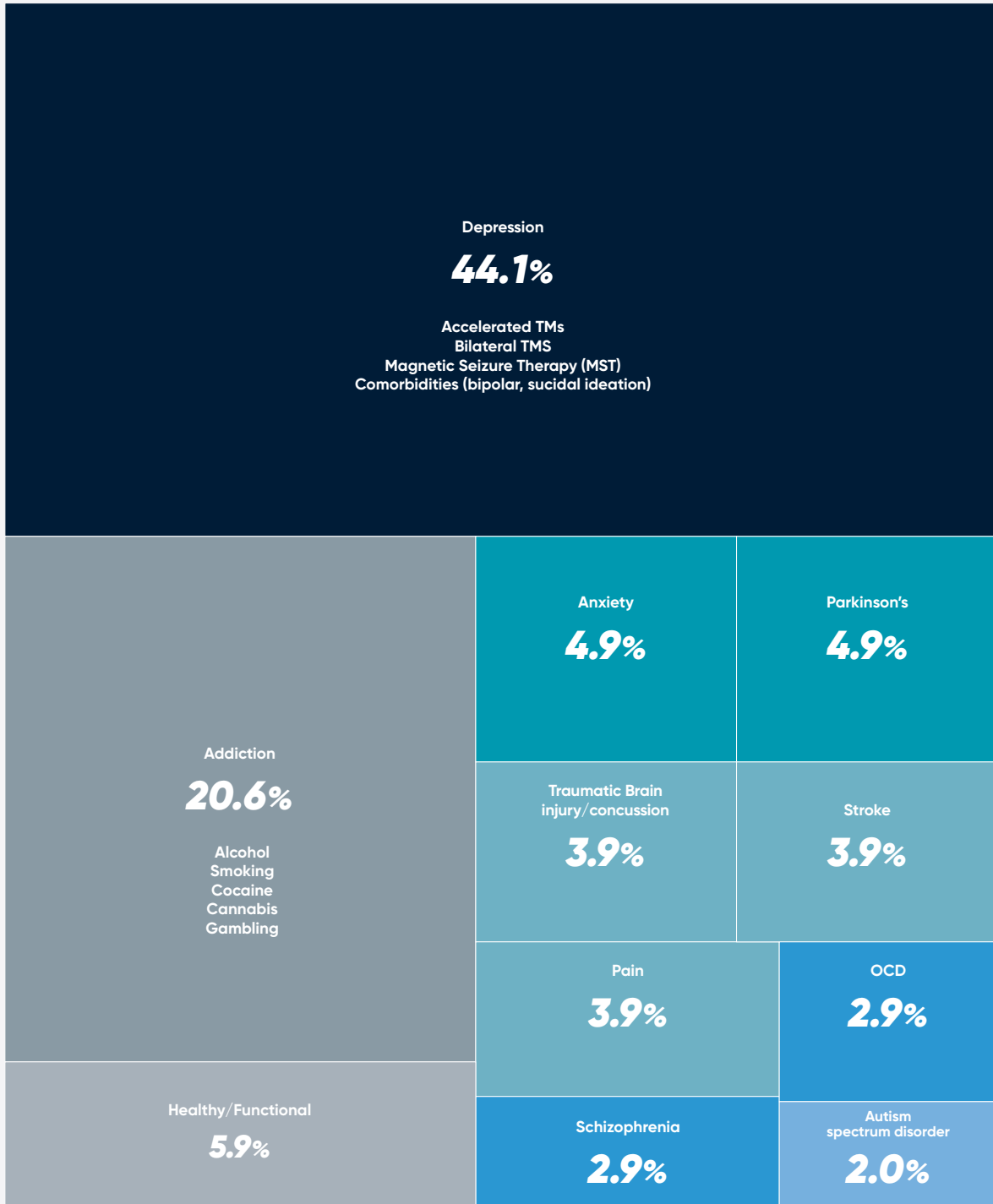


Sources: Literature databases, Clinical trial databases, Google Scholar, ScienceDirect, PubMed, Cochrane Library, ClinicalTrials.gov

Major research topics – studies with MagVenture devices – May 2024

MagVenture has, since the very beginning, engaged in long-term, close collaborations with numerous high-ranking neuroscience research institutions and facilities worldwide, allowing scientists to continuously challenge and push the limits of TMS.

MagVenture offers advanced neuromodulation systems for TMS research. From a turn-key solution for interleaved TMS-fMRI to Magnetic Seizure Therapy, or even TMS on rodents, MagVenture is capable of solving demanding needs from researchers around the world



Source: 102 of 108 active or planned studies registered in ClinicalTrials.gov.

MORE THAN 30 YEARS OF TMS INNOVATION

From the first MagPro stimulator for brain stimulation research to supplying a wide range of devices for use in the treatment of psychiatric disorders, MagVenture has been a pioneer in TMS technology for more than 30 years.

MagVenture introduces the **Static Cool concept**, allowing TMS researchers to run protocols without changing coils during sessions.



MagVenture launches a **complete TMS research system**, including a coil for double-blind placebo-controlled trials.

MagVenture's MRI-B91 coil makes it possible to perform **rTMS inside an MRI scanner**.



MagVenture is the first TMS provider to introduce a **three-minute theta burst protocol** that significantly decreases the length of TMS treatments.

MagVenture introduces the **Flow Arm**, which makes coil positioning easier and reduces strain on the operator.



In Europe, MagVenture is the first TMS provider to receive **approval for TMS treatment for addiction**.



1992



The first **MagPro stimulator** is launched by Tonica Elektronik A/S which later becomes MagVenture.

2001

2004



MagVenture introduces the **Dynamic Cool concept**, allowing TMS researchers to perform consecutive rTMS treatments without coil changes.

2010

MagVenture is the first TMS provider to receive **approval for its depression treatment system in Europe**.



2011

2013

2014



A new coil, the **Cool-40 Rat Coil**, is developed specifically for animal model research.

2018

MagVenture is now represented in **60+ countries** through local distributors. TMS systems now installed in more than 90 countries.

2020



MagVenture introduces **Atlas™ Neuro Navigation System** for precise, individualized coil positioning.

2021

2023

MagVenture receives the **clearance for Pain treatment** in the US.





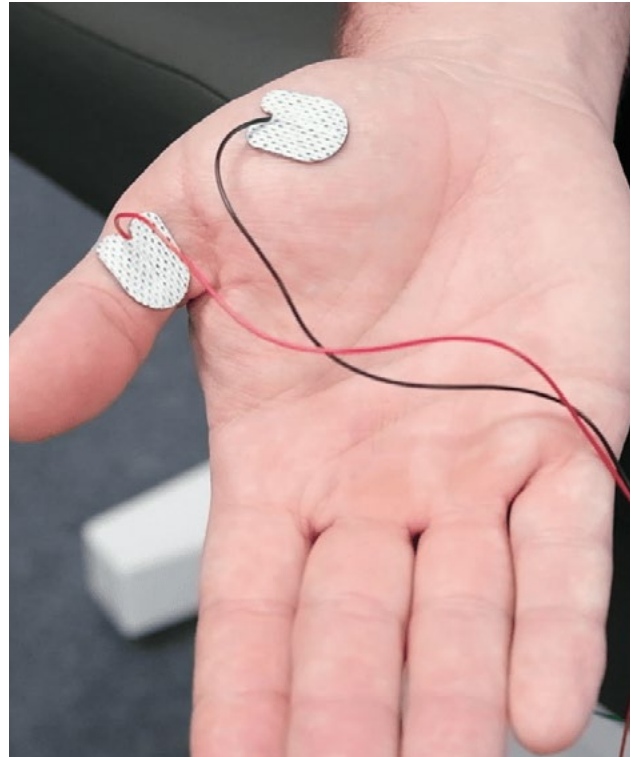
MEP – MOTOR EVOKED POTENTIALS

TMS is commonly used to measure Motor Evoked Potentials (MEPs), which are electrical signals generated by the muscles in response to a TMS pulse.

Some of the main uses of TMS for MEPs include:

- Assessing the integrity of the corticospinal tract, which is the pathway that connects the brain to the spinal cord and controls voluntary movement
- Evaluating the function of specific brain regions involved in motor control and coordination
- Studying the effects of various drugs and therapies on motor function
- Diagnosing and monitoring neurological disorders, such as stroke, multiple sclerosis, and amyotrophic lateral sclerosis (ALS)
- Planning and monitoring rehabilitation programs for individuals with motor impairments

TMS for MEPs is a valuable tool for both research and clinical applications, allowing for non-invasive assessment of motor function and identification of underlying neurological issues.

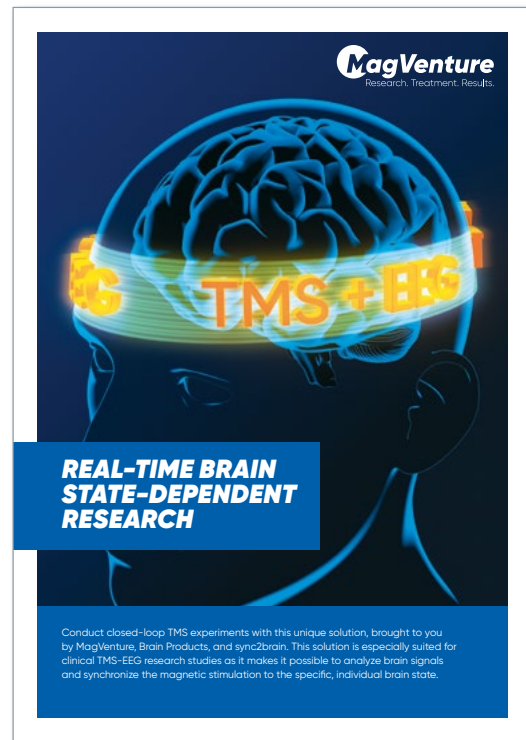


CLOSED-LOOP TMS

MagVenture, sync2brain, and Brain Products offer an advanced solution for clinical TMS researchers interested in conducting real-time brain state-dependent studies.

This solution not only allows you to combine TMS and EEG, but the data client also analyzes the brain's signals and synchronizes the stimulation to the individual brain state. It simultaneously detects high-precision neurophysiological signals from multiple channels without compromising data integrity. It reads in a real-time raw data stream from an EEG amplifier and when a specific EEG pattern is detected, the device indicates this through a standard output port. This enables a connected device to know within milliseconds of accuracy when a specific EEG pattern occurs.

- Personalized TMS paradigms investigation increases opportunities
- Targets fluctuating pathology-related states
- Features phase targeting and amplitude targeting
- Enables oscillation detection with customizable spatial and frequency band filters
- EEG/EMG data and markers timing access in Matlab, along with a precise TTL trigger pulse generator



[Click to learn more about Closed-loop](#)





STIMULATE MULTIPLE SITES AT THE SAME TIME

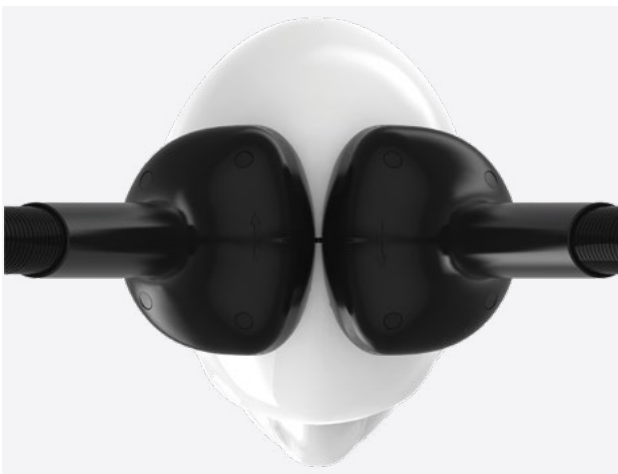
MagVenture offers a range of coils dedicated for research allowing for the stimulation of multiple sites within the brain at the same time

The small geometry of the B35 coil enables you to place multiple coils simultaneously on the head providing a focal, yet powerful stimulation. The B35 coil comes in different versions to better suit your specific needs.

- MC-B35
- Cool-B35
- Cool B35-HO (with handle turning upwards for easy coil placement)
- Cool-B35 RO (Robotic edition to be used with the Axilum robot)

Another option is the D-shaped Cool-D50 coil with the stimulation center being placed at the edge of the coil. This allows for alternating stimulation of two centers in the brain only 2-3 cm apart.

Smaller circular coils like the MMC-90 coil or MCF-75 coil are also available for less selective stimulation, but still allow for multiple coils to be placed close to one another.



Recommended research solutions for dual or multi-site stimulation

Stimulators:

R30 with MagOption or X100 with MagOption combined with a smaller stimulator such as the R20 or the Compact

Coils for repetitive stimulation:

Cooled coils:

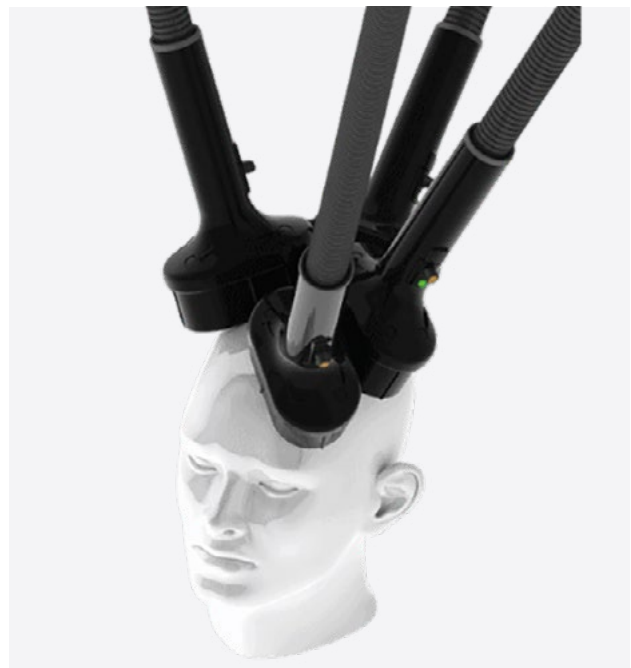
Cool-D50, Cool-B35, Cool-B35 HO, Cool-B35 RO

Coils for single pulse stimulation:

Static/non-cooled coils: MCF-75, MC-B35, MMC-90

Accessory:

High-Performance Coil Cooling System



[Click to learn more about Multi-site Stimulation](#)





DOUBLE-BLINDED TMS RESEARCH STUDIES

A comprehensive solution for double-blinded TMS studies

This includes the ability to perform true randomized, double-blind studies, with the ability to utilize the latest technologies such as neuronavigation and robotics to further enhance the reproducibility of your research.

- Coils with both active and sham sides (or with only a placebo side)
- Software for complete study control by study master or principal investigator
- Patient and operator codes to ensure true double-blinding
- Sham noise generation
- TMS masking via electric scalp stimulation



MagVenture offers a wide range of possibilities within double-blinded research, spanning from neuromodulation research for neuromuscular diseases to cognitive diseases. To find out more about how we can aid you in your specific field of interest, please contact MagVenture or your national MagVenture representative.



MagVenture's clinical research solution utilizing TMS is an advanced option for researchers interested in doing double-blinded research studies



**Click to learn more about
Clinical TMS Research**



COOL D-B80 A/P



MMC-140 A/P



COOL-B65 A/P



COOL-B70 A/P



Recommended solution for clinical research utilizing TMS

Stimulators:

R30, R30 MO, X100 or X100 MO depending on application

Active/Placebo coils:

Cool-B65 A/P, Cool-B70 A/P, Cool D-B80 A/P, MMC-140 A/P, Cool-B65 A/P CO.

Accessories:

Coil Cooler Unit or High-Performance Coil Cooling System, sham noise generator.

Software:

MagVenture Double-Blinded Research Studies software.

Need a single-blinded research solution?

If you only need a placebo coil for your research, MagVenture offers these three coil options: MC-P-B70, MCF-P-B70 and MCF-P-B65.

MagVenture offers a number of coils with both an active and a placebo side. Combined with advanced software, neither the operator nor the patient knows who receives real TMS treatment and who receives sham treatment.



NEURO NAVIGATION BY ELECTRO MAGNETIC TRACKING *(MagVenture Atlas™)*

MagVenture Atlas™ Neuro Navigation System is an accurate coil positioning system with optimized workflow for clinical application of transcranial magnetic stimulation (TMS) using electro magnetic (EM) tracking from NDI.

MagVenture Atlas™ uses a MRI data set for accurate coil positioning – targeting the exact treatment spot and making it easy to consistently reposition the coil for repeat treatments.

- User-friendly interface
- High precision and accuracy
- Optimized workflow for clinical routine work incl. easy registration, calibration and sensor placement that reduces the manual method with cap and marker pens
- No line-of-sight issues and a lower price point compared to optical tracking
- Allows for personalized, consistent and easily repeatable coil positioning
- Ability to use individualize MRI datasets, tissue maps (e.g., gray matter), fMRI activation and craniotopic facial markers
- Integrates seamlessly with MagVentures' TMS therapy systems and subsequent treatment coils* (*Current MagVenture coils are C-B60, MCF-B65, Cool-B65, C-B70, MCF-B70, Cool-B70, Cool D-B80).
- Increased patient involvement boosts confidence and trust
- Lightweight, compact and easy to set-up

[Click to learn more about
MagVenture Atlas](#)





NEURO NAVIGATION BY OPTICAL TRACKING *(Localite TMS Navigator)*

Plan stimulation areas, visualize the stimulation spot, and monitor and record the precise position of the research subject and coil with complete reproducibility. Our turnkey solution provides full integration with MagVenture stimulators, allowing for automatic and easy capture of all required information such as intensity, coil and stimulator type, MEPs, and temperature.

- Easily scalable: From MR-less system to MR-based system extendable with attractive software and hardware
- Possibility to track up to 4 coils at the same time
- More than 35 MagVenture coils ready to use in the software
- Import multiple morphological and functional data formats (Analyze, DICOM, MNI, NIfTI)
- EEG electrode localization and position export in flexible data format
- Export of stimulation parameters (e.g. EMG, amplitude, mapping results), along with the acquired stimulation location as functional image data
- Open documentation format: All stored data is written in XML format for easy post processing
- The MRI-compatible solution can easily be extended to a 2-in-1 solution for navigation outside as well as inside the MRI environment



Perform neuronavigated TMS inside the MRI scanner
(hardware tested and certified by an accredited laboratory).

Neuronavigated TMS options

Depending on your research needs, Localite offers a range of different neuronavigation systems that are precise, intuitive, and scalable.

Localite TMS Navigator

- **Classic Line:** Full-featured neuronavigation system, utilizing either a small or large format camera
- **TMS Navigator MR-compatible:** Navigated TMS inside the MR scanner
- **TMS Navigator Robotic Edition:** Automatic and safe coil positioning with Axilum TMS Robot or TMS Cobot

Recommended TMS research systems

- MagVenture stimulator (R30-X100-XP, depending on your needs)
- 35+ coil selections depending on the application, including active/placebo coils for clinical research studies
- Coil Cooler Unit or High-Performance Coil Cooling System depending on the application

Localite TMS Navigator is provided as a complete ready-to-use system including a broad range of tracking tools.



Neuronavigation with



LOCALITE
TMSNAVIGATOR



ROBOTIC TMS SOLUTIONS WITH AXILUM ROBOTICS

Movement controlled, robotically accurate TMS without compromising on safety or comfort

Head motion compensation monitors the coil's position, orientation, and contact to the head at all times and actively follows any possible head movement during TMS. It ensures a high level of repeatability between TMS sessions, is integrable with MagVenture stimulators and coils, and may be piloted by a neuronavigation system from Localite.



- Maintain position, orientation, and tilt of the TMS coil during the session
- Compensate for potential head motion during the TMS session
- Maintain contact between coil and head (integrated contact sensor)
- Plan fully-automated image-guided TMS sessions when piloted by a compatible neuronavigation system
- Plan and execute predefined stimulation paths when piloted by a compatible neuronavigation system
- Ensure identical setups in multi-center studies
- Reduce inter-operator variability
- Double-blind study support
- Reduce interactions between operator and patient during the session (no need for coil adjustment)

TMS Cobot is a CE marked medical device. TMS-Cobot is FDA cleared for the spatial positioning and orientation of the treatment coil of the MagVenture TMS Therapy® system.





Robotic TMS options

There are two different solutions available to meet your requirements. Whichever you choose depends on your needs.

TMS-Robot

High-end robot system for advanced brain research.

3 dedicated TMS coils: Cool-B65 A/P RO, Cool-B65 RO, Cool-B35 RO

- Optimized workspace with 7 axis arm and patented hemispherical architecture suitable for extended multisite stimulation
- Pilotable by compatible neuronavigation system

TMS-Cobot

Smaller system optimized for clinical use.

2 dedicated TMS coils: Cool-B65 A/P CO and Cool-B65 CO

- Collaborative robotic technology
- Pilotable by either Axilum Robotics' optical Tracking system (no MRI guidance) or compatible neuronavigation system (MRI guidance)
- Suitable for research when extended workspace is not required

Robotic TMS solutions with



Studying human brain functionality in real-time

With this complete turnkey TMS/fMRI research solution, it is possible to induce neural activity safely into targeted cortical regions, directly in the MRI scanner. Features of the MagVenture TMS/fMRI solution further include:

- Special TMS coils for use inside the MRI scanner
- Reduced RF noise filters and controllers
- Built-in dynamic leakage current reduction for minimizing artefacts
- Stimulator-controlled recharge delay and parameters
- High quality imaging
- Ability to add inside/inbore neuronavigation
- Full control via synchronization of TMS, scanner and peripheral equipment, incl. neuronavigation and functional data formats (Analyze, DICOM, MNI, IFTI)
- EEG electrode localization and position export in flexible data format
- Export of stimulation parameters (e.g. EMG, amplitude, mapping results) along with the acquired stimulation location as functional image data
- Open documentation format: All data stored is written in XML format for easy post processing
- The MRI compatible solution can easily be extended to a 2-in-1 solution for navigation outside the MRI environment

A dedicated 7-channel coil array (Siemens)

For high sensitivity TMS/fMRI, particularly at the stimulation site, a dedicated 7-channel, ultra-slim RF coil array may be used with both of MagVenture's MRI coils, further adding:

- Improved signal-to-noise ratio over a traditional birdcage MRI head coil
- Enhanced coil position flexibility



Recommended interleaved TMS/fMRI solution

Stimulator:

R30, R30 MO, X100, X100 MO or XP Orange Edition, depending on application

Coils:

MRI-B91 Air Cooled or MRI-B91 (non-cooled)
Two dedicated 7-channel coil arrays or a birdcage

Coil holder:

Dedicated coil holder for optimal positioning

Filter:

RF Filter with neuronavigation

Uninterrupted operation program

MagVenture may offer a special plan and program for re-provisioning of MRI coils providing a solution for uninterrupted system uptime at a fixed cost*.



I've seen it turn from a DIY project to a works-straight-out-of-the-box system by MagVenture. We see virtually no artefacts related to the MR compatible TMS coil. RF noise is very well dealt with by the filter provided. The setup is also a painless procedure, with MagVenture experts coming to help with all aspects of installation and first use. The TMS coil holder is a handy design, and we no longer have to design and manufacture our coil holders in house like we used to!

- Dr. Eva Feredoes, University of Reading, UK
The University of Padua

* May not be available in your region.
Please consult with your national MagVenture representative

Click to learn more about
TMS/fMRI





TRANSLATIONAL RESEARCH

Complete TMS solution for animal model research

MagVenture offers a range of coils that can be used within animal-based research, providing a unique opportunity to study the effects of TMS within a wide range of fields including behavioral, metabolic, (epi) genetics, molecular, and biochemical pathways. This research solution overcomes previously known challenges pertaining to focality, overheating, shape, and size. It provides complete replicability and reliability and, due to the small coil size, it will even fit inside a PET or SPECT imaging scanner.



The Cool-40 Rat Coil was originally developed with researchers at Antwerp University who were seeking to unravel the mechanism of action for TMS as well as test new paradigms.

Want to do research on larger animals?

MagVenture offers a range of slightly larger coils which are also suitable for translational research – for example the B35 or MCF-75. Contact us for more details.

Recommended solution for animal model research

Stimulators:

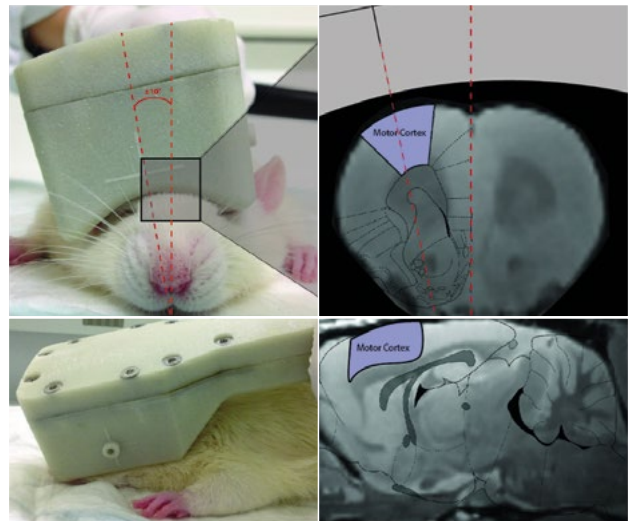
R30, R30 MO, X100 or X100 MO depending on application

Coil:

Cool-40 Rat Coil

Accessory:

High-Performance Coil Cooling System



More than 50 Cool-40 Rat Coils are used globally for high-end translational research. So far, 14 studies have been published.

[Click to learn more about Translational Research](#)



CAMBRIDGE ELECTRONIC DESIGN

CEd produces data acquisition and analysis system

The Signal software is specifically designed for evoked response experiments and offers extensive built-in features to support Transcranial Magnetic Stimulation (TMS). With the Signal software, it is possible to control the intensities and pulse directions of up to ten stimulators simultaneously.

Triggering is very accurately timed by CEd hardware and can respond to waveform threshold crossings or other 'Go' cues. The built-in state sequencing feature enables users to randomize stimulus presentation and timing (e.g., single and paired pulses) or follow a fixed protocol.

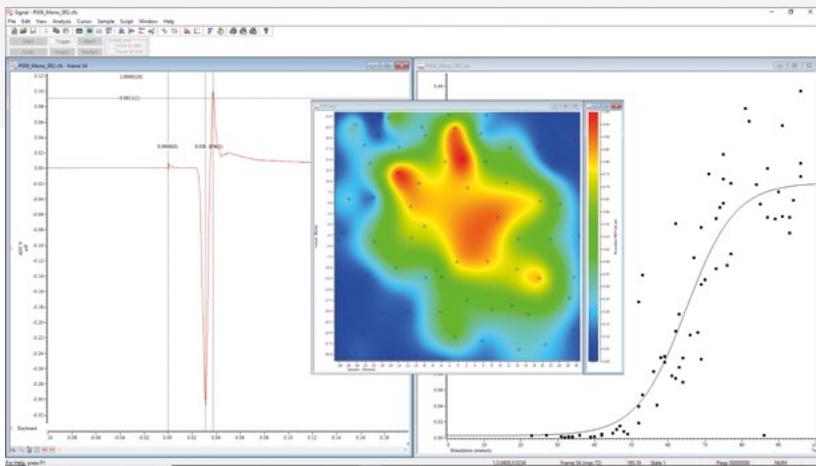
A key feature of Signal is its comprehensive scripting language, which provides full control over the software. Users can create custom analyses, automate batch processing, and implement conditional logic to determine whether to stimulate or not. The scripting

language also allows integration with MATLAB, enabling users to pass data for advanced processing and return actionable results directly into Signal. This versatility empowers users to tailor Signal to their specific experimental needs.

Signal also offers robust tools for on- and off-line analysis, including:

- Waveform feature detection
- Automatic stimulus response curves
- Curve fitting
- Waveform averaging.

Additionally, the software includes a fast, automatic estimation of the Resting Motor Threshold (RMT) using a PEST algorithm, with stimulator intensities set as a percentage of the subject's RMT or AMT. This ensures rapid and accurate threshold estimation, optimizing experimental efficiency.



CUSTOMIZED COIL SOLUTIONS - EXAMPLES

Covid-19 research

When the Covid-19 pandemic first took hold of Europe in early 2020, MagVenture was contacted by a researcher at a leading UK university who was looking for ways to shorten patients' time on ventilation and speed up post-recovery. The idea was to stimulate the phrenic nerve to keep the diaphragm active. Within a few weeks, MagVenture had developed the first prototype of a brand new coil: the Twin B46.

The coil has now found its way to Brazil where University of São Paulo is testing this new solution as part of a non-invasive magnetic stimulation research on respiratory patients, including Covid-19.



[Click to learn more about Twin B46 coil](#)



Stimulate two brain regions at close proximity

Based on input from researchers, MagVenture developed an asymmetrical coil – the Cool-D50 – enabling alternating stimulation of two centers in the brain only 2-3 cm apart.



Responding to researchers' needs and requests has been a vital part of the MagVenture DNA. For over 3 decades, this has resulted in various innovative solutions, spanning new coils to high-tech stimulators and high-performance cooling systems for highly demanding protocols



The Cooled clover-leaf coil allows activation of complex brain structures in one procedure, multiple stimulation spots, large field, and alternated stimulation current direction, all in one coil. Creating large field stimulation by alternating coil pair activation. Allowing direct activation of gyri in all direction, due to the 90-degree field flipping.

STIMULATOR OVERVIEW

Whether you want to stimulate higher-lying targets such as DLPFC or to reach deeper-lying structures, MagVenture provides you with a large number of possibilities. All TMS coils come in various shapes and sizes and with different attributes such as cooling, power control, and triggering in the handle.

User-defined protocols, storage and retrieval of protocols, automatic sequence setup, transferable data, advanced in/out triggers for EEG, EMG, and EP

equipment are among the many features to ease your workflow, and ensure accuracy and consistency in your research.

With a wide range of MagPro stimulators to choose from, all of which can be used in combination with neuronavigation and/or robotic TMS, MagVenture offers a unique diversity in stimulators.



MagPro Model		XP Orange	X100 MO	X100	R30 MO	R30	R20 Family	Compact
Maximum Repetition Rate	250 pps	•	• ⁶	• ⁶				
	100 pps		•	•			• ⁴	
	80 pps					• ¹		
	60 pps					• ²		
	30 pps				•	•		
	20 pps						•	
	5 pps							•
Pulse Mode	Power Mode		•					
	Dual/Twin		•		•			
Waveform	Standard	•	•	•	•	•	•	•
	Biphasic	•	•	•	•	•	•	•
	Theta Burst (Biphasic Burst)	•	•	•		• ³	• ⁵	
	Monophasic		•	•	•			
	Half-Sine		•					
Current Direction	Normal and Reverse		•	•				
Sham Noise	(Add-on)	•	•	•	•	•		

MRI compatible

Can be used with the MagVenture double-blind research software

Translational research compatible

- 1 With 80 pps option
- 2 With 60 pps option
- 3 With TBS option
- 4 R20+ or R20+ Express Solution
- 5 R20+ Express Solution
- 6 With 250 pps option

COIL OVERVIEW

With numerous coils to choose from, whether you want to stimulate higher-lying targets such as DLPFC or reach deeper-lying structures, MagVenture provides you with a large number of possibilities. All TMS coils come in various shapes and sizes and with different attributes such as cooling, power control, and triggering in the handle.

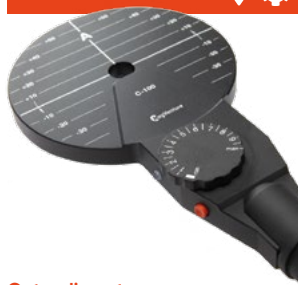
MagVenture's efficient liquid cooling allows the user to run even the most aggressive protocols, and a higher number of stimuli without the need for coil change. Depending on the needed number of pulses and intensity, MagVenture can offer various cooling solutions ranging from static cooling to liquid cooling and even a high-performance cooling option for extreme protocols and/or small coils.

NOTE: All coil magnetic field data listed in this publication is for comparison purpose only. Some of the data is simulated and some is measured. For more information on a specific coil please contact us.

Circular coils

The circular coils stimulate larger areas. The stimulation is strongest between the outer edge and the center of the coil. Circular coils come in various sizes and shapes, including elliptic.

C-100



Outer diameter
 ø123 mm / 4.84 in.
Penetration depth (70 V/m)
 39.6 mm / 1.56 in.
Magnetic field
 Gradient at 20 mm: 21 kT/s

MC-125



Outer diameter
 ø130 mm / 5.12 in.
Penetration depth (70 V/m)
 38.5 mm / 1.52 in.
Magnetic field
 Gradient at 20 mm: 18 kT/s

MMC-90



Outer diameter
 ø95 x 22 mm / 3.74 x 0.87 in.
Angle Concave
Penetration depth (70 V/m)
 34 mm / 1.34 in.
Magnetic field
 Gradient at 20 mm:
 Concave side 24 kT/s.
 Convex side 14 kT/s

MMC-140



Outer diameter
 ø143 x 14.5mm / 5.63 x 0.57 in.
Angle Concave
Penetration depth (70 V/m)
 43.4 mm / 1.70 in.
Magnetic field
 Gradient at 20 mm: 21 kT/s

MMC-140 II



Outer diameter
 ø143 x 17 mm / 5.63 x 0.67 in.
Angle Concave
Penetration depth (70 V/m)
 44.3 mm / 1.74 in.
Magnetic field
 Gradient at 20 mm: 20 kT/s

MCF-140



Outer dimensions
 169 mm / 6.65 in.
Magnetic field
 Gradient at 20 mm: 20kT/s

MCF-75



Outer diameter
 ø88 mm / 3.50 in.
Penetration depth (70 V/m)
 26.7 mm / 1.05 in.
Magnetic field
 Gradient at 20 mm: 15 kT/s

MCF-125



Outer diameter
 ø140 mm / 5.51 in.
Penetration depth (70 V/m)
 39.2 mm / 1.54 in.
Magnetic field
 Gradient at 20 mm: 16 kT/s

COOL-125



Outer diameter
 ø140 mm / 5.51 in.
Penetration depth (70 V/m)
 37.7 mm / 1.48 in.
Magnetic field
 Gradient at 20 mm: 16 kT/s

RT-120



Outer diameter
 ø90 x 175 x 26 mm /
 3.54 x 6.89 x 1.02 in.
Penetration depth (70 V/m)
 35.2 mm
Magnetic field
 Gradient at 20 mm: 15 kT/s

RT-120 II



Outer diameter
 ø90 x 200 x 26 mm /
 3.54 x 7.87 x 1.02 in.
Penetration depth (70 V/m)
 35.2 mm
Magnetic field
 Gradient at 20 mm: 15 kT/s

COOL-D50  



Outer dimensions
111 x 94 mm / 4.4 x 3.7 in.
Penetration depth (70 V/m)
30.7 mm / 1.21 in.
Magnetic field
Gradient at 20 mm: 16 kT/s

Butterfly coils

The Butterfly coils are used for focal stimulation, with the windings placed side-by-side providing the strongest stimulation under its center.

C-B60  



Outer dimensions
165 x 85 mm / 6.5 x 3.35 in.
Penetration depth (70 V/m)
31.5 mm / 1.24 in.
Magnetic field
Gradient at 20 mm: 9 kT/s

C-B70  



Outer dimensions
170 x 113 mm / 6.69 x 4.45 in.
Angle 150°
Penetration depth (70 V/m)
37.3 mm / 1.47 in.
Magnetic field
Gradient at 20 mm: 15 kT/s

D-B80 



Outer dimensions
196 x 106 mm / 7.7 x 4.17 in.
Angle 120°
Penetration depth (70 V/m)
42.7 mm / 1.68 in.
Magnetic field
Gradient at 20 mm: 12 kT/s

D-B110



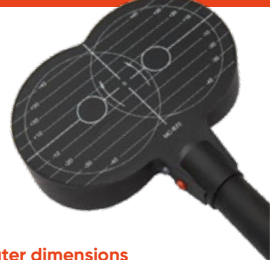
Outer diameter
2 x ø126 mm / 2 x 4.96 in.
Angle 95°
Magnetic field
Gradient at 20 mm: 11 kT/s
Gradient at 40 mm: 8 kT/s

MC-B35 



Outer dimensions
103 x 55 mm / 4.05 x 2.16 in.
Penetration depth (70 V/m)
27.5 mm / 1.08 in.
Magnetic field
Gradient at 20 mm: 10 kT/s

MC-B70 



Outer dimensions
169 x 112 mm / 6.65 x 4.40 in.
Angle 150°
Penetration depth (70 V/m)
37.3 mm / 1.47 in.
Magnetic field
Gradient at 20 mm: 15 kT/s

MC-B65 HO 



Outer dimensions
165 x 85 mm / 6.5 x 3.35 in.
Penetration depth (70 V/m)
31.5 mm / 1.29 in.
Magnetic field
Gradient at 20 mm: 9 kT/s

MCF-B65  



Outer dimensions
172 x 92 mm / 6.9 x 3.7 in.
Penetration depth (70 V/m)
31.5 mm / 1.24 in.
Magnetic field
Gradient at 20 mm: 9 kT/s

MCF-B70  



Outer dimensions
180 x 116 mm / 7.1 x 4.6 in.
Angle 150°
Penetration depth (70 V/m)
34.0 mm / 1.34 in.
Magnetic field
Gradient at 20 mm: 12 kT/s

COOL-B35



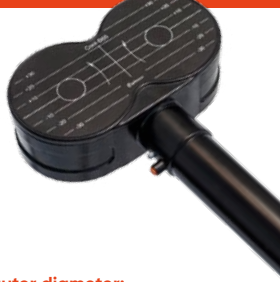
Outer dimensions
113 x 65 mm / 4.4 x 2.6 in.
Penetration depth (70 V/m)
23.1 mm / 0.9 in.
Magnetic field
Gradient at 20 mm: 7 kT/s

COOL-B35 HO  



Outer dimensions
113 x 65 mm / 4.4 x 2.6 in.
Penetration depth (70 V/m)
23.1 mm / 0.9 in.
Magnetic field
Gradient at 20 mm: 7 kT/s

COOL-B65  



Outer diameter:
172 x 92 mm / 6.8 x 3.6 in.
Penetration depth (70 V/m):
31.5 mm / 1.24 in.
Magnetic field:
Gradient at 20 mm: 9 kT/s

COOL D-B80  



Outer dimensions
2 x ø110 mm / 2 x ø4.33 in.
Angle 120°
Penetration depth (70 V/m)
41.8 mm / 1.65 in.
Magnetic field
Gradient at 20 mm: 11 kT/s

COOL-B70  



Outer dimensions
180 x 116 mm / 7.1 x 4.6 in.
Penetration depth (70 V/m)
34.0 mm / 1.34 in.
Magnetic field
Gradient at 20 mm: 12 kT/s

Clinical Research

A number of coils have been specifically developed for clinical research. Some are for single-blinded placebo studies (P), others for true double-blinded research studies with both an active and a placebo side (A/P).

The range of active/placebo coils delivers a magnetic field on the placebo side that is <5% of the active side.

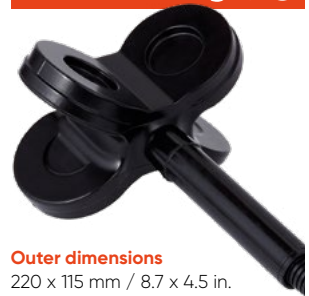
The placebo coils have a magnetic field reduction of more than 80% of the field of the correspondent coil.

COOL-B70 A/P



Outer dimensions
173 x 116 mm / 6.8 x 4.6 in.
Angle 150°
Penetration depth (70 V/m) 34.0 mm / 1.34 in. (active side)
Magnetic field (active side)
Gradient at 20 mm: 12 kT/s

COOL D-B80 A/P



Outer dimensions
220 x 115 mm / 8.7 x 4.5 in.
Angle 120°
Penetration depth (70 V/m) 41.8 mm / 1.65 in. (active side)
Magnetic field (active side)
Gradient at 20 mm: 12 kT/s

MMC-140 A/P



Outer diameter
ø145 mm / 5.7 in
Angle Concave
Penetration depth (70 V/m) 44.3 mm / 1.74 in. (Active side)
Magnetic field (active side)
Gradient at 20 mm: 9 kT/s

COOL-B65 A/P



Outer dimensions
172 x 92 mm / 6.8 x 3.6 in.
Penetration depth (70 V/m) 31.5 mm / 1.24 in. (active side)
Magnetic field (active side)
Gradient at 20 mm: 9 kT/s

MCF-P-B65



Outer dimensions
174 x 94 mm / 6.8 x 3.7 in.

MCF-P-B70



Outer dimensions
180 x 116 x 45 mm
Angle 150°

Robotic TMS

A selection of our coils also come in a robotic/cobotic edition.

COOL-B65 RO/CO



Outer dimensions
172 x 92 mm / 6.8 x 3.6 in.
Penetration depth (70 V/m) 31.5 mm / 1.24 in.
Magnetic field
Gradient at 20 mm: 9 kT/s

COOL-B35 RO



Outer dimensions
113 x 65 mm / 4.4 x 2.6 in.
Penetration depth (70 V/m) 23.1 mm / 0.9 in.
Magnetic field
Gradient at 20 mm: 7 kT/s

COOL-B65 A/P RO



Outer dimensions
172 x 92 mm / 6.8 x 3.6 in.
Penetration depth (70 V/m) 31.5 mm / 1.24 in. (active side)
Magnetic field (active side)
Gradient at 20 mm: 9 kT/s

COOL-B65 A/P CO



Outer dimensions
172 x 92 mm / 6.8 x 3.6 in.
Penetration depth (70 V/m) 31.5 mm / 1.24 in. (active side)
Magnetic field (active side)
Gradient at 20 mm: 9 kT/s

COOL-B70 CO



Outer diameter:
180x116 mm/7.1x4.6 in.
Penetration depth (70 V/m): 34.0 mm / 1.34 in.
Magnetic field:
Gradient at 20 mm: 12 kT/s



Compatible with neuronavigation



Intensity wheel



Static cooling



Active cooling



Placebo

MRI

Coils for interleaved TMS/fMRI when stimulating inside an MR scanner

MRI-B91

**Outer dimensions**

175 x 142 x 30 mm /
6.89 x 5.59 x 1.18 in.

Penetration depth (70 V/m)

31.5 mm / 1.22 in.

Magnetic field

Gradient at 20 mm: 8 kT/s

MRI-B91 Air Cooled

**Outer dimensions**

175 x 142 x 30 mm /
6.89 x 5.59 x 1.18 in.

Penetration depth (70 V/m)

31.1 mm / 1.22 in.

Magnetic field

Gradient at 20 mm: 8 kT/s

7-channel MR coil

Coils for interleaved TMS/fMRI when stimulating inside an MRI scanner

Type

fMRI A-type

fMRI B-type

(for imaging only)

7-channel MR coil array for concurrent TMS/fMRI



A radio frequency coil for magnetic resonance investigations of the human brain in vivo. Intended for use with a type 3T MRI Scanner and in combination with MRI-B91 or MRI-B91 Air Cooled coils.

For two MR coil arrays use two TIM adapters (order at Siemens)

Translational Research

A coil for animal model research.

COOL-40 RAT COIL

**Outer dimensions**

52 x 54 mm / 2 x 2.1 in.

Penetration depth (70 V/m)

10.2 mm / 0.4 in.

Magnetic field

Gradient at 20 mm: 9 kT/s

Note: Not for human use.



Compatible with neuronavigation



Active cooling

TAILORED RESEARCH SOLUTIONS

Your idea today

– a new neuromodulation tool for your lab tomorrow?

Responding to researchers' ideas and requests has been a vital part of the MagVenture DNA for three decades. This has resulted in numerous "first mover" solutions, spanning from brand new coils, theta burst stimulation, and extraordinarily efficient cooling systems for highly demanding protocols.

Contact us to hear more about the possibilities for bringing your idea to life.

Collaborating with MagVenture Application Experts

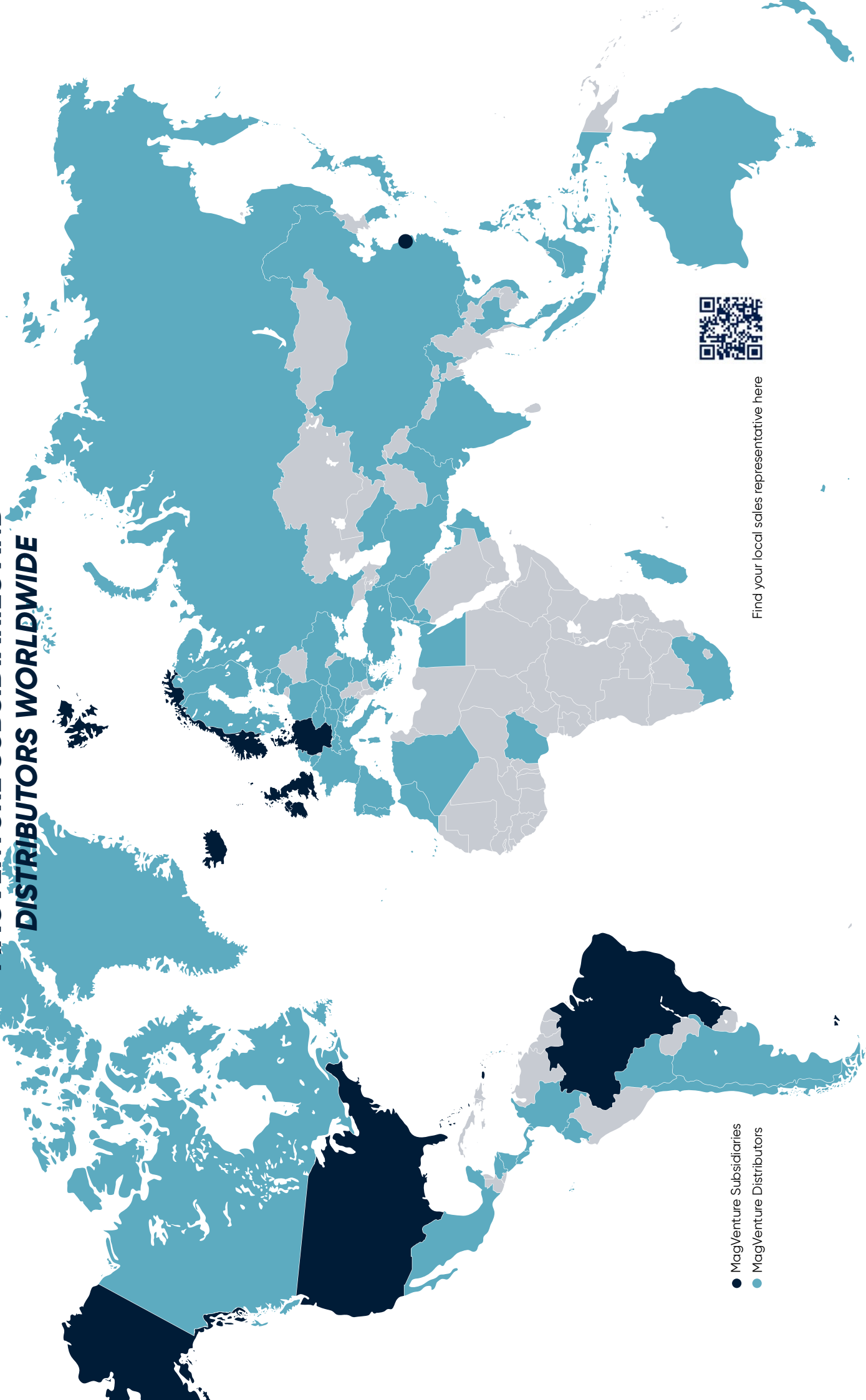
At MagVenture, we believe that the true power of our research solutions lies in more than just technology—it's in the constant dialogue we maintain with researchers and clinicians worldwide.

Our TMS experts work closely with you, providing insights and guidance to ensure you get the most out of our advanced technology.

This ongoing collaboration enables researchers to unlock the full potential of technology, pushing the boundaries and Making the Impossible Possible. Whether it's optimizing protocols, designing innovative studies, or troubleshooting complex challenges, our specialists are here to help you.

Reach out to us through application@magventure.com and discover how we can better support your research project.

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ABOUT MAGVENTURE®

MagVenture is a Danish medical device manufacturer of magnetic stimulation solutions. MagVenture develops and markets advanced medical equipment based on the use of pulsating magnetic fields used for clinical examination as well as for research within psychiatry, neurophysiology, neurology, cognitive neuroscience, and rehabilitation. With 10 different magnetic stimulators and over 40 different coils, MagVenture can provide a solution to most needs within neuromodulation research.

MagVenture's mission is to be the most dynamic and innovative supplier of transcranial magnetic stimulation solutions. Many "first mover" features and improvements have been developed over the years in response to ideas and requests from its customers. MagVenture's stimulators are sold on the world market through direct sales subsidiaries in the USA, Germany, the UK, Brazil and China and through a global network of distributors in Europe, Asia, the Middle East, and the Americas

WWW.MAGVENTURE.COM

This brochure describes a wide range of possibilities within TMS research. Please note that the stimulators, features, coils, and accessories described here may not all be available and/or approved by the regulatory authorities in your country/region. For more information concerning approval status in your country, the possibility to import a medical device for investigational use, research use or special license in your country, please consult with your local MagVenture distributor or subsidiary. The use of a medical device other than a cleared/approved use by your local health authority is considered experimental.

All MagVenture products are developed and produced as medical devices according with the standard ISO 13485:2016 and in accordance with country regulatory requirements. Delivery times may vary.