

## Application Story

### NeuroStar Transcranial Magnetic Stimulation Therapy – New Solutions in the Treatment of Depression



*NeuroStar System*

**M**ajor depression is a serious medical disorder affecting more than 14 million American adults every year. Often a debilitating condition, depression results in a persistent state of sadness, which interferes with an individual's thoughts, behavior, mood and physical health.

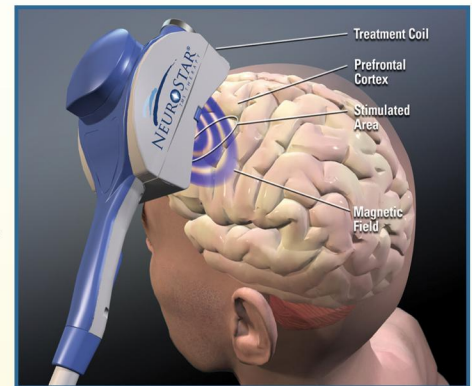
Neuronetics Corporation of Malvern, Pennsylvania has pioneered and refined the NeuroStar TMS (Transcranial Magnetic Stimulation) Therapy System®. TMS is a non-invasive, non-systemic treatment for depression that applies a highly focused, pulsed magnetic field to stimulate functions in targeted brain regions. NeuroStar TMS Therapy® is a safe and effective outpatient procedure, performed in a physician's office. Each treatment lasts about 40 minutes daily for four to six weeks. There are none of the physical effects that are commonplace with powerful drug treatment and the patient can immediately return to normal daily activities.

Engineers developing the TMS treatment suite needed a reliable means of holding the treatment coil in place during therapy sessions and turned to Ogura Industrial Corporation for suggestions.

Design considerations included quiet operation given the medical treatment environment, simplicity of operation and consistent performance and reliability.

The magnetic treatment coil can be positioned in different axis of motion to accommodate the different physical characteristics of individual patients. Once the patient is comfortably reclined in

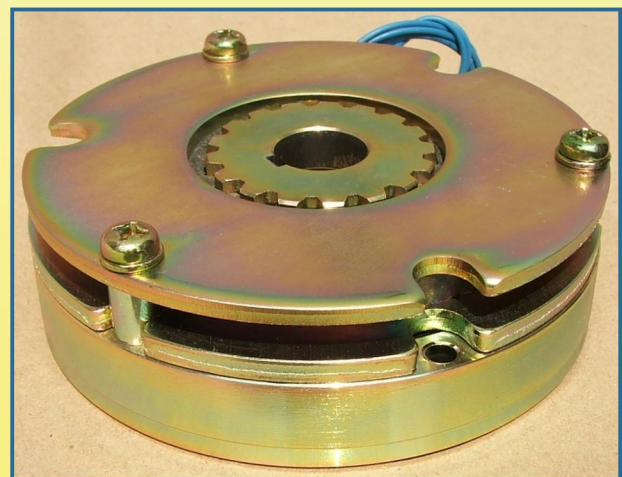
the treatment chair, the treatment coil is positioned so that magnetic pulses are focused on specific regions of the brain. It is critical that once the coil is positioned and therapy commences, no slipping or wandering of focus location occurs. The magnetic pulses generated by the treatment coil must remain on the targeted area of the brain.



*NeuroStar Coil*

Another important consideration: since the RNB is a Power-Off brake, there is no electrical signal to interfere with the TMS System during use. Power is only applied to release the brake when the treatment coil is adjusted to the individual patient. When power is removed, springs apply the friction surfaces locking the mast and gantry arm in place until the therapy session is completed.

Ogura has many different clutch and brake applications in the medical industry. Improvements, such as the Ogura "Silent" armature has helped to improve the patient's experience while using X-ray, MRI and other equipment. ●



*Ogura RNB Brake*