Closing operation: Electrical closing command starts the discharge of pre-charged capacitor bank of control module into the actuator coil. When the contact gap is over, movable contact of VI stops, the armature gap” compressing the contact pressure spring and opening spring that store the energy for the future opening operation. At the end of the compression gap, the armature latches magnetically to the yoke. In closing of magnetic system, the coil current further increases to produce magnetic field to saturate the magnets and provide the power of the permanent magnets enough to hold the armature in the closed position after the coil current has been cut off by a control module.

Opening operation: To open the breaker, the current of opposite polarity, derived from the opening capacitor in the control module, passes through the coil for few
milliseconds. This current partially demagnetizes the magnets and reduces the magnetic holding force in the armature. When the force of charged opening and contact pressure springs exceeds the magnetic force, the armature releases from yoke, rapidly tearing off the contact of VI. This film shows Tavrida company magnetics acuature operating mechanism.