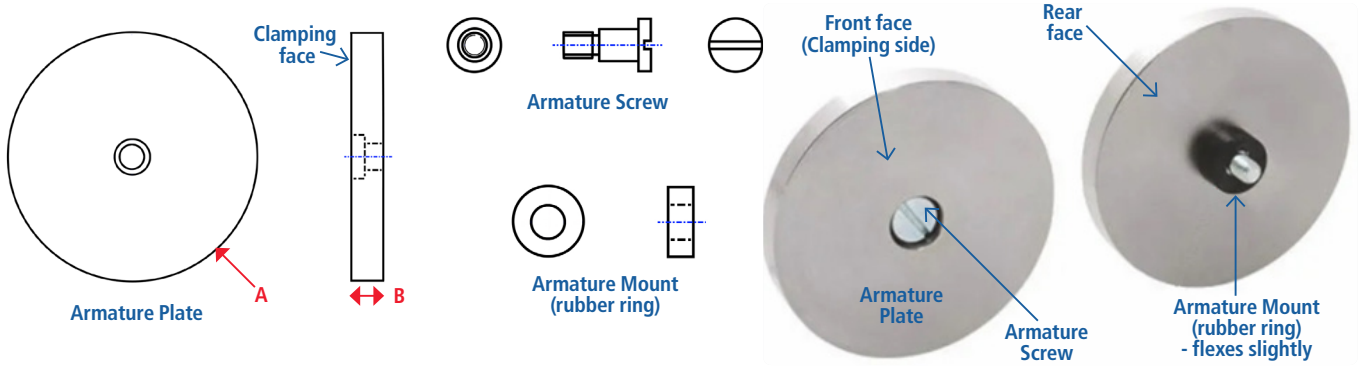
Armature Plates

- The armature plates fit both Energise-to-Hold and Energise-to-Release magnets. Supplied with armature screw and rubber ring armature mount.
- The armature plate is nickel plated to protect against any corrosion risks.
- Select an Armature Plate of same or bigger diameter than the Energise-to-Hold or Energise-to-Release magnet you have chosen.
- Rubber ring supplied allows for a small degree of flex in the armature plate movement to maximise direct contact to the Energise-to-Hold or Energise-to-Release magnet clamping face to enable maximum possible pull forces to be achieved. Air gaps and misalignment will reduce the pull force. The armature screw head sits under the contact face to prevent interference with the magnetic face so will not mechanically interfere with the Energise-to-Hold or Energise-to-Release magnetic force.

Product Number	Diameter (A) mm	Height (B) mm	Armature Screw supplied	To Suit ElectroMagnet Diameter mm	Weight g	Recommended to be used with ElectroMagnet Product Number	Recommended to be used with Electro-Permanent Magnet Product Number
M52171/25ARM	25	3	M3	20 / 25	15	M52180/12VDC, M52180/24VDC, M52172/12VDC, M52172/24VDC	
M52171/30ARM	30	4	M4	30	30	M52173/12VDC, M52173/24VDC	
M52171/40ARM	40	5	M4	35 / 40	50	M52174/12VDC, M52174/24VDC	M52177/24VDC, M52177/240VA
M52171/50ARM	50	6	M4	50	100	M52175/12VDC, M52175/24VDC, M52175/240VA	M52178/24VDC, M52178/240VA
M52171/65ARM	65	8	M5	65	210	M52176/12VDC, M52176/24VDC, M52176/240VA	
M52171/80ARM	80	10	M6	80	400	M52183/12VDC, M52183/24VDC	
M52171/100ARM	100	12	M10	100	740	M52184/12VDC, M52184/24VDC	



- The actual pull force that is achieved with an armature plate is always application specific. If you use a material other than our armature plates to clamping against the pull force you will achieve may differ to the stated values.
- The material type, thickness, area, smoothness of surface, etc can all affect the performance that could be achieved. If your material is thinner than our recommended Armature Plate thickness you should expect a reduced pull force in your application.
- When an electromagnet is clamping against any ferrous surface, there may be a risk that residual magnetisation may still exist after the power supply is turned off, creating a small retention force. The nickel plating on the armature plate helps to minimise this effect. Held up parts that are heavier in weight would assist in overcoming any residual magnetisation forces.

*** Expected performance variations.** The pull force of any energise-to-hold or energise-to-release magnet is not guaranteed and will vary according to the application, the power supply plus electrical circuit used, the environmental conditions, and also how hot the unit gets during operation. The values stated are typical maximum values at room temperature subject to an expected +/-10% variation. To achieve the optimum pull force, 100% contact area must be achieved; using the recommended armature plate is advised as the pull force is affected when other material specifications, thicknesses and surfaces are used, or if the armature fails to make full contact over the diameter of the magnet face. Where misalignment may be an issue, it is recommend that an oversized armature plate is used to ensure 100% contact, this however will reduce the stated pull force by approximately 10%. If being powered continuously for over two (2) hours, it is recommend that an energise-to-release magnet is used.

Additional Notes

- **It is assumed that the user has good knowledge of electrical components and electrical circuit designs.**
- **If you do not have suitable knowledge you should seek guidance from an electrical circuit expert to properly and safely guide you.**
- **We do not provide the Power Source or the Circuit Design.**

- The Hirschmann Connector can be positioned in four ways as shown. There is a visible screw which when removed reveals a plastic clip holder which can be pushed through releasing the outer part to allow rotation in 90 degree increments. Once the right 90 degree position is selected, press the outer part back in to clip it back in place and put the screw back in to re-secure the assembly.
- When connecting same electromagnets in Series, the power source voltage is multiplied by the number of electromagnets in series. So, for example, if you have four identical 12V dc units in series, you would require a 4 x 12V = 48V dc power supply (the current for the electromagnets would be the same as the stated current for the single unit). In simple series connections, if a component electrically fails (goes open circuit), that section is series will stop working (due to zero current).
- When connecting same electromagnets in Parallel (the most common method), the power source current becomes the sum of the currents needed for all the electromagnets in parallel (unchanged voltage). So, for example, if you have four identical 440mA units in parallel, you would require a 4 x 440mA = 1760mA (1.76A) power supply (the voltage for the electromagnets would be the same as the stated voltage for the single unit). In simple parallel connections, if a component electrically fails (goes open circuit), the section in series with it will stop working (due to zero current) but the other parallel sections may continue to work (but you may not be aware of the failure if your circuit has no detection or indication designed in) - it always depends on the circuit design as to what effect you may or may not notice if part of the circuit fails.
- You must not use dc voltage units with an ac supply. You must not use ac voltage units with a dc supply. Both are extremely dangerous and will cause a serious accident. You must be competent with electrical circuitry to keep everyone safe. You must use the correct voltage and/or current supply for your circuit (see above note on circuit knowledge). Too high a voltage into an electromagnet risks damaging the electromagnet (burning out the coil) so must be avoided. Too low a voltage into an electromagnet will give a reduced performance (as it lowers the current in the coil).
- When a current flows within an electromagnet, this is an input of power which eventually becomes heat - the electromagnet will start to heat up over time (by how much depends on your application) which could increase the resistance in the armature windings which then causes the electric current flow to reduce. If your application has cooling (heat sinks) this effect may be reduced. If your application has a low duty cycle, the component will potentially not heat up as much or as quickly. Holding a part for over two (2) hours continuously is better achieved with Energise-to-Release magnets to minimise excess heat and heat-related performance drops; using Energise-to-Hold magnets for over two (2) hours continuously is not advisable and you should instead seek application guidance from Eclipse Magnetics.

Although we have made every attempt to provide accurate information, we do reserve the right to change any of the information in this document without notice.
We cannot accept any responsibility or liability for any errors or problems caused by using any of the information provided.

Conversions Guide:-

1kg ≈ 2.204lb ≈ 9.806N
1lb ≈ 0.453kg ≈ 4.448N
1N ≈ 0.101kg ≈ 0.224lb

10mm ≈ 0.393in (≈ 25/64in)
1in ≈ 25.4mm
(the above conversion values are rounded down)

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