



# ElectroMagnets

High performace electromagnets  
for hold and release applications

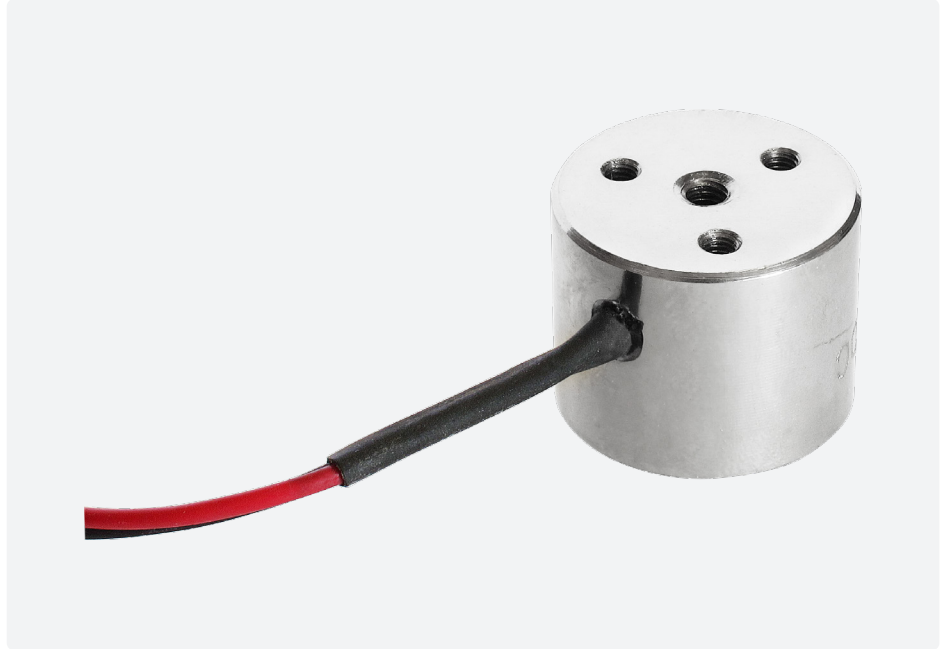
# Electro-Holding Magnet: 20mm



## Energise To Hold ElectroMagnet

### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	36g
Typical Holding Force	5.2kg
ED Rating	100%
IP Rating	54
Standard Operating Voltage	12VDC M52180/12VDC 24VDC M52180/24VDC
Current	12V - 210mA 24V - 100mA
Typical Power	2.4 - 2.5W
Connection Type	12VDC & 24VDC Free Leads (500mm Long)

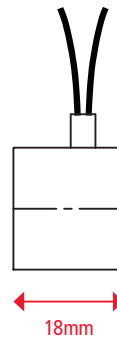


### Recommended Armature Plate

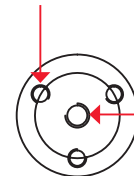
Finish	Bright nickel-plated
Diameter	25mm
Height	3mm
Screw	M3
Part Number	M52171/25ARM
Weight	15g



Leads:  
1 Red & 1 Black  
0.3mm Square  
500mm Long



3 Holes Tapped M3  
Coarse x 5mm Deep  
on 14mm P.C.D



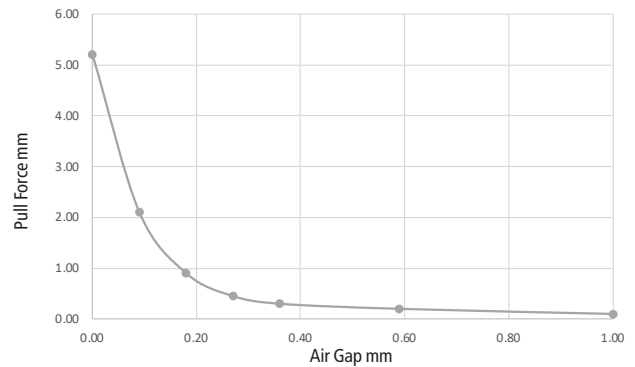
Tapped M4 Coarse  
x 10mm Deep

### Air Gap (mm)

### Pull Force\* (kg)

0.00	5.20
0.09	2.10
0.18	0.90
0.27	0.45
0.36	0.30
0.59	0.20
1.00	0.10

### Electro-Holding Magnet: 20mm



\* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

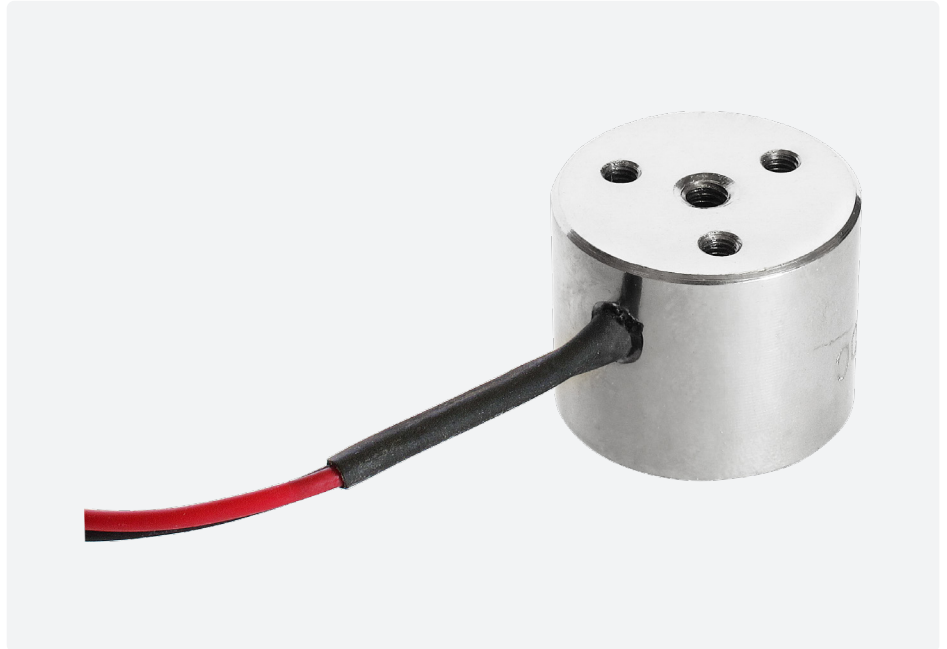
Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 25mm

## Energise To Hold ElectroMagnet

### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	66g
Typical Holding Force	15.0kg
ED Rating	100%
IP Rating	54
Standard Operating Voltage	12VDC M52172/12VDC 24VDC M52172/24VDC
Current	12V - 180mA 24V - 90mA
Typical Power	2.1 -2.2W
Connection Type	12VDC & 24VDC Free Leads (500mm Long)

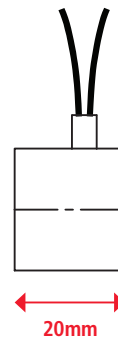


### Recommended Armature Plate

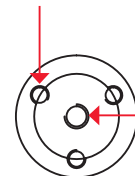
Finish	Bright nickel-plated
Diameter	25mm
Height	3mm
Screw	M3
Part Number	M52171/25ARM
Weight	15g



Leads:  
1 Red & 1 Black  
0.3mm Square  
500mm Long



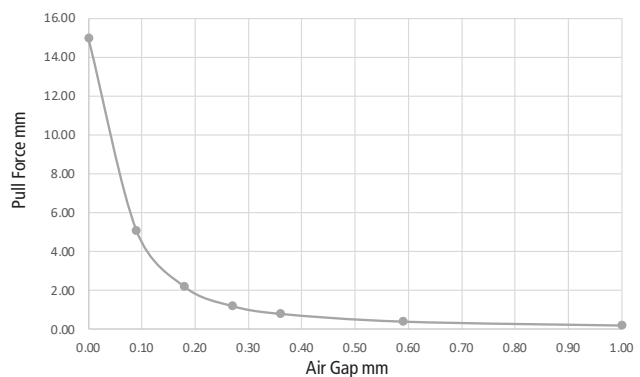
3 Holes Tapped M3  
Coarse x 5mm Deep  
on 15mm P.C.D



Tapped M4 Coarse  
x 10mm Deep

### Electro-Holding Magnet: 25mm

Air Gap (mm)	Pull Force* (kg)
0.00	15.00
0.09	5.10
0.18	2.20
0.27	1.20
0.36	0.80
0.59	0.40
1.00	0.20



\* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

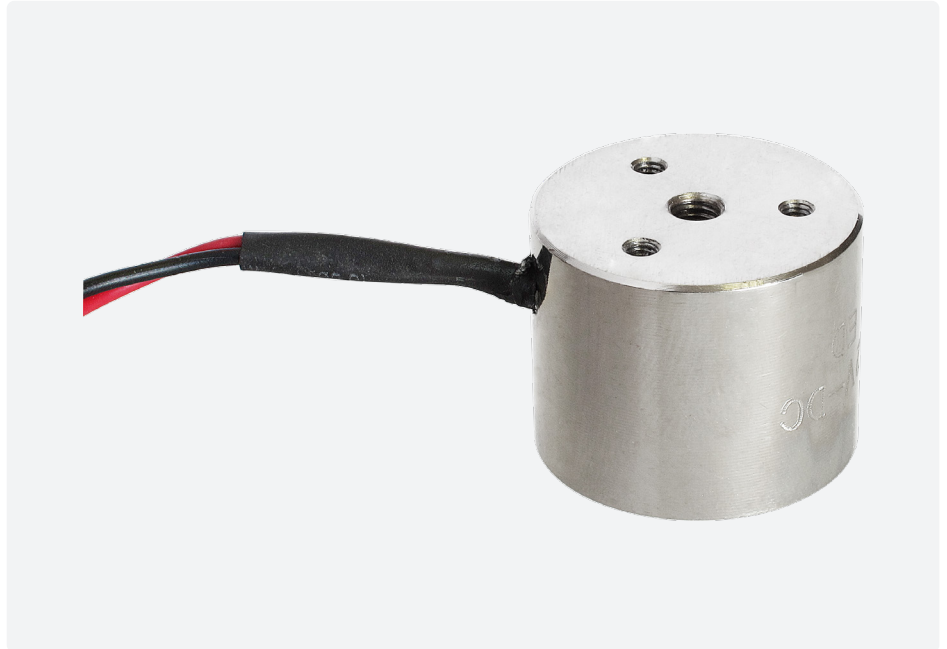
Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 30mm

## Energise To Hold ElectroMagnet

### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	108g
Typical Holding Force	28.0kg
ED Rating	100%
IP Rating	54
Standard Operating Voltage	12VDC M52173/12VDC 24VDC M52173/24VDC
Current	12V - 280mA 24V - 140mA
Typical Power	3.3W
Connection Type	12VDC & 24VDC Free Leads (500mm Long)

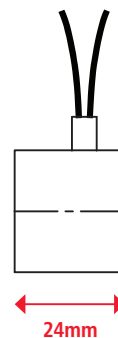


### Recommended Armature Plate

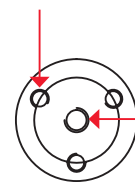
Finish	Bright nickel-plated
Diameter	30mm
Height	4mm
Screw	M4
Part Number	M52171/30ARM
Weight	30g



Leads:  
1 Red & 1 Black  
0.3mm Square  
500mm Long



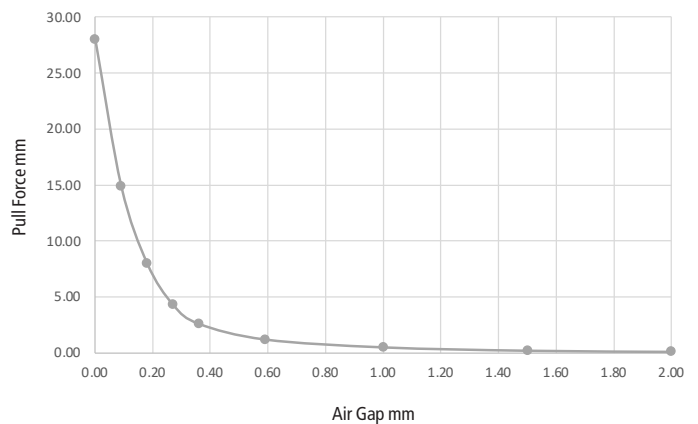
3 Holes Tapped M3  
Coarse x 5mm Deep  
on 18mm P.C.D



Tapped M5 Coarse  
x 10mm Deep

Air Gap (mm)	Pull Force* (kg)
0.00	28.00
0.09	14.90
0.18	8.00
0.27	4.30
0.36	2.60
0.59	1.20
1.00	0.50
1.50	0.20
2.00	0.10

Electro-Holding Magnet: 30mm



\* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 40mm

## Energise To Hold ElectroMagnet

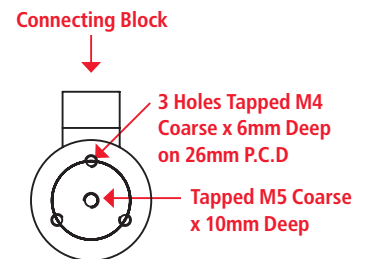
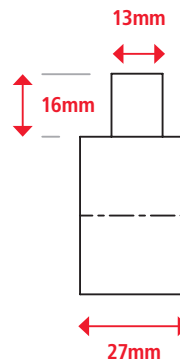
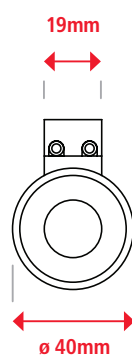
### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	210g
Typical Holding Force	55.0 kg
ED Rating	100%
IP Rating	20
Standard Operating Voltage	12VDC M52174/12VDC 24VDC M52174/24VDC
Current	12V - 440mA 24V - 230mA
Typical Power	5.28 - 5.5W
Connection Type	12VDC & 24VDC Two-pole connector



### Recommended Armature Plate

Finish	Bright nickel-plated
Diameter	40mm
Height	5mm
Screw	M4
Part Number	M52171/40ARM
Weight	50g

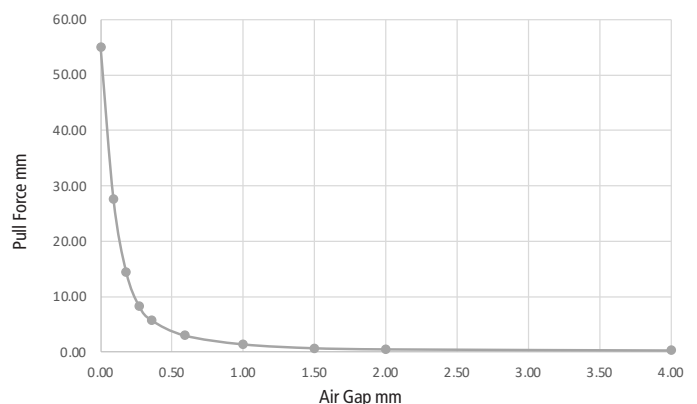


### Air Gap (mm)

### Pull Force\* (kg)

0.00	55.00
0.09	27.60
0.18	14.40
0.27	8.30
0.36	5.70
0.59	3.00
1.00	1.40
1.50	0.70
2.00	0.50
4.00	0.30

### Electro-Holding Magnet: 40mm



\* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 50mm

## Energise To Hold ElectroMagnet

### Technical Data

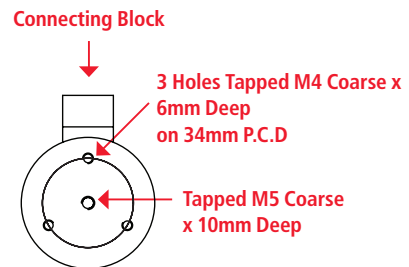
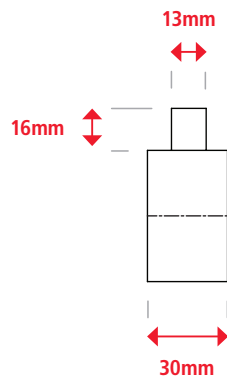
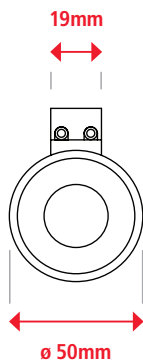
<b>Mountings</b>	Threaded holes in rear face
<b>Finish</b>	Bright nickel-plated with machined face
<b>Weight</b>	12V / 24V: 364g. 240V: 408g
<b>Typical Holding Force</b>	100.0kg
<b>ED Rating</b>	100%
<b>IP Rating</b>	20 - Two-pole connector 54 - Hirschman connector
<b>Standard Operating Voltage</b>	12VDC M52175/12VDC 24VDC M52175/24VDC 240VAC M52175/240VA
<b>Current</b>	12V - 470mA 24V - 240mA 240V - 40mA
<b>Typical Power</b>	12V & 24V - 5.64 - 5.76W 240V - 8.56W
<b>Connection Type</b>	12VDC & 24VDC: Two-pole connector 240VAC: Hirschman connector with Rectifier



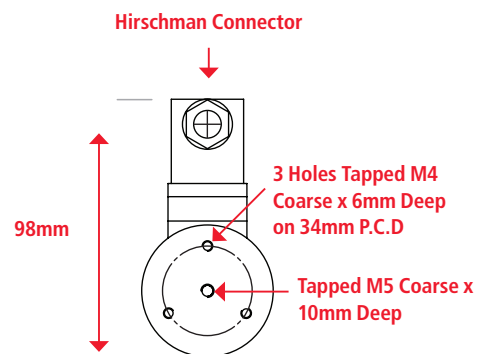
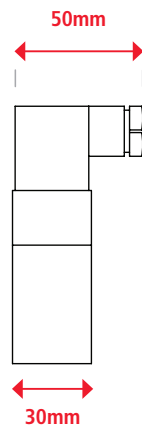
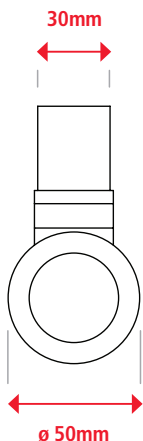
### Recommended Armature Plate

<b>Finish</b>	Bright nickel-plated
<b>Diameter</b>	50mm
<b>Height</b>	6mm
<b>Screw</b>	M4
<b>Part Number</b>	M52171/50ARM
<b>Weight</b>	100g

### 12VDC/24VDC



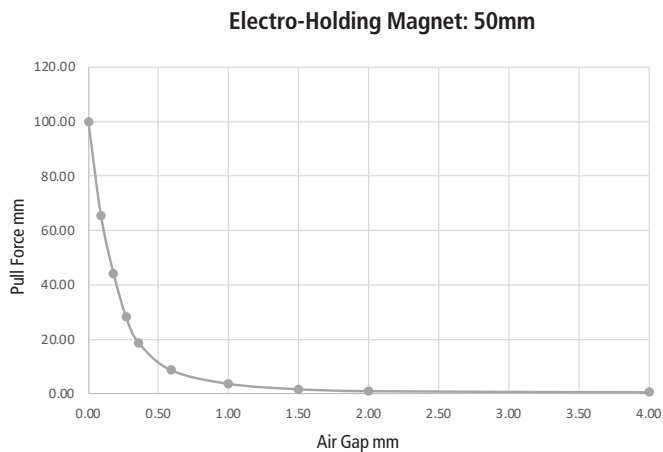
### 240VAC



# Electro-Holding Magnet: 50mm

## Energise To Hold ElectroMagnet

Air Gap (mm)	Pull Force* (kg)
0.00	100.00
0.09	65.50
0.18	44.20
0.27	28.20
0.36	18.70
0.59	8.70
1.00	3.70
1.50	1.70
2.00	1.00
4.00	0.60



### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 65mm



## Energise To Hold ElectroMagnet

### Technical Data

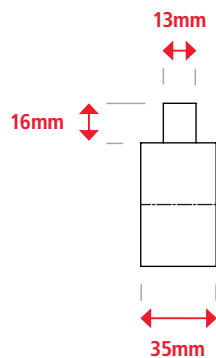
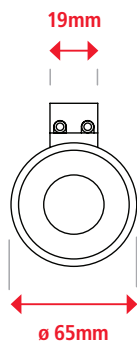
Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	12V / 24V: 710g, 240V: 744g
Typical Holding Force	164.0kg 100%
ED Rating	20 - Two-pole connector
IP Rating	54 - Hirschman connector
Standard Operating Voltage	12VDC M52176/12VDC
	24VDC M52176/24VDC
Current	240VAC M52176/240VA
	12V - 690mA 24V - 340mA 240V - 50mA
Typical Power	12V & 24V - 8.28W
	240V - 10.7W
Connection Type	12VDC & 24VDC: Two-pole connector
	240VAC: Hirschman connector with Rectifier



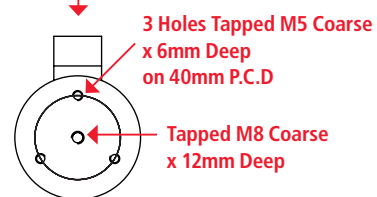
### Recommended Armature Plate

Finish	Bright nickel-plated
Diameter	65mm
Height	8mm
Screw	M5
Part Number	M52171/65ARM
Weight	210g

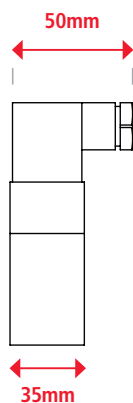
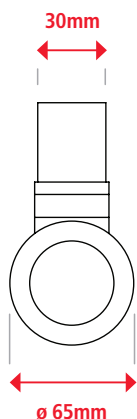
### 12VDC/24VDC



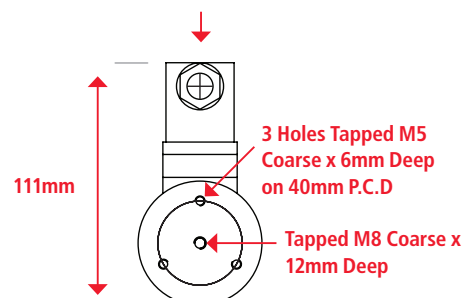
### Connecting Block



### 240VAC



### Hirschman Connector

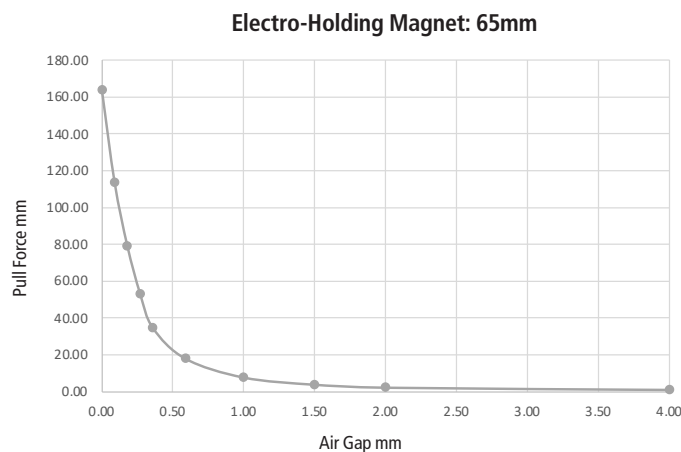




# Electro-Holding Magnet: 65mm

## Energise To Hold ElectroMagnet

Air Gap (mm)	Pull Force* (kg)
0.00	164.00
0.09	113.70
0.18	79.20
0.27	53.30
0.36	34.70
0.59	18.00
1.00	7.80
1.50	3.90
2.00	2.30
4.00	1.10



### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

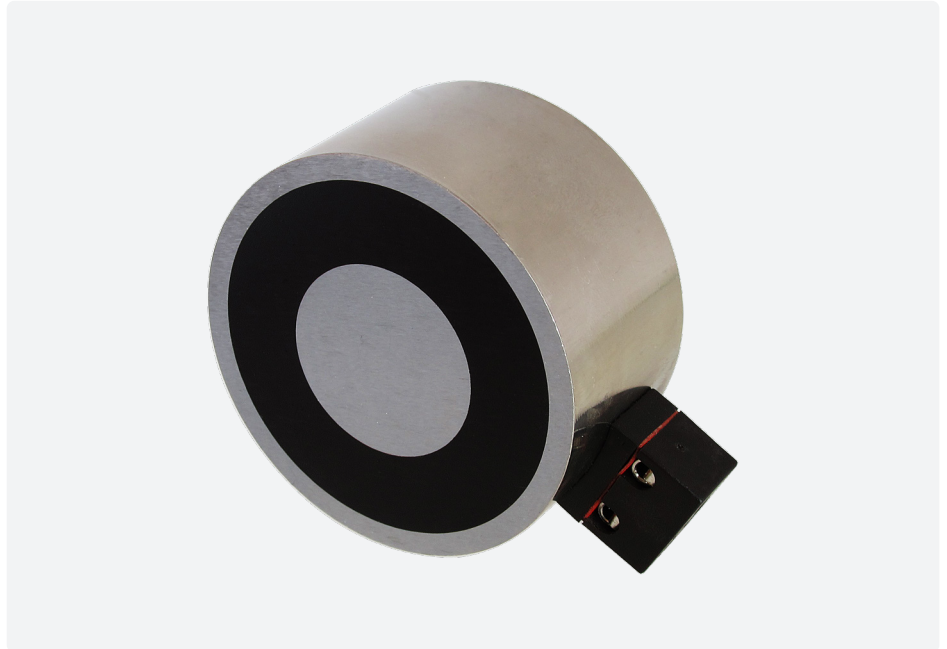
Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 80mm

## Energise To Hold ElectroMagnet

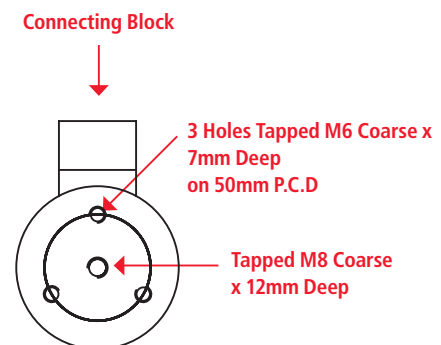
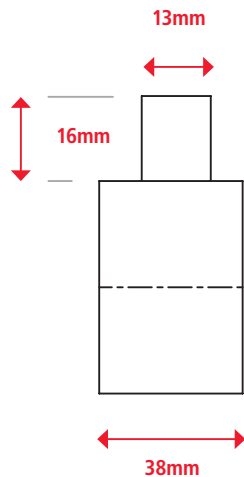
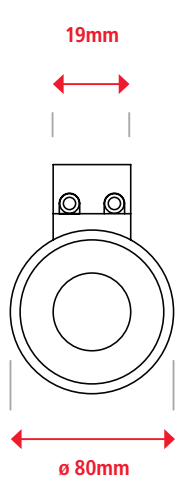
### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	1203g
Typical Holding Force	228.0kg
ED Rating	100%
IP Rating	20
Standard Operating Voltage	12VDC M52183/12VDC 24VDC M52183/24VDC
Current	12V - 1116mA 24V - 580mA
Typical Power	13.4 - 13.9W
Connection Type	12VDC & 24VDC Two-pole connector



### Recommended Armature Plate

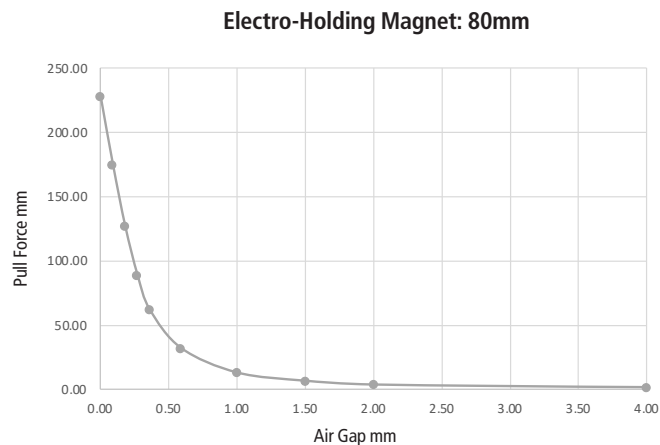
Finish	Bright nickel-plated
Diameter	80mm
Height	10mm
Screw	M6
Part Number	M52171/80ARM
Weight	400g



# Electro-Holding Magnet: 80mm

## Energise To Hold ElectroMagnet

Air Gap (mm)	Pull Force* (kg)
0.00	228.00
0.09	175.00
0.18	127.00
0.27	89.00
0.36	62.00
0.50	32.00
1.00	13.00
1.50	6.60
2.00	3.65
4.00	1.60
6.00	1.10
8.00	0.90



### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

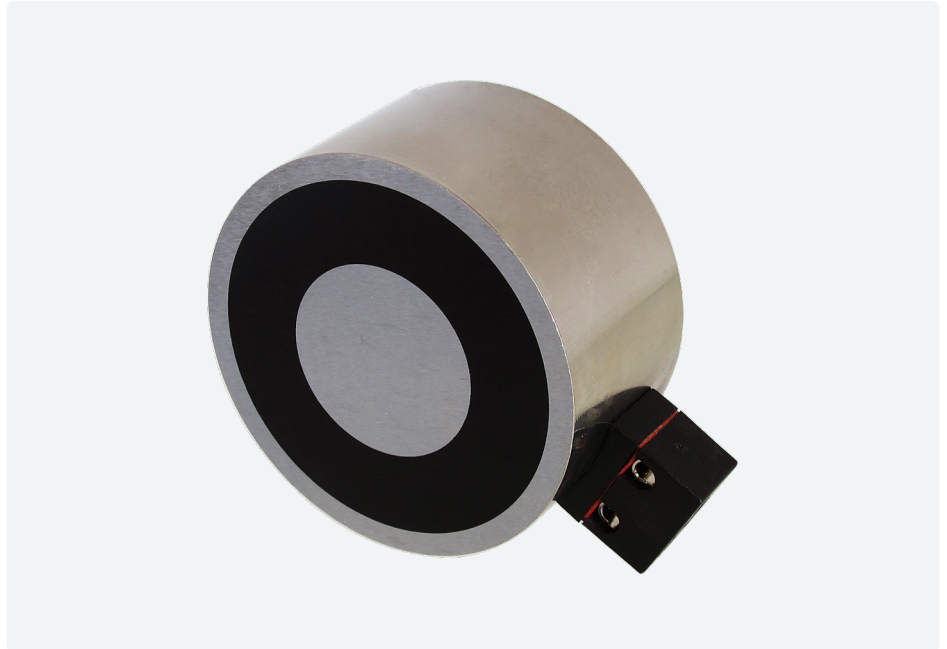
Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Holding Magnet: 100mm

## Energise To Hold ElectroMagnet

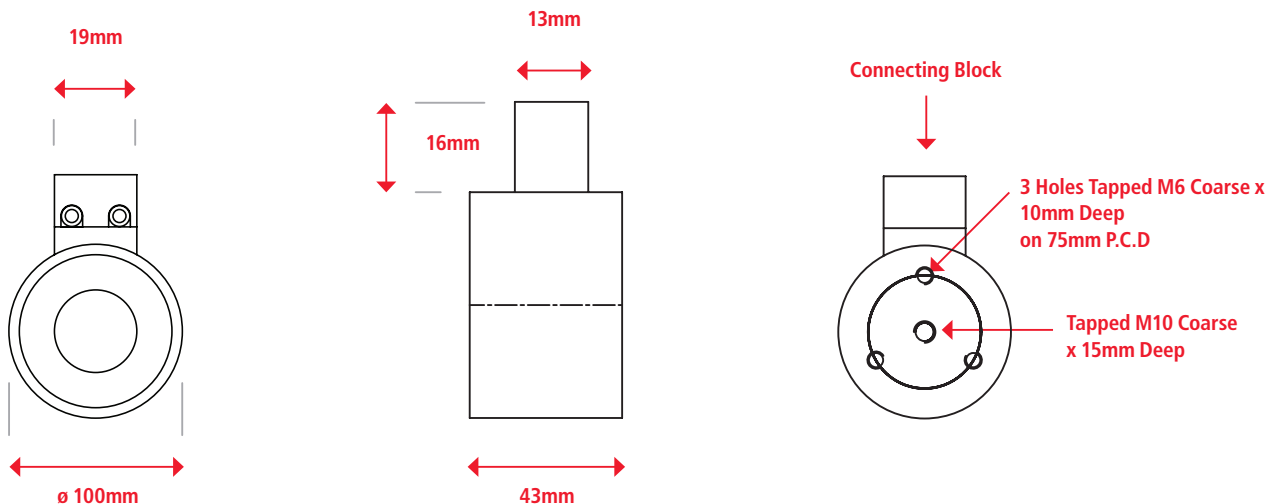
### Technical Data

Mountings	Threaded holes in rear face
Finish	Bright nickel-plated with machined face
Weight	2200g
Typical Holding Force	360.0kg
ED Rating	100%
IP Rating	20
Standard Operating Voltage	12VDC M52184/12VDC 24VDC M52184/24VDC
Current	12V - 1850mA 24V - 940mA
Typical Power	22.2 - 226W
Connection Type	12VDC & 24VDC Two-pole connector



### Recommended Armature Plate

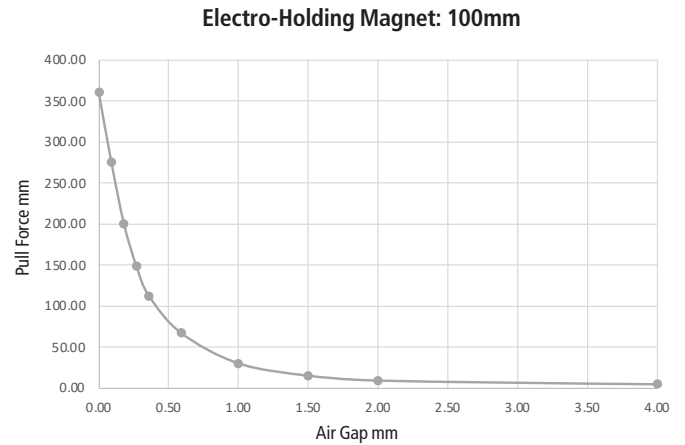
Finish	Bright nickel-plated
Diameter	100mm
Height	12mm
Screw	M10
Part Number	M52171/100ARM
Weight	740g



# Electro-Holding Magnet: 100mm

## Energise To Hold ElectroMagnet

Air Gap (mm)	Pull Force* (kg)
0.00	360.0
0.09	275.00
0.18	200.00
0.27	148.00
0.36	112.00
0.59	67.00
1.00	30.00
1.50	15.00
2.00	9.00
4.00	4.50
6.00	2.80
8.00	19.5



### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Permanent Holding Magnet: 35mm



## Energise To Release Electropermanent Magnet

### Technical Data

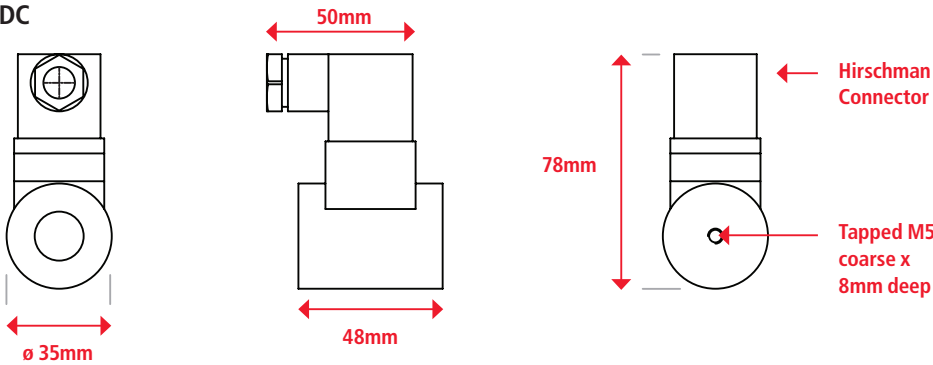
<b>Mountings</b>	Central machined hole in rear face of magnet
<b>Finish</b>	Bright nickel-plated with machined face
<b>Weight</b>	24VDC: 352g 240VAC: 354g
<b>Typical Holding Force</b>	23.0kg
<b>IP Rating</b>	54
<b>Standard Operating Voltage</b>	24VDC M52177/24VDC 240VAC M52177/240VA
<b>Current</b>	24V - 240mA 240V - 50mA
<b>Typical Power</b>	24VDC: 5.28W 240VAC: 6.42W
<b>Duty cycle</b>	S2
<b>Connection Type</b>	24VDC: Hirschmann connector 240VAC: Hirschman connector with rectifier



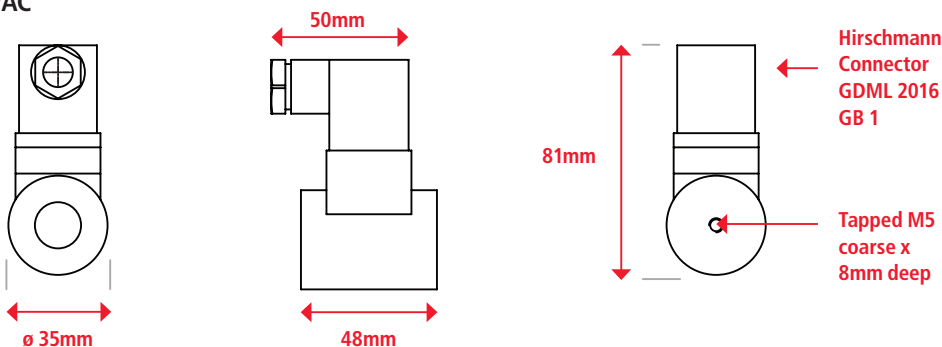
### Recommended Armature Plate

<b>Finish</b>	Bright nickel-plated
<b>Diameter</b>	40mm
<b>Height</b>	5mm
<b>Screw</b>	M4
<b>Part Number</b>	M52171/40ARM
<b>Weight</b>	50g

### 24VDC



### 24VAC



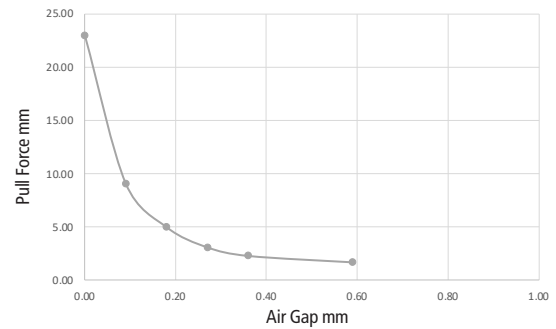
# Electro-Permanent Holding Magnet: 35mm

## Energise To Release Electropermanent Magnet

### 35mm 24V dc

Air Gap (mm)	Pull Force* (kg)
0.00	23.00
0.09	9.10
0.18	5.00
0.27	3.10
0.36	2.30
0.59	1.70

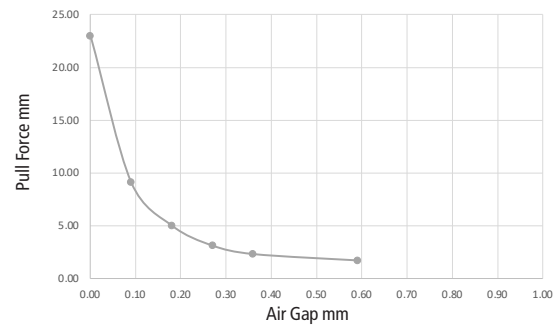
Electro-Permanent Holding Magnet: 35mm 24V dc



### 35mm 240V ac

Air Gap (mm)	Pull Force* (kg)
0.00	23.00
0.09	9.10
0.18	5.00
0.27	3.10
0.36	2.30
0.59	1.70

Electro-Permanent Holding Magnet: 35mm 240V ac



#### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Electro-Permanent Holding Magnet: 50mm



## Energise To Release Electropermanent Magnet

### Technical Data

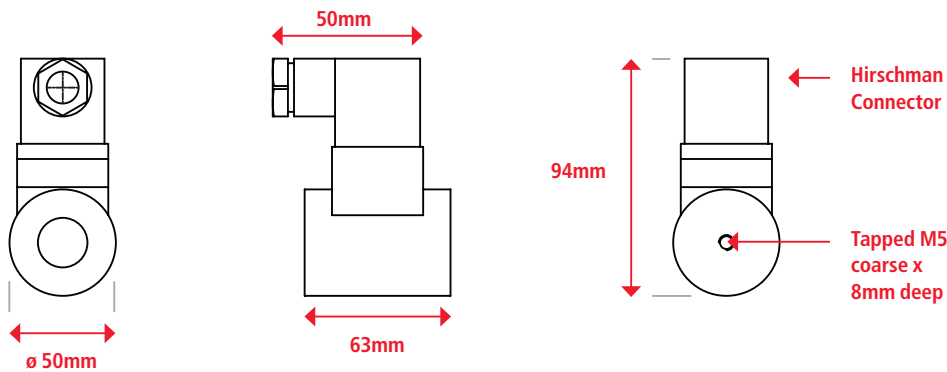
<b>Mountings</b>	Central machined hole in rear face of magnet
<b>Finish</b>	Bright nickel-plated with machined face
<b>Weight</b>	24VDC: 874g 240VAC: 880g
<b>Typical Holding Force</b>	500N
<b>IP Rating</b>	54
<b>Standard Operating Voltage</b>	24VDC M52178/24VDC 240VAC M52178/240VA
<b>Current</b>	24VDC - 350mA 240VAC - 40mA
<b>Typical Power</b>	24VDC: 8.4W 240VAC: 8.56W
<b>Duty cycle</b>	S2
<b>Ambient temperature</b>	35°C
<b>Connection Type</b>	24VDC: Hirschmann connector 240VAC: Hirschman connector with rectifier



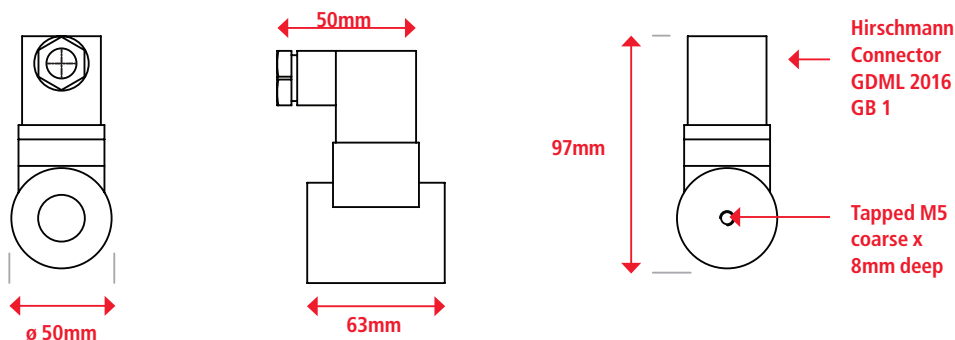
### Recommended Armature Plate

<b>Finish</b>	Bright nickel-plated
<b>Diameter</b>	50mm
<b>Height</b>	6mm
<b>Screw</b>	M4
<b>Part Number</b>	M52171/50ARM
<b>Weight</b>	100g

### 24VDC



### 240VAC

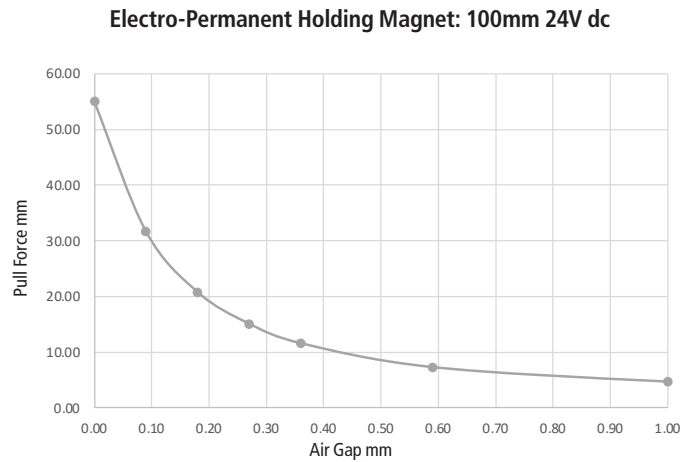




# Electro-Permanent Holding Magnet: 50mm

## Energise To Release Electropermanent Magnet

Air Gap (mm)	Pull Force* (kg)
0.00	55.00
0.09	31.70
0.18	20.80
0.27	15.10
0.36	11.60
0.59	7.30
1.00	4.70
1.50	2.80



\* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.

# Armature Plates

- To fit both types
- Rubber washers supplied to allow for a small degree of flex in their movement (at the back) to maximise direct contact (by allowing minimum air gap) to the electromagnet clamping face to allow maximum possible pull forces to be achieved.



Product Number	Diameter mm	Height mm	Screw	To Suit Diameter mm	Weight g
M52171/25ARM	25	3	M3	20.25	15
M52171/30ARM	30	4	M4	30	30
M52171/40ARM	40	5	M4	35 / 40	50
M52171/50ARM	50	6	M4	50	100
M52171/65ARM	65	8	M5	65	210
M52171/80ARM	80	10	M6	80	400
M52171/100ARM	100	12	M10	100	740

#### \* +/- 10% at room temperature

To achieve the optimum pull force 100% contact area must be achieved using the recommended armature plate. The force will be affected if other material specifications, thicknesses and surfaces are used, or if the armature fails to make positive contact over the full diameter of the face of the magnet.

Where misalignment is likely to be an issue we recommend that an oversized armature plate is used to ensure 100% full contact, this however will reduce the stated pull force by approximately 10%.