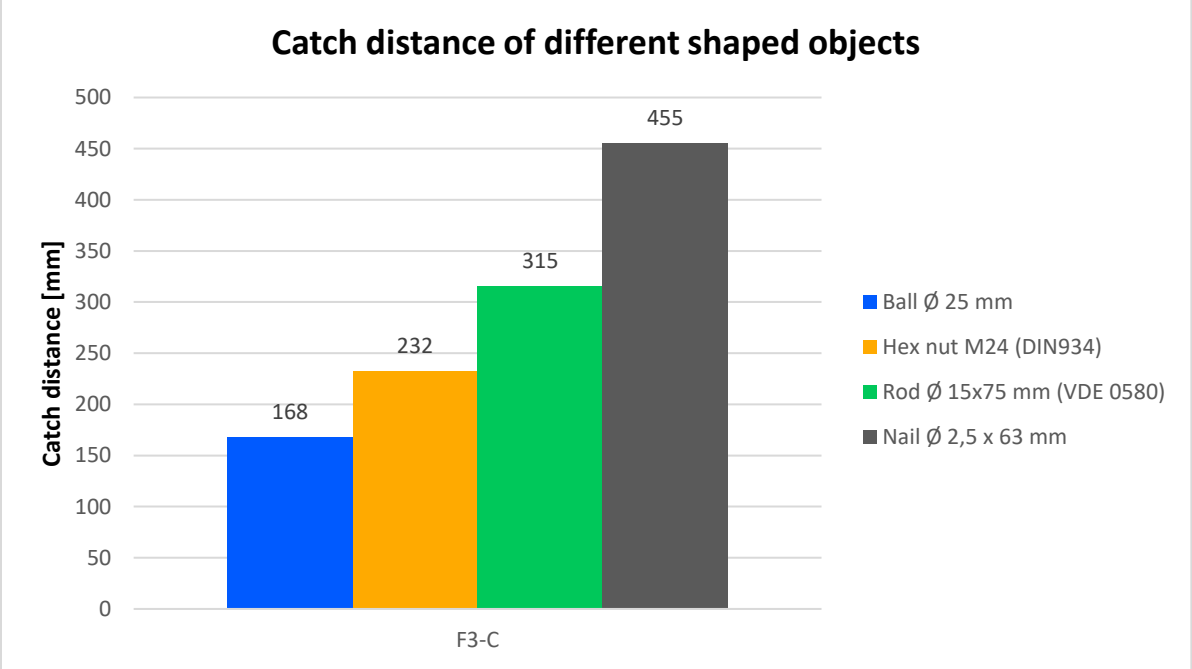
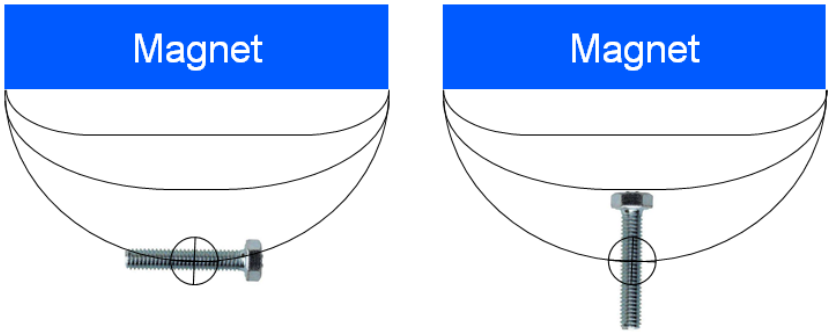
Test engineer	Emil Novák
Test date	19-11-2018
ERP reference	-
Test report number	TR1811191
Product key	ROP-F3-I-100-W-G-L-B-B-B-NA
Object of test	ROFI100330
Magnet type	Ferrite tri pole
Tesla meter	HGM09s, ser. number: 01113110
Tesla meter probe	HGM.T02.45.35.6., s.n.: 151113046
Ambient temperature	20 [C°]

Distance of 400 gauss	225	[mm]
Max [Gauss]	-	[mm]



Orientation:

When measuring a magnet, the orientation of the particle to be caught is very important. We believe that, placing the particle **always** horizontal, and the **centre** of the particle being zero, will give the most representative situation in comparison to the field. A bolt for example can be placed horizontally or vertically. The vertical situation is way easier to catch, but very unlikely to occur in practice.



Size, shape and material:

The main factor that determines the type of magnet required, is the amount of Force Index (Gauss^2/mm) that is needed to remove a target size and shape of ferrous from a burden of product material travelling at a certain belt speed.

Size

The size of an object is far less important than the shape of a ferrous particle to be caught. Theoretically the shape determines the catching distance. However, in the field, a ferrous particle is most likely underneath some material or some material sticks to it, making it heavier. This negatively affects the catching distance. This phenomenon will play a larger role with small sized particles compared to large sized particles.

Shape

Nails, beams, rods, plates and other oblong shapes are relatively easy to remove as they are easily orientated north-south and present a larger surface area to the magnet. Spherical shaped ferrous like; nuts, cubes, balls and spheres are very difficult to remove.

Material

Ferrous material is attracted by a magnet. The degree of magnetization of a material in response to a magnetic field is called permeability. Simply stated: the higher the proportion of Fe, the higher the permeability, the easier the particle is to catch.

Test objects	[Gauss²/mm]	[10^{-8} Tesla²/m]	Photo
Ball Ø 8 mm	3181	31810	
Ball Ø 25 mm	3181	31810	
Hex nut M16 (DIN934)	1650	16500	
Hex nut M20 (DIN934)	1650	16500	
Hex nut M30 (DIN934)	1650	16500	
Nail Ø 2,5 x 63 mm	150	1500	
Ø 15 x 70 mm (VDE 0580)	550	5500	
Ø 20 x 120 mm (VDE 0580)	550	5500	
Hex bolt M20x70	267	2670	
Crown closure	200	2000	
Cube 12x12x12 mm	1600	16000