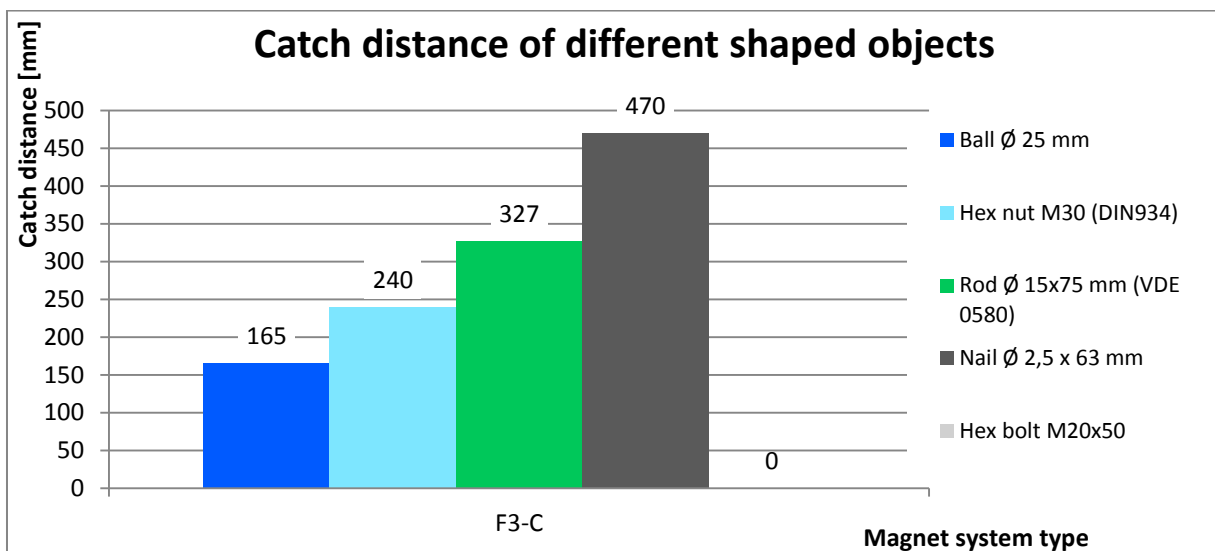
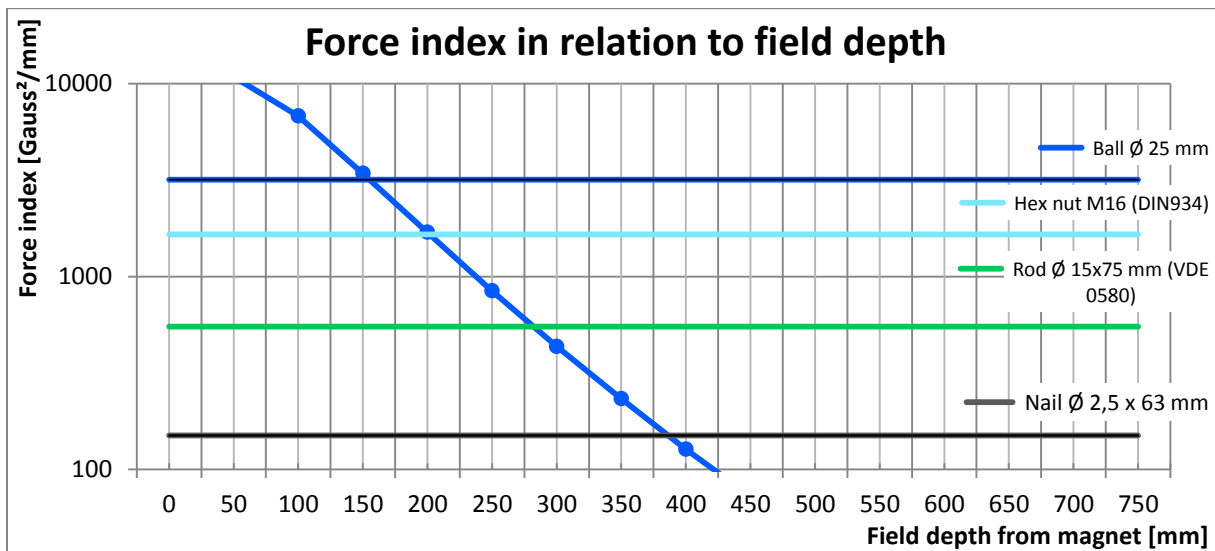
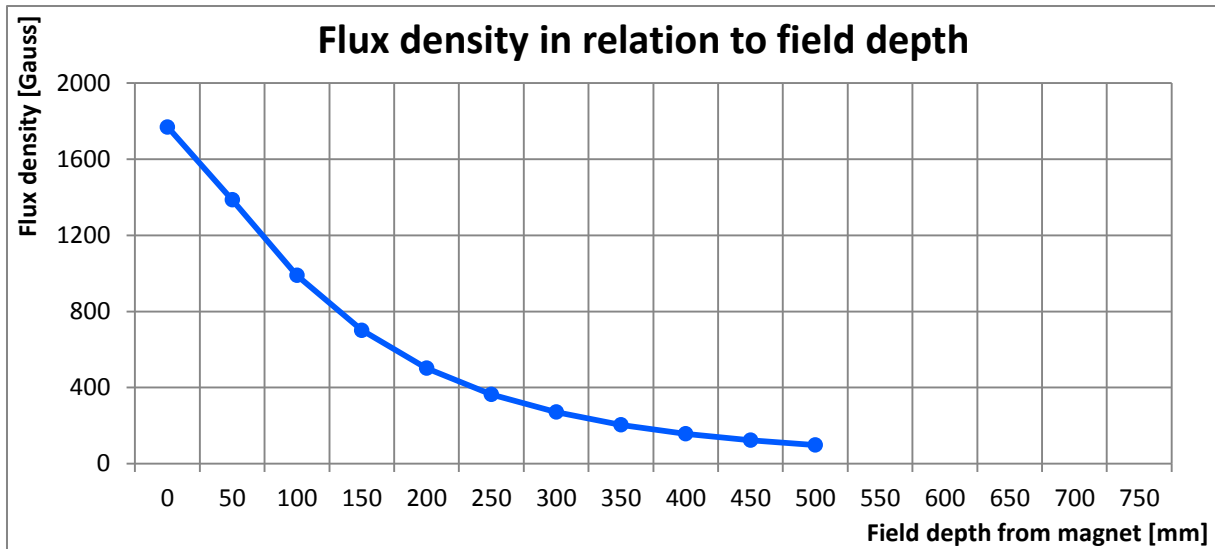


Test engineer	Emil Novák
Test date	20-12-2018
ERP reference	-
Test report number	TR1812201
Product key	ROP-F3-C-080-W-G-L-B-B-NA
Object of test	ROFC080330
Magnet type	Ferrite tri pole
Tesla meter	HGM09s, ser. number: 01113110
Tesla meter probe	HGM.T02.45.35.6., s.n.: 151113046
Ambient temperature	20 [C°]

Air gap	Flux density (cold state)	Force index (cold state)
[mm]	[Gauss]	[Gauss ² /mm]
0	1770	
50	1387	10819
100	990	6791
150	701	3421
200	502	1692
250	364	841
300	271	434
350	204	233
400	157	127
450	123	73
500	98	
550		
600		
650		
700		
750		
800		
850		
900		

Test objects		
Ball Ø 25 mm	165	[mm]
Hex nut M16 (DIN934)	-	[mm]
Hex nut M30 (DIN934)	240	[mm]
Nail Ø 2,5 x 63 mm	470	[mm]
Rod Ø 15x75 mm (VDE 0580)	327	[mm]
Rod Ø 20x120 mm (VDE 0580)	-	[mm]
Hex bolt M20x50	-	[mm]

Distance of 400 gauss	244	[mm]
Max [Gauss]	-	[mm]

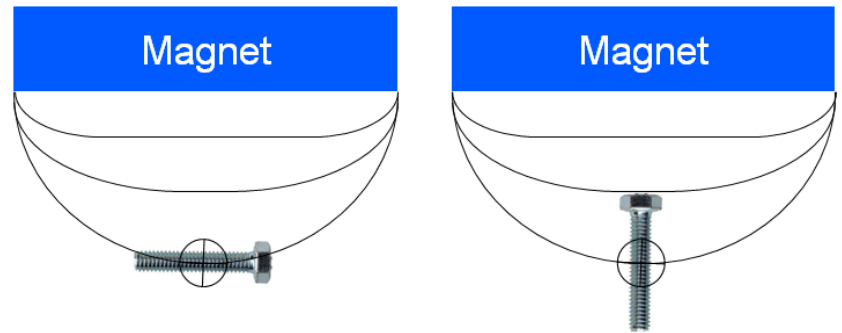


Notes:

- Flux density values measured from magnet (from wear plate = 0 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 (Gauss²/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.

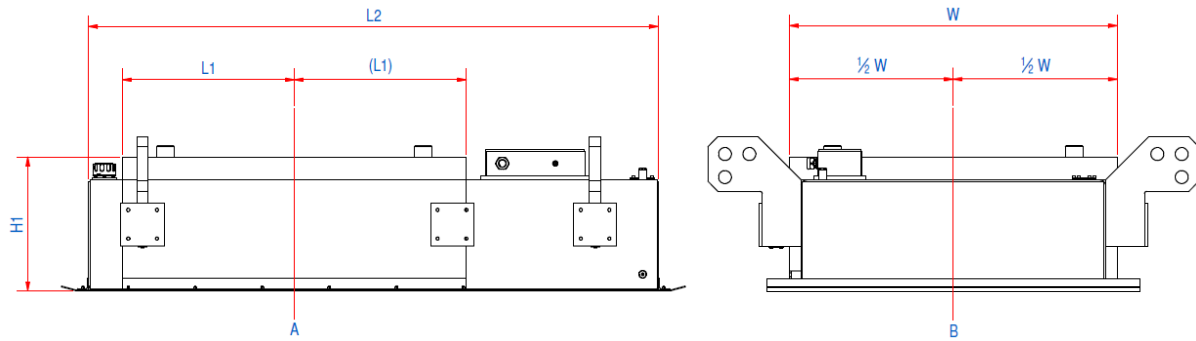
Shape

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	[Gauss ² /mm]	[10 ⁻⁸ Tesla ² /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	



Dimension	Length [mm]	The measurement spot of the main pole is located on the cross section of line A and B , right against the wear plate is the 0 mm mark (start point for measuring). Performing a flux density measurement of increasing steps of 50 mm gives a clear view on the performance and the condition of the magnet.
W	620	
H1	256	