

# BMC Magnet Usage Analysis

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## Executive Summary

### Total Magnet Weight by Year:

Year	Total Weight (lbs)
Year 1	<b>8,238.82</b>
Year 2	<b>13,165.01</b>
Year 3	<b>10,606.97</b>

### Unique Part Numbers Analyzed: 115

**Grades Found:** CRUMAX3714, N30, N33SH, N35, N35EH, N35P, N35SH, N38, N38M, N40, N40EH, N42, N45, N45P, N45SH, N48SH, N50, N50M, N52, N52P, UNKNOWN

## Weight by Magnet Grade (lbs)

Grade	Density (g/cm³)	Year 1 Qty	Year 1 (lbs)	Year 2 Qty	Year 2 (lbs)	Year 3 Qty	Year 3 (lbs)	3-Year Total (lbs)
<b>CRUMAX3714</b>	7.50	85,080	202.70	65,000	154.86	65,000	154.86	<b>512.42</b>
<b>N30</b>	7.40	710	0.97	240	0.33	1,685	2.30	<b>3.60</b>
<b>N33SH</b>	7.45	220	0.79	1,972	7.11	1,838	6.63	<b>14.54</b>
<b>N35</b>	7.50	562,685	4,865.30	621,085	4,913.55	447,532	3,927.37	<b>13,706.23</b>
<b>N35EH</b>	7.50	0	0.00	0	0.00	5,000	6.65	<b>6.65</b>
<b>N35P</b>	7.50	2,191	9.82	3,610	33.87	300	6.23	<b>49.93</b>
<b>N35SH</b>	7.50	4,432	407.87	6,319	581.53	8,947	823.38	<b>1,812.78</b>
<b>N38</b>	7.50	1,218	7.15	640	0.61	109	1.52	<b>9.28</b>
<b>N38M</b>	7.50	1,477	1,600.80	5,473	5,931.73	3,953	4,284.33	<b>11,816.86</b>
<b>N40</b>	7.52	2,643	32.40	1,622	17.30	750	20.65	<b>70.36</b>
<b>N40EH</b>	7.52	1,119	103.25	2,242	206.88	914	84.34	<b>394.47</b>
<b>N42</b>	7.55	58,739	773.84	101,110	801.54	76,788	778.89	<b>2,354.27</b>
<b>N45</b>	7.55	10,841	4.87	9,200	4.14	8,397	3.77	<b>12.78</b>
<b>N45P</b>	7.55	20,000	8.99	20,000	8.99	10,000	4.49	<b>22.47</b>
<b>N45SH</b>	7.55	0	0.00	25	18.13	20	14.51	<b>32.64</b>

<b>N48SH</b>	7.55	2,992	26.91	3,934	36.04	9,297	87.42	<b>150.37</b>
<b>N50</b>	7.55	524	3.51	356	2.38	0	0.00	<b>5.89</b>
<b>N50M</b>	7.55	20,615	116.26	18,634	121.40	24,192	183.77	<b>421.43</b>
<b>N52</b>	7.55	1,269	46.63	2,007	73.74	2,481	91.12	<b>211.48</b>
<b>N52P</b>	7.55	10,000	0.00	10,000	0.00	10,000	0.00	<b>0.00</b>
<b>UNKNOWN</b>	7.50	3,468	26.75	13,090	250.86	6,910	124.74	<b>402.35</b>
<b>GRAND TOTAL</b>	-	<b>790,223</b>	<b>8,238.82</b>	<b>886,559</b>	<b>13,165.01</b>	<b>684,113</b>	<b>10,606.97</b>	<b>32,010.80</b>

## Calculation Methodology

### Volume Calculations

- Discs/Cylinders:**  $V = \pi \times r^2 \times t$  (where  $r$  = diameter/2,  $t$  = thickness)
- Blocks:**  $V = L \times W \times T$  (length  $\times$  width  $\times$  thickness)
- Rings:**  $V = \pi \times (R^2 - r^2) \times t$  (outer radius $^2$  minus inner radius $^2$   $\times$  thickness)

### Theoretical Densities Used (g/cm<sup>3</sup>)

Grade	Density
N30	7.40
N33	7.45
N35/N35SH	7.50
N38/N38M	7.50
N40	7.52
N42-N52	7.55

### Weight Calculation

- Volume (in $^3$ )  $\times$  16.387 = Volume (cm $^3$ )
- Volume (cm $^3$ )  $\times$  Density (g/cm $^3$ ) = Weight (grams)
- Weight (grams)  $\times$  0.00220462 = Weight (lbs)
- Weight per unit  $\times$  Quantity = Total weight

## Top 25 Parts by Weight (Year 1)

Part	Description	Grade	Shape	Unit Wt (lbs)	Yr1 Qty	Yr1 lbs
NEB3598	MAG.NEO 1.000T 2.000W 2.000L N38M...	N38M	block	1.083817	1,477	1,600.80
NEP3564	MAG.NEO PLUG .870D .500T N35...	N35	disc	0.080537	17,326	1,395.38
NEP3564	MAG.NEO PLUG .870D .500T N35...	N35	disc	0.080537	17,326	1,395.38

NEB-2710	MAG.NEO .106T .256W .745L N35...	N35	block	0.005478	98,141	537.59
NEP3566	MAG.NEO PLUG .930D .500T 35SH...	N35SH	disc	0.092028	4,432	407.87
N35P500250	MAG.NEO .500D .250T N35NP...	N35	disc	0.013300	19,765	262.88
N42P500500	MAG.NEO DISC .500D .500T N42NP WITH SPACERS MAGNET...	N42	disc	0.026778	8,020	214.76
N42P500500	MAG.NEO DISC .500D .500T N42NP WITH SPACERS MAGNET...	N42	disc	0.026778	8,020	214.76
SNAP-ON-ME14A22	MAG.NEO .246D .185T CRUMAX3714...	CRUMAX3714	disc	0.002382	85,080	202.70
N42P375500	MAG.NEO DISC .375D .500T N42NP MAGNETIZED THROUGH ...	N42	disc	0.015063	8,116	122.25
N42P375500	MAG.NEO DISC .375D .500T N42NP MAGNETIZED THROUGH ...	N42	disc	0.015063	8,116	122.25
NEB35P752534	MAG.NEO .340 .250 .750 N35NP...	N35	block	0.017273	6,759	116.75
NEP4058	MAG.NEO PLUG .938D .188T N50M...	N50M	disc	0.035435	3,281	116.26
N35P220100	MAG.NEO .220D .100T N35NP...	N35	disc	0.001030	104,034	107.15
NEP4008EH	MAG.NEO PLUG .930D .500T N40EH...	N40EH	disc	0.092274	1,119	103.25
N35P500125	MAG.NEO PLUG .500D .125T N35NP...	N35	disc	0.006650	15,184	100.98
N35P500125	MAG.NEO PLUG .500D .125T N35NP...	N35	disc	0.006650	15,184	100.98
NEB35P752550	MAG.NEO .500 .250 .750 N35NP...	N35	block	0.025402	3,936	99.98
SNAP-ON-ME14A26	MAG.NEO .250D .125T N35...	N35	disc	0.001663	60,071	99.87
N35P250250	MAG.NEO .250D .250T N35NP...	N35	disc	0.003325	29,177	97.02
NEB35P505050	MAG.NEO .500 .500 .500 N35NP...	N35	block	0.033869	1,712	57.98
NEB35P755025	MAG.NEO .250T .500W .750L N35NP...	N35	block	0.025402	2,103	53.42
NEB35P755025	MAG.NEO .250T .500W .750L N35NP...	N35	block	0.025402	2,103	53.42
N35P500060	MAG.NEO .500D .060T N35NP...	N35	disc	0.003192	16,583	52.93
N35P375060	MAG.NEO .375D .060T N35NP...	N35	disc	0.001796	20,320	36.49

### ⚠ Items Not Fully Parsed (59 items)

The following items could not be automatically parsed for dimensions. These are NOT included in the totals above.

Part	Description	Yr1	Yr2	Yr3
NEB3596	MAG.NEO .500T 2.000W 2.000L N38M	6,897	5,009	7,471
NEB3592	MAG.NEO .500T 1.000W 1.000L N38	5,584	3,180	1,069
N48P220100HT	MAG.NEO .220D X 100T N48P HT Magnetized through thickness	5,000	0	2,000

NEB3594	MAG.NEO .500T 1.000W 2.000L 38M TOLS. +/- .005	3,285	3,300	2,075
NEB52P1007505PSAN	MAG.NEO .055T .750W 1.000L N52NP BLOCK MAGNETIZED	2,455	4	9
NEB52P1007505PSAN	MAG.NEO .055T .750W 1.000L N52NP BLOCK MAGNETIZED	2,455	4	9
70-43601-1	MAG.NEO 30SH SPECIAL PER DWG 100% inspected	2,000	2,000	2,000
NEB3852	MAG.NEO .375T 2.000W 2.750L 38M	1,592	1,228	1,521
51467JEH	MAG.NEO RING .500T .930D N42EH .266 HOLE	1,540	2,726	0
9011638-1	MAG.NEO N35P500250 BLACK EPOXY	1,517	1,500	0
78-99491	MAG.NEO ARC 12.000 OD N50	1,334	806	1,799
904732-1	MAG.NEO .125x .156x .250 N30	1,000	1,000	1,000
NEB3854	MAG.NEO .750T 2.000W 2.750L N38M	968	871	536
653006	MAG.NEO NEP3012NP SPCL	850	0	0
NEB35P1004841	MAG.NEO .410T .480W 1.000L N35NP	829	1,322	413
NEB35P1004841	MAG.NEO .410T .480W 1.000L N35NP	829	1,322	413
78-99445	MAG.NEO ARC 8.000 OD N50	626	4	1,843
9310357-1	MAG.NEO 3.2MMT x 12.7MMW x 25.4MML	400	0	0
NEB3596-1.750	MAG.NEO .500T 1.750W 2.000L GR. 38	376	122	218
NEB35P20010050	MAG.NEO .500 1.00 2.00 N35NP	309	138	258
... and 39 more items				

**Notes:** This analysis uses theoretical NdFeB densities. Actual weights may vary slightly due to plating thickness, manufacturing tolerances, and specific alloy compositions. All dimensions are assumed to be in inches unless marked as metric (mm).