

## LIST OF ALL MATERIALS IN MAGWEB FOLDERS

Following tables list all 1267 Magnetic Materials for which B(H) Curves and Core Loss Curves are available in the MagWeb Database online.

**Need More Information?**

Email to: [rao@magweb.us](mailto:rao@magweb.us)

Or call 214-432-7594

**Table 1. List of all MagWeb Folders (1267)**

Category	MagWeb Folder	B(H) Curves	Core Loss Curves	Total Files
A	Electrical Steel – Non Grain Oriented	293	116	409
B	Electrical Steel - Grain Oriented	141	134	275
C	Metglas & Nanocrystalline	23	10	33
D	Cobalt Steel	28	12	40
E	Nickel Steel	64	22	86
F	Stainless Steel	34	0	34
G	Low Carbon Steel	89	1	90
H	Castings	29	0	29
I	Iron Powder Core	49	26	75
J	Alloy Powder Core	28	43	71
K	Ferrite	51	7	58
L	GHz Ferrite	0	67	67
	<b>Total Files in MagWeb Database</b>	<b>829</b>	<b>438</b>	<b>1267</b>

**Table 2. "Electrical Steel (NGO)" Folder – B(H) Curves (293)**

"Electrical Steel (NGO)" Folder – B(H) Curves (293)					
No.	ID	Material Name	No.	ID	Material Name
1	AB01	HF-10 As Sheared	32	AB32	M-19 14 mil 300 Hz
2	AB02	HF-10 Stress Relief Annealed	33	AB33	M-19 14 mil 400 Hz
3	AB03	HF-10X As Sheared	34	AB34	M-19 14 mil 600 Hz
4	AB04	HF-10X Stress Relief Annealed	35	AB35	M-19 14 mil 1000 Hz
5	AB05	HF-12 As Sheared	36	AB36	M-19 14 mil 1500 Hz
6	AB06	HF-12 Stress Relief Annealed	37	AB37	M-19 14 mil 2000 Hz
7	AB07	M-10 DC	38	AB38	M-19 19 mil 0 Hz
8	AB08	M-10X 50/50	39	AB39	M-19 19 mil 50 Hz
9	AB09	M-10X parallel	40	AB40	M-19 19 mil 60 Hz
10	AB10	M-13 50 Hz	41	AB41	M-19 19 mil 100 Hz
11	AB11	M-13 60 Hz	42	AB42	M-19 19 mil 150 Hz
12	AB12	M-13 100 Hz	43	AB43	M-19 19 mil 200 Hz
13	AB13	M-13 150 Hz	44	AB44	M-19 19 mil 300 Hz
14	AB14	M-13 200 Hz	45	AB45	M-19 19 mil 400 Hz
15	AB15	M-13 300 Hz	46	AB46	M-19 19 mil 600 Hz
16	AB16	M-13 400 Hz	47	AB47	M-19 19 mil 1000 Hz
17	AB17	M-13 600 Hz	48	AB48	M-19 19 mil 1500 Hz
18	AB18	M-13 1000 Hz	49	AB49	M-19 19 mil 2000 Hz
19	AB19	M-13 1500 Hz	50	AB50	M-22
20	AB20	M-13 2000 Hz	51	AB51	M-27 14 mil 0 Hz
21	AB21	M-13 DC	52	AB52	M-27 14 mil 60 Hz
22	AB22	M-14	53	AB53	M-27 19 mil 0Hz
23	AB23	M-15 14 mil 0Hz	54	AB54	M-27 19 mil 60 Hz
24	AB24	M-15 14 mil 60 Hz	55	AB55	M-27 25 mil 60 Hz
25	AB25	M-15 19 mil 60 Hz	56	AB56	M-36
26	AB26	M-19 14 mil 0 Hz	57	AB57	M-43 Fully Processed
27	AB27	M-19 14 mil 50 Hz	58	AB58	M-43 Semi Processed
28	AB28	M-19 14 mil 60 Hz	59	AB59	M-45
29	AB29	M-19 14 mil 100 Hz	60	AB60	M-47 Fully Processed
30	AB30	M-19 14 mil 150 Hz	61	AB61	M-47 Semi Processed
31	AB31	M-19 14 mil 200 Hz	62	AC01	E230

No.	ID	Material Name
63	AC02	M195-35A
64	AC03	M400XP-35A
65	AD01	Arnon 5
66	AD02	Arnon 7 400 Hz
67	AD03	Arnon 7 800 Hz
68	AD04	Arnon 7
69	AG01	Silicon Core Iron A (732 C Anneal)
70	AG02	Silicon Core Iron A (843C Anneal)
71	AG03	Silicon Core Iron A (954C Anneal)
72	AG04	Silicon Core Iron A (1066C Anneal)
73	AG05	Silicon Core Iron A-FM (732C Anneal)
74	AG06	Silicon Core Iron A-FM (843C Anneal)
75	AG07	Silicon Core Iron A-FM (954C Anneal)
76	AG08	Silicon Core Iron A-FM (1066C Anneal)
77	AG09	Silicon Core Iron B (732C Anneal)
78	AG10	Silicon Core Iron B (843C Anneal)
79	AG11	Silicon Core Iron B (954C Anneal)
80	AG12	Silicon Core Iron B (1066C Anneal)
81	AG13	Silicon Core Iron B-FM (732C Anneal)
82	AG14	Silicon Core Iron B-FM (843C Anneal)
83	AG15	Silicon Core Iron B-FM (954C Anneal)
84	AG16	Silicon Core Iron B-FM (1066C Anneal)
85	AG17	Silicon Core Iron C (843C Anneal)
86	AG18	Silicon Core Iron C (954C Anneal)
87	AG19	Silicon Core Iron C (1066C Anneal)
88	AI01	M235-35A
89	AI02	M250-35A
90	AI03	M250-35HS
91	AI04	M250-50 Anisotropy
92	AI05	M250-50A
93	AI06	M270-35A
94	AI07	M270-50A
95	AI08	M290-50A
96	AI09	M300-35A
97	AI10	M310-50A
98	AI11	M310-65A
99	AI12	M330-35A
100	AI13	M330-35HP 50 Hz
101	AI14	M330-35HP 100 Hz
102	AI15	M330-35HP 200 Hz
103	AI16	M330-35HP 400 Hz
104	AI17	M330-35HP 1000 Hz
105	AI18	M330-35HP 2500 Hz
106	AI19	M330-35HS
107	AI20	M330-35HT
108	AI21	M330-50A Anisotropy
109	AI22	M330-50A 50 Hz
110	AI23	M330-50A 100 Hz
111	AI24	M330-50A 200Hz
112	AI25	M330-50A 400 Hz
113	AI26	M330-50A 1000 Hz
114	AI27	M330-50A 2500 Hz
115	AI28	M330-65A
116	AI29	M350-50A
117	AI30	M350-65A
118	AI31	M400-50A
119	AI32	M400-65A
120	AI33	M470-50A
121	AI34	M470-65A
122	AI35	M530-50A
123	AI36	M530-50HP
124	AI37	M530-65A
125	AI38	M600-50A
126	AI39	M600-65A
127	AI40	M600-65HP
128	AI41	M600-100A
129	AI42	M700-50A
130	AI43	M700-65A
131	AI44	M700-100A
132	AI45	M800-50A
133	AI46	M800-65A

No.	ID	Material Name
134	AI47	M800-100A
135	AI48	M1000-100A
136	AI49	NO10
137	AI50	NO12 50 Hz
138	AI51	NO12 400 Hz
139	AI52	NO12 2500 Hz
140	AI53	NO12 5000 Hz
141	AI54	NO12 10000 Hz
142	AI55	NO15 50 Hz
143	AI56	NO15 400 Hz
144	AI57	NO15 2500 Hz
145	AI58	NO15 5000 Hz
146	AI59	NO15 10000 Hz
147	AI60	NO18 50 Hz
148	AI61	NO18 400 Hz
149	AI62	NO18 2500 Hz
150	AI63	NO18 5000 Hz
151	AI64	NO18 10000 Hz
152	AI65	NO20 50 Hz
153	AI66	NO20 400 Hz
154	AI67	NO20 2500 Hz
155	AI68	NO20 5000 Hz
156	AI69	NO20 10000 Hz
157	AI70	NO27 50 Hz
158	AI71	NO27 400 Hz
159	AI72	NO27 2500 Hz
160	AI73	NO27 5000 Hz
161	AI74	NO27 10000 Hz
162	AI75	NO30 50 Hz
163	AI76	NO30 400 Hz
164	AI77	NO30 2500 Hz
165	AI78	NO30 5000 Hz
166	AI79	NO30 10000 Hz
167	AK01	10JNEX900 50 Hz
168	AK02	10JNEX900 400 Hz
169	AK03	10JNEX900 1000Hz
170	AK04	10JNEX900 2000 Hz
171	AK05	10JNEX900 5000Hz
172	AK06	10JNEX900 10000 Hz
173	AK07	10JNEX900 20000 Hz
174	AK08	10JNEX900 30000 Hz
175	AK09	10JNEX900 50000 Hz
176	AK10	10JNEX900 DC
177	AK11	10JNHF600 50 Hz
178	AK12	10JNHF600 100 Hz
179	AK13	10JNHF600 2000Hz
180	AK14	10JNHF600 10000Hz
181	AK15	10JNHF600 20000 Hz
182	AK16	10JNHF600 30000 Hz
183	AK17	10JNHF600 50000 Hz
184	AK18	10JNHF600 100000 Hz
185	AK19	10JNHF600 DC
186	AK20	20JNHF1300 50 Hz
187	AK21	20JNHF1300 100 Hz
188	AK22	20JNHF1300 2000 Hz
189	AK23	20JNHF1300 10000 Hz
190	AK24	20JNHF1300 20000 Hz
191	AK25	20JNHF1300 DC
192	AK26	35JN200
193	AP01	15HX1000
194	AP02	20HX1200
195	AP03	20HX1300
196	AP04	27HX1500
197	AP05	27HX1800
198	AP06	30HX1600
199	AP07	30HX1800
200	AP08	35H210
201	AP09	35H230
202	AP10	35H230
203	AP11	35H250
204	AP12	35H270

No.	ID	Material Name
205	AP13	35H300
206	AP14	35H360
207	AP15	35H440
208	AP16	35HX230
209	AP17	35HX250
210	AP18	35HX300
211	AP19	50H230
212	AP20	50H250
213	AP21	50H270
214	AP22	50H290
215	AP23	50H310
216	AP24	50H350
217	AP25	50H400
218	AP26	50H470
219	AP27	50H600
220	AP28	50H700
221	AP29	50H800
222	AP30	50H1000
223	AP31	50H1300
224	AP32	50HX290
225	AP33	50HX350
226	AP34	50HX470
227	AP35	50HX600
228	AQ01	35PN210
229	AQ02	35PN230
230	AQ03	35PN250
231	AQ04	35PN270
232	AQ05	35PN300
233	AQ06	35PN360
234	AQ07	35PN440
235	AQ08	50PN250
236	AQ09	50PN270
237	AQ10	50PN290
238	AQ11	50PN310
239	AQ12	50PN350
240	AQ13	50PN400
241	AQ14	50PN470
242	AQ15	50PN600
243	AQ16	50PN700
244	AQ17	50PN800
245	AQ18	50PN1300
246	AR01	2112 50 Hz Along
247	AR03	2112 50 Hz Mix
248	AR02	2112 50 Hz Traverse
249	AR04	2212 50 Hz Along
250	AR06	2212 50 Hz Mix

No.	ID	Material Name
251	AR05	2212 50 Hz Transverse
252	AR07	2312 50 Hz Along
253	AR09	2312 50 Hz Mix
254	AR08	2312 50 Hz Transverse
255	AR10	2412 50 Hz Along
256	AR12	2412 50 Hz Mix
257	AR11	2412 50 Hz Transverse
258	AR13	2413 50 Hz Along
259	AR15	2413 50 Hz Mix
260	AR14	2413 50 Hz Transverse
261	AR16	M530 50 Hz Along
262	AR18	M530 50 Hz Mix
263	AR17	M530 50 Hz Transverse
264	AR19	M700 50 Hz Along
265	AR21	M700 50 Hz Mix
266	AR20	M700 50 Hz Transverse
267	AR22	M800 50 Hz Along
268	AR24	M800 50 Hz Mix
269	AR23	M800 50 Hz Transverse
270	AT01	MES3F
271	AV01	USS Q-core P19
272	AV02	USS Q-core P21
273	AX01	Isovac 270-35A
274	AX02	Isovac 290-35A
275	AX03	Isovac 330-35A
276	AX04	Isovac 330-50A
277	AX05	Isovac 400-50A
278	AX06	Isovac 400-65A
279	AX07	Isovac 470-50A
280	AX08	Isovac 470-65A
281	AX09	Isovac 530-50A
282	AX10	Isovac 600-50A
283	AX11	Isovac 600-65A
284	AX12	Isovac 700-50A
285	AX13	Isovac 700-65A
286	AX14	Isovac 800-50A
287	AX15	Isovac 800-65-A
288	AX16	Isovac 900-50A
289	AX17	Isovac 1000-65A
290	AX18	Isovac 1000-65K
291	AX19	Isovac HP 250-35A
292	AX20	Isovac HP 350-65A
293	AX21	Isovac HP 1400-100A

**Table 3. "Electrical Steel (NGO)" Folder – Core Loss Curves (116)**

Digital Core Loss Curves in "Electrical Steel (NGO)" Folder (116)					
No.	ID	Material Name		No.	Material Name
1	aB01	HF-10 As Sheared		60	al36 M800-65A
2	aB02	HF-10 Stress Relieve Annealed		61	al37 M1000-100A
3	aB03	HF-10X As Sheared		62	al38 NO10
4	aB04	HF-10X Stress Relieve Annealed		63	al39 NO12
5	aB05	HF-12 As Sheared		64	al40 NO15
6	aB06	HF-12 Stress Relieve Annealed		65	al41 NO18
7	aB07	M-10X		66	al42 NO20
8	aB08	M-13		67	al43 NO27
9	aB09	M-15 14 MIL		68	al44 NO30
10	aB10	M-19 14 mil		69	aK01 10JNEX900 50 Hz
11	aB11	M-19 19 mil		70	aK02 10JNEX900 50 kHz
12	aB12	M-27 14 mil		71	aK03 10JNHF600 50Hz
13	aB13	M-27 14 mil		72	aK04 10JNHF600 50 kHz
14	aB14	M-27 14 mil		73	aK05 20JNHF600 50 Hz
15	aB15	M-36 14 mil		74	aK06 20JNHF1300 20 kHz
16	aB16	M-36 19 mil		75	aQ01 35PN210
17	aB17	M-36 25 mil		76	aQ02 35PN230
18	aB18	M-43 19 mil		77	aQ03 35PN250
19	aB19	M-43 25 mil		78	aQ04 35PN270
20	aB20	M-45 14 mil		79	aQ05 35PN300
21	aB21	M-47 19 mil		80	aQ06 35PN360
22	aC01	195-35A		81	aQ07 35PN440
23	aD01	Arnon 5		82	aQ08 50PN250
24	aD02	Arnon 7		83	aQ09 50PN270
25	al01	M235-35A		84	aQ10 50PN290
26	al02	M250-35A		85	aQ11 50PN310
27	al03	M250-35A eqvt		86	aQ12 50PN350
28	al04	M250-35HS		87	aQ13 50PN400
29	al05	M250-50A		88	aQ14 50PN470
30	al06	M270-35A		89	aQ15 50PN600
31	al07	M270-50A		90	aQ16 50PN700
32	al08	M290-50A		91	aQ17 50PN800
33	al09	M300-35A		92	aQ18 50PN1300
34	al10	M310-50A		93	aX01 Isovac 270-35A
35	al11	M310-65A		94	aX02 Isovac 290-35A
36	al12	M330-35A		95	aX03 Isovac 330-35A
37	al13	M330-35HP		96	aX04 Isovac 330-50A
38	al14	M330-35HS		97	aX05 Isovac 400-50A
39	al15	M330-35HT		98	aX06 Isovac 400-65A
40	al16	M330-50A		99	aX07 Isovac 470-50A
41	al17	M330-65A		100	aX08 Isovac 470-65A
42	al18	M350-50A		101	aX09 Isovac 530-50A
43	al19	M350-65A		102	aX10 Isovac 530-65A
44	al20	M400-50A		103	aX11 Isovac 600-50A
45	al21	M400-65A		104	aX12 Isovac 600-65A
46	al22	M470-50A		105	aX13 Isovac 700-50A
47	al23	M470-65A		106	aX14 Isovac 700-65A
48	al24	M530-50A		107	aX15 Isovac 800-50A
49	al25	M530-50HP		108	aX16 Isovac 800-65A
50	al26	M530-65A		109	aX17 Isovac 940-50A
51	al27	M600-100A		110	aX18 Isovac 1000-65A
52	al28	M600-50A		111	aX19 Isovac 1000-65K
53	al29	M600-65A		112	aX20 Isovac HP 235-35A
54	al30	M600-65HP		113	aX21 Isovac HP 250-35A
55	al31	M700-100A		114	aX22 Isovac HP 350-65A
56	al32	M700-50A		115	aX23 Isovac HP 1400-100A
57	al33	M700-65A		116	aZ01 CRML 25 mil
58	al34	M800-100A			
59	al35	M800-50A			

Table 2. "Electrical Steel (GO)" Folder – B(H) Curves (141)

Digital B(H) Curves in "Electrical Steel (GO)" Folder (141)					
No.	ID	Material Name	No.	ID	Material Name
1	BB01	3% Si Steel GO	71	BP04	23ZDKH90
2	BB02	H-0 DR	72	BP05	23ZDMH80
3	BB03	H-0	73	BP06	23ZDMH85
4	BB04	H-1 DR	74	BP07	23ZDMH90
5	BB05	H-1	75	BP08	23ZH85
6	BB06	H-2 DR	76	BP09	23ZH90
7	BB07	H-2	77	BP10	23ZH95
8	BB08	M-2 Lite Carlite	78	BP11	23ZH100
9	BB09	M-2 Mill-Anneal	79	BP12	27Z120
10	BB10	M-3 Carlite	80	BP13	27Z130
11	BB11	M-3 Lite Carlite	81	BP14	27ZDKH85
12	BB12	M-3 Mill-Anneal	82	BP15	27ZDKH90
13	BB13	M-3X Lite Carlite	83	BP16	27ZDKH95
14	BB14	M-4 Carlite	84	BP17	27ZH90
15	BB15	M-4 Mill-Anneal	85	BP18	27ZH95
16	BB16	M-5 Carlite	86	BP19	27ZH100
17	BB17	M-5 Mill-Anneal	87	BP20	27ZH110
18	BB18	M-6 Carlite	88	BP21	30Z120
19	BB19	M-6 Mill Anneal	89	BP22	30Z130
20	BE01	M-2	90	BP23	30ZH95
21	BE02	M-3	91	BP24	30ZH100
22	BE03	M-4	92	BP25	30ZH105
23	BE04	M-5	93	BP26	30ZH110
24	BE05	M-6	94	BP27	35Z135
25	BE06	M-6 Cross	95	BP28	35Z145
26	BE07	M-6 Rolling	96	BP29	35Z155
27	BF01	B27G120	97	BP30	35ZH110
28	BF02	B27G130	98	BP31	35ZH115
29	BF03	B27P100	99	BP32	35ZH125
30	BF04	B27P110	100	BP33	35ZH135
31	BF05	B30G120	101	BO01	3407 0.27mm
32	BF06	B30G130	102	BO02	3407 0.3 mm
33	BF07	B30G140	103	BO03	3407 0.35 mm
34	BF08	B30P105	104	BO04	3408 0.27mm
35	BF09	B30P110	105	BO05	3408 0.3mm
36	BF10	B30P120	106	BO06	3408 0.35 mm
37	BI01	M085-23P	107	BO07	3408
38	BI02	M090-23P	108	BO08	3409 0.27 mm
39	BI03	M090-27P	109	BO09	3409 0.3mm
40	BI04	M095-23P	110	BO10	3411
41	BI05	M095-27P	111	BO11	3413
42	BI06	M100-23P	112	BO12	3414 anisotropy
43	BI07	M100-30P	113	BO13	3423
44	BI08	M103-27P	114	BQ01	23PH090
45	BI09	M105-30P	115	BQ02	23PH095
46	BI10	M110-23S	116	BQ03	23PHD085
47	BI11	M110-27S	117	BQ04	27PG130
48	BI12	M111-30P	118	BQ05	27PH100
49	BI13	M115-27S	119	BQ06	27PHD090
50	BI14	M115-30S	120	BQ07	30PG120
51	BI15	M120-23S	121	BQ08	30PG130
52	BI16	M120-27S	122	BQ09	30PG140
53	BI17	M120-30S	123	BQ10	30PH105
54	BI18	M127-23S	124	BQ11	35PG145
55	BI19	M130-27S	125	BQ12	35PG155
56	BI20	M130-30S	126	BS01	110-23
57	BI21	M140-27S	127	BS02	120-23
58	BI22	M140-30S	128	BS03	114-27
59	BI23	M140-35S	129	BS04	120-27
60	BI24	M150-30S	130	BS05	130-27
61	BI25	M150-35S	131	BS06	140-27
62	BL01	Microsil 4 mil	132	BS07	117-30
63	BL02	Silectron 2 mil	133	BS08	122-30
64	BL03	Silectron 4 mil cross	134	BS09	130-30
65	BL04	Silectron 4 mil rolling	135	BS10	140-30
66	BL05	Silectron 6 mil	136	BS11	150-30
67	BL06	Silectron 12 mil	137	BS12	130-35
68	BP01	23ZDKH75	138	BS13	140-35
69	BP02	23ZDKH80	139	BS14	150-35
70	BP03	23ZDKH85	140	BS15	160-35
			141	BW01	Trafoperm N3

**Table 4. "Electrical Steel (GO)" Folder – Core Loss Curves (134).**

Digital Core Loss Curves in "Electrical Steel (GO)" Folder (134)						
No.	ID	Material Name		No.	ID	Material Name
1	bB01	H-0 0.23 mm		68	bP06	23ZDMH85
2	bB02	H-0 DR 0.23 mm		69	bP07	23ZDMH90
3	bB03	H-1 0.27 mm		70	bP08	23ZH85
4	bB04	H-1 DR 0.27 mm		71	bP09	23ZH90
5	bB05	H-2 0.30 mm		72	bP10	23ZH95
6	bB06	H-2 DR 0.30 mm		73	bP11	23ZH100
7	bB07	M-2 Lite Carlite		74	bP12	27Z120
8	bB08	M-2 Mill Anneal		75	bP13	27Z130
9	bB09	M-3 Carlite		76	bP14	27ZDKH85
10	bB10	M-3 Lite Carlite		77	bP15	27ZDKH90
11	bB11	M-3 Mill Anneal		78	bP16	27ZDKH95
12	bB12	M-3X Lite Carlite		79	bP17	27ZH90
13	bB13	M-4 120 Carlite		80	bP18	27ZH95
14	bB14	M-4 125 Carlite		81	bP19	27ZH100
15	bB15	M-4 Mill Anneal		82	bP20	27ZH110
16	bB16	M-5 125 Carlite		83	bP21	30Z120
17	bB17	M-5 130 Carlite		84	bP22	30Z130
18	bB18	M-5 140 Carlite		85	bP23	30ZH95
19	bB19	M-5 Mill Anneal		86	bP24	30ZH100
20	bB20	M-6 Carlite		87	bP25	30ZH105
21	bB21	M-6 Mill Anneal		88	bP26	30ZH110
22	bB22	M-6 Equivalent Steels		89	bP27	35Z135
23	bE01	M-2		90	bP28	35Z145
24	bE02	M-3		91	bP29	35Z155
25	bE03	M-4		92	bP30	35ZH110
26	bE04	M-5		93	bP31	35ZH115
27	bE05	M-6		94	bP32	35ZH125
28	bF01	B27G120		95	bP33	35ZH135
29	bF02	B27G130		96	bO01	3407 0.27mm
30	bF03	B27P100		97	bO02	3407 0.3 mm
31	bF04	B27P110		98	bO03	3407 0.35 mm
32	bF05	B30G120		99	bO04	3408 0.27mm
33	bF06	B30G130		100	bO05	3408 0.3mm
34	bF07	B30G140		101	bO06	3408 0.35 mm
35	bF08	B30P105		102	bO07	3409 0.27 mm
36	bF09	B30P110		103	bO08	3409 0.3mm
37	bF10	B30P120		104	bQ01	23PH090
38	bl01	M080-23P		105	bQ02	23PH095
39	bl02	M085-23P		106	bQ03	23PHD085
40	bl03	M090-23P		107	bQ04	27PG130
41	bl04	M090-27P		108	bQ05	27PH100
42	bl05	M095-23P		109	bQ06	27PHD090
43	bl06	M095-27P		110	bQ07	30PG120
44	bl07	M100-23P		111	bQ08	30PG130
45	bl08	M100-30P		112	bQ09	30PG140
46	bl09	M103-27P		113	bQ10	30PH105
47	bl10	M105-30P		114	bQ11	35PG145
48	bl11	M110-23S		115	bQ12	35PG155
49	bl12	M110-27S		116	bS01	110-23
50	bl13	M111-30P		117	bS02	120-23
51	bl14	M115-27S		118	bS03	114-27
52	bl15	M115-30S		119	bS04	120-27
53	bl16	M120-23S		120	bS05	130-27
54	bl17	M120-27S		121	bS06	140-27
55	bl18	M120-30S		122	bS07	117-30
56	bl19	M127-23S		123	bS08	122-30
57	bl20	M130-27S		124	bS09	130-30
58	bl21	M130-30S		125	bS10	140-30
59	bl22	M140-30S		126	bS11	150-30
60	bl23	M140-35S		127	bS12	130-35
61	bl24	M150-35S		128	bS13	140-35
62	bl25	M175-50N		129	bS14	150-35
63	bP01	23ZDKH75		130	bS15	160-35
64	bP02	23ZDKH80		131	bZ01	Magnesil 2 mil
65	bP03	23ZDKH85		132	bZ02	Magnesil 4 mil
66	bP04	23ZDKH90		133	bZ03	Orthonol 0.5 mil
67	bP05	23ZDMH80		134	bO37	Trafoperm N3

**Table 5. "Metglas" Folder – B(H) and Core Loss Curves (33)**

Digital B(H) Curves in "Metglas" Folder(23)		
No.	Id	Material Name
1	CJ01	Finemet 50Hz NFA
2	CJ02	Finemet 50Hz TFA
3	CJ03	Finemet FT3M
4	CJ04	Nanocrystalline
5	CN01	2605 HB1M
6	CN02	2605 S3A LFA
7	CN03	2605 S3A HFA
8	CN04	2605 SA1 50Hz
9	CN05	2605 SA1 DC
10	CN06	2705M Sheared Loop
11	CN07	2705M Sq Loop 60 Hz
12	CN08	2705M Sq Loop DC
13	CN09	2714A NFA
14	CN10	2714A LFA
15	CN09	Nanoperm 8000 Mu
16	CN10	Nanoperm 30000 Mu
17	CN11	Nanoperm 80000 Mu
18	CW01	Vitroperm 10Hz
19	CW02	Vitroperm 50Hz LFA
20	CW03	Vitroperm 50Hz NFA
21	CW04	Vitroperm 50Hz TFA
22	CW05	Vitroperm 400
23	CW06	Nano Powder Composite

Digital Core Loss Curves in "Metglas" Folder (10)		
No	Id	Material Name
1	cJ01	Finemet
2	cW01	Vitroperm
3	cN01	2605CO
4	cN02	2605HB1M
5	cN03	2605S3A
6	cN04	2605SC
7	cN05	2605SA1
8	cN06	2705M
9	cN07	2714A
10	cN08	2826MB



**Table 6. Cobalt Steel Folder – B(H) Curves (28) and Core Loss Curves (12)**

Digital B(H) Curves in "Cobalt Steel" Folder (28)		
No.	Id	Material Name
1	DC01	AFK 1
2	DC02	AFK 18
3	DC03	AFK 502
4	DG01	Hiperco 15
5	DG02	Hiperco 27
6	DG03	Hiperco 27HS
7	DG04	Hiperco 50
8	DG05	Hiperco 50A Bar (820C Anneal)
9	DG06	Hiperco 50A Bar (871 C Anneal)
10	DG07	Hiperco 50A Bar (1010C Anneal)
11	DG08	Hiperco 50A Strip ( 871C Anneal)
12	DG09	Hiperco 50HS
13	DG10	HS50
14	DG11	Permendur 24
15	DG12	Permendur 49
16	DG13	Rotelloy 3
17	DG14	Rotelloy 5
18	DG15	Rotelloy 8
19	DW01	Vacoflux 17
20	DW02	Vacoflux 48
21	DW03	Vacodur 49 Magnetic
22	DW04	Vacodur 50 Magnetic
23	DW05	Vacodur Splus
24	DZ01	2V Permendur
25	DZ02	Cast Cobalt
26	DZ03	Cobalt
27	DZ04	Supermendur
28	DZ05	Vanadium Permendur

Digital Core Loss Curves in "Cobalt Steel" Folder (12)		
No.	Id	Material Name
1	dG01	Hiperco 27
2	dG02	Hiperco 50 0.006 in
3	dG03	Hiperco 50 0.010 in
4	dG04	Hiperco 50 9.014 in
5	dG05	Hiperco 50A 0.006in
6	dG06	Hiperco 50A .010in
7	dG07	Hiperco 50A .014in
8	dG08	Hiperco 50HS 0.006 in
9	dG09	Supermendur 2 mil
10	dG10	Supermendur 4 mil
11	dW01	Vacoflux 48
12	dW02	Vacoflux 50

**Table 7. "Nickel Steel" Folder – B(H) Curves (64)**

Digital B(H) Curves in "Nickel Steel" Folder (64)		
No.	Id	Material Name
1	Eb01	AD-MU-80 60 Hz
2	Eb02	AD-MU-80 DC
3	EC01	Supra 50
4	EC02	Supra 50 150 C
5	EC03	Supra 50 -25 C
6	EC04	Supra 510
7	EE01	4750 60Hz
8	EE02	4750 400 Hz
9	EE03	4750 1000 Hz
10	EE04	4750 cross
11	EE05	4750
12	EG01	55 Ni-Fe
13	EG02	Carpenter 49 (788C Anneal)
14	EG03	Carpenter 49 (871C Anneal)
15	EG04	Carpenter 49 (954C Anneal)
16	EG05	Carpenter 49 (1121C Anneal)
17	EG06	Carpenter 49 Rotor Grade (843C Anneal)
18	EG07	Carpenter 49 Rotor Grade (954C Anneal)
19	EG08	Carpenter 49 Rotor Grade (1066C Anneal)
20	EG09	Carpenter 49 Rotor Grade (1177C Anneal)
21	EG10	Carpenter 49 Transformer Gr 60 Hz
22	EG11	Carpenter 49 Transformer Gr 400 Hz
23	EG12	Carpenter 49
24	EG13	Hymu 80
25	EG14	Hymu 800
26	EL01	Square 50
27	EL02	Square 80
28	EL03	Supermalloy
29	EL04	Superperm 49
30	EL05	Superperm 80
31	EL06	Supersquare 80
32	Ej01	Conetic

No.	Id	Material Name
33	Ej02	Netic
34	Em01	Nilomag Alloy 77 50Hz
35	Em02	Nilomag Alloy 77 400Hz
36	Em03	Nilomag Alloy 77 1000 Hz
37	Em04	Nilomag Alloy 77 DC
38	EW01	Megaperm40L (35%Ni)
39	EW02	MuMetall (80% Ni)
40	EW03	Permax M (65% Ni)
41	EW04	Permenorm 3601 K5 (50% Ni)
42	EW05	Permenorm 5000 H2 (50% Ni)
43	EW06	Permenorm 5000 S4 (50%Ni)
44	EW07	Permenorm 5000 V5 (50%Ni)
45	EW08	Ultrperm 10 (80%Ni)
46	EW09	Ultraperm 200 (80% Ni)
47	EW10	Ultrvac 44V6 (44%Ni)
48	EW11	Vacoperm 100 (80%Ni)
49	EZ02	Deltamax GO
50	EZ03	MolyPermalloy
51	EZ04	Monel Annealed
52	EZ05	Monimax Non-Oriented
53	EZ06	Monimax Oriented
54	EZ07	MuMetal
55	EZ08	Mumetal 77% Ni
56	EZ09	Mumetal 80% Ni
57	EZ10	Ni 30% Temp. Compensated Alloy
58	EZ11	Nickel
59	Ei01	Permalloy 80% Ni
60	EZ12	Permalloy GO 78% Ni
61	EZ13	Permalloy Nonoriented
62	EZ14	Permalloy Oriented
63	EZ15	Perminvar
64	EZ16	Sinimax

**Table 8. "Nickel Steel" Folder – Core Loss Curves (22)**

Digital Core Loss Curves in "Nickel Steel" Folder (22)		
No.	Id	Material Name
1	eG01	Carpenter 49 GO .006in
2	eG02	Carpenter 49 GO .014in
3	eG03	Carpenter 49 NGO
4	eG04	Hymu 80 .004in
5	eG05	Hymu 80 .006in
6	eG06	Hymu 80 .014in
7	eW01	MuMetall (80% Ni)
8	eI01	Nilomag Alloy 77 0.1 mm
9	eI02	Nilomag Alloy 77 0.2 mm
10	eW02	Perenorm 3605 (50% Ni)
11	eW03	Perenorm 5002
12	eG07	Permalloy 80 1mil
13	eG08	Permalloy 80 2 mil
14	eG09	Permalloy 80 .5 mil
15	eW04	Permax M (65% Ni)
16	eG10	Supermalloy 1mil
17	eG11	Supermalloy 2mil
18	eG12	Supermalloy .5mil
19	eG13	Superperm 48
20	eW05	Ultraperm 10 (80%Ni)
21	eW06	Vacoperm 100 (80%Ni)
22	eW07	Vacoperm 85 (35%Ni)

**Table 9. "Stainless Steel" Folder – B(H) Curves (34)**

Digital B(H) Curves in "Stainless Steel" Folder (34)		
No.	ID	Material Name
1	FE01	405
2	FE02	410
3	FE03	416
4	FE04	430
5	FE05	430F
6	FG01	12-FM
6	FG02	13-XP
7	FG03	430F B75
8	FG04	430F B82
9	FG05	430FR
10	FG06	430FR IMRE
11	FT01	KM31
12	FT02	KM35FL
13	FT03	KM38
14	FT04	KMH50
15	FT05	KMH60
16	FZ01	9% Cr Steel at 25C
17	FZ02	9% Cr Steel at 600C
18	FZ03	17-4 PH/ 630
19	FZ04	17-7 PH
20	FZ05	20cb-3
21	FZ06	35% Cr Steel
22	FZ07	310S
23	FZ08	316LN
24	FZ09	400
25	FZ10	440
26	FZ11	455
27	FZ12	Chromium Steel
28	FZ13	Duplex Stainless Steel
29	FZ14	Nitronic 33
30	FZ15	Nitronic 40
31	FZ16	SUS 403
32	FZ17	SUS 405
33	FZ18	TAF
34	FZ19	SUS304L

**Table 10. "Low Carbon Steel" Folder – B(H) Curves (89)**

Digital B(H) Curves in "Carbon Steel" Folder (89)					
No.	ID	Material Name	No.	ID	Material Name
1	GZ01	0.31% Carbon Steel	45	GZ45	Galvanized Wire
2	GZ02	1% Carbon Steel	46	GZ46	Gr. 36 Steel
3	GZ03	1.44% Carbon Steel	47	GZ47	HSLA 80 Steel
4	GZ04	12L14 Steel	48	GZ48	HY 100 Steel
5	GZ05	50H470 Steel	49	GZ49	HyTuf Steel
6	GZ06	1002 Steel	50	GZ50	Low Carbon Strip Cold Rolled
7	GZ07	1006 Annealed	51	GZ51	Low Carbon Strip Cold Rolled Annealed
8	GZ08	1006 Steel	52	GZ52	Low Carbon Strip Hot Rolled
9	GZ09	1008 Steel	53	GZ53	M-50
10	GZ10	1010 Cold Rolled Annealed	54	GZ54	Magnet steel
11	GZ11	1010 Cold Rolled	55	GZ55	Magnetic Rubber
12	GZ12	1010 Hot Rolled 1300F Anneal	56	GZ56	Magnetil
13	GZ13	1010 Hot Rolled 1400F Anneal	57	GZ57	Magnetite
14	GZ14	1010 Hot Rolled 1500 F Anneal	58	GZ58	Mild Steel 1 Hz
15	GZ15	1010 Steel	59	GZ59	Mild Steel 50 Hz
16	GZ16	1016 Steel	60	GZ60	Mild Steel 100 Hz
17	GZ17	1018 Steel	61	GZ61	Mild Steel 150 Hz
18	GZ18	1020 Cold Rolled Annealed	62	GZ62	Mild Steel 200 Hz
19	GZ19	1020 Cold Rolled	63	GZ63	Mild Steel 250 Hz
20	GZ20	1020 Hot Rolled 1300F Anneal	64	GZ64	Mild Steel
21	GZ21	1020 Hot Rolled 1400F Anneal	65	GZ65	P-6 Steel, 577C Anneal
22	GZ22	1020 Hot Rolled 1500F Anneal	66	GZ66	P-6 Steel, 625C Anneal
23	GZ23	1020 SAE	67	GZ67	P-6 Steel
24	GZ24	1020 Steel	68	GZ68	P-9 Steel
25	GZ25	1030 Annealed	69	GZ69	Pure Iron Annealed
26	GZ26	1030 Cold Rolled	70	GZ70	Pure Iron Armco (99.85% Fe)
27	GZ27	1030 Steel	71	GZ71	Pure Iron Consumet (99.58% Fe, 843 C Anneal)
28	GZ28	1035 Steel	72	GZ72	Pure Iron Consumet (99.58% Fe, 954 C Anneal)
29	GZ29	1045 Steel	73	GZ73	Pure Iron ME1 Free Cutting
30	GZ30	1050 Steel	74	GZ74	Pure Iron Gr 19991
31	GZ31	1095 Steel	75	GZ75	Pure Iron Vacofer S1 (99.98%Fe)
32	GZ32	1117 Steel	76	GZ76	Pure Iron
33	GZ33	1215 Steel	77	GZ77	SAE 52100
34	GZ34	4130 Steel	78	GZ78	Soft iron
35	GZ35	4140 Steel	79	GZ79	St 1860 Steel
36	GZ36	4340 Steel	80	GZ80	St 37-2 Steel
37	GZ37	6302 Steel	81	GZ81	Steel Forging Annealed
38	GZ38	6427 Steel	82	GZ82	Terfenol - D
39	GZ39	A36 Steel	83	GZ83	Tool Steel
40	GZ40	A80	84	GZ84	Tungsten Steel
41	GZ41	A90	85	GZ85	Tungsten Steel MT17F
42	GZ42	A284 Grade D	86	GZ86	Tungsten Steel MT185
43	GZ43	A633 Steel	87	GZ87	Tungsten Steel MT18F
44	GZ44	D6ac Steel	88	GZ88	Tungsten Steel Varian MLC
			89	GZ89	Vascojet Steel

**Table 11. "Castings" Folder - B(H) Curves (29)**

Digital B(H) Curves in "Castings" Folder (29)		
No.	Id.	Material Name
1	HZ01	Cast Iron 3% C
2	HZ02	Cast Iron Ductile
3	HZ03	Cast Iron GJL 250
4	HZ04	Cast Iron GJS 400-15
5	HZ05	Cast Iron GJS 500-7
6	HZ06	Cast Iron GJS 700-2
7	HZ07	Cast Iron Malleable
8	HZ08	Cast Iron Nodular
9	HZ09	Cast Iron
10	HZ10	Cast Steel A148 80-50
11	HZ11	Cast Steel Annealed
12	HZ12	Cast Steel GS-52
13	HZ13	Cast Steel Hardened
14	HZ14	Cast Steel
15	HZ15	Cast Steel a
16	HZ16	Ductile Iron Annealed
17	HZ17	Ductile Iron Silal
18	HZ18	Ductile Iron
19	HZ19	Gray Iron Annealed
20	HZ20	Gray Iron As Cast
21	HZ21	Ingot Iron Annealed
22	HZ22	Ingot Iron
23	HZ23	Magtiz
24	HZ24	Malleable Iron 2.24%C
25	HZ25	Malleable Iron As Cast
26	HZ26	Malleable Iron
27	HZ27	Steel Castings As Cast
28	HZ28	Wrought Iron Annealed
29	HZ29	Wrought Iron

**Table 12. "Iron Powder Core" Folder- B(H) Curves (49), Core Loss Curves (26)**

Digital B(H) Curves in "Iron Powder" Folder (49)		
No.	Id.	Material Name
1	If01	Alphaform LF
2	If02	Alphaform MF
3	If03	Ferrotron 559H
4	If04	Fluxtrol 25
5	If05	Fluxtrol 50
6	If06	Fluxtrol 100
7	If07	Fluxrol 119
8	If08	Fluxtrol A
9	If09	Fluxtrol LRM
10	Ih01	Somaloy 500A
11	Ih02	Somaloy 500B
12	Ih03	Somaloy 500C
13	Ih04	Somaloy 700 3p
14	Ik01	-1 Material
15	Ik02	-2 Material
16	Ik03	-3 Material
17	Ik04	-6 Material
18	Ik05	-7 Material
19	Ik06	-8 Material
20	Ik07	-10 Material
21	Ik08	-12 Material
22	Ik09	-14 Material
23	Ik10	-15 Material
24	Ik11	-17 Material
25	Ik12	-18 Material
26	Ik13	-26 Material
27	Ik14	-30 Material
28	Ik15	-35 Material
29	Ik16	-38 Material
30	Ik17	-40 Material
31	Ik18	-45 Material
32	Ik19	- 52 Material
33	Ik20	-60 Material
34	Ik21	-61 Material
35	Ik22	-63 Material
36	Ik23	-66 Material
37	Ik24	-70 Material
38	Ik25	LM085 Material
39	Ik26	M125 Material
40	In01	SMP 1171
41	In02	SMP 1172
42	In03	SMP 1182
43	In04	SMP 1192
44	In05	SMP 1220
45	In06	SMP 1230
46	In07	SMP 1321
47	Ia03	Accucore
48	Ir01	Vetroferrit
49	Iz01	Powder Iron Annealed

Digital Core Loss Curves in "Iron Powder" Folder (26)		
No.	Id.	Material Name
1	iq01	-2 Material
2	iq02	-8 Material
3	iq03	-14 Material
4	iq04	-18 Material
5	iq05	-19 Material
6	iq06	-26 Material
7	iq07	-30 Material
8	iq08	-34 Material
9	iq09	-35 Material
10	iq10	-38 Material
11	iq11	-40 Material
12	iq12	-45 Material
13	iq13	- 52 Material
14	iq14	-60 Material
15	iq15	-61 Material
16	iq16	-63 Material
17	iq17	-65 Material
18	iq18	-66 Material
19	iq19	-70 Material
20	iq20	M125 Material
21	iq01	Accucore
22	if01	Fluxtrol 559H
23	if02	Fluxtrol 50
24	if03	Fluxtrol 100
25	if04	Fluxtrol A
26	ih01	Somaloy 500

**Table 13. "Alloy Powder Core" Folder- B(H) Curves (28), Core Loss Curves (43)**

Smooth B(H) Curves in "Alloy Powder" Folder (28)		
No.	Id	Material Name
1	Ji01	Amoflux
2	Ji02	HiFlux 14 mu
3	Ji03	HiFlux 26 mu
4	Ji04	HiFlux 60 mu
5	Ji05	HiFlux 125 mu
6	Ji06	HiFlux 147 mu
7	Ji07	HiFlux 160 mu
8	Ji08	Koolmu 26 mu
9	Ji09	Koolmu 40 mu
10	Ji10	Koolmu 60 mu
11	Ji11	Koolmu 75 mu
12	Ji12	Koolmu 90 mu
13	Ji13	Koolmu 125 mu
14	Ji14	MPP 14 mu
15	Ji15	MPP 26 mu
16	Ji16	MPP 60 mu
17	Ji17	MPP 125 mu
18	Ji18	MPP 147 mu
19	Ji19	MPP 160 mu
20	Ji20	MPP 173 mu
21	Ji21	MPP 200 mu
22	Ji22	MPP 300 mu
23	Ji23	MPP 550 mu
24	Ji24	Xflux 26mu
25	Ji25	Xflux 60mu
26	Jl01	SuperMSS
27	Jl02	SuperMSS 26 mu
28	Jl03	SuperMSS 60 mu

Digital Core Loss Curves in "Alloy Powder" Folder (43)		
No.	Id	Material Name
1	jj01	Amoflux
2	jj02	HiFlux 14 mu
3	jj03	HiFlux 26 mu
4	jj04	HiFlux 60 mu
5	jj05	HiFlux 125 mu
6	jj06	HiFlux 160 mu
7	jj07	Koolmu 40 mu
8	jj08	Koolmu 90 mu
9	jj09	Koolmu 125 mu
10	jj10	MPP 14 mu
11	jj11	MPP 26 mu
12	jj12	MPP 60 mu
13	jj13	MPP 125 mu
14	jj14	MPP 173 mu
15	jj15	MPP 300 mu
16	jj16	MPP 550 mu
17	jj17	Xflux 26mu
18	jj18	Xflux 60mu
19	jk01	Fluxsan 14mu
20	jk02	Fluxsan 26mu
21	jk03	Fluxsan 40mu
22	jk04	Fluxsan 60mu
23	jk05	Fluxsan 75mu
24	jk06	Fluxsan 90mu
25	jk07	OptiAlloy 14mu
26	jk08	OptiAlloy 26mu
27	jk09	OptiAlloy 40mu
28	jk10	OptiAlloy 60mu
29	jk11	OptiAlloy 75mu
30	jk12	OptiAlloy 90mu
31	jk13	OptiAlloy 125mu
32	jk14	Sendust 14mu
33	jk15	Sendust 26mu
34	jk16	Sendust 40mu
35	jk17	Sendust 60mu
36	jk18	Sendust 75mu
37	jk19	Sendust 90mu
38	jk20	Sendust 125mu
39	jk21	Sendust 147mu
40	jk22	Sendust 160mu
41	jk23	Sendust HF 26mu
42	jk24	Sendust HF 60mu
43	jk25	Sendust HF 125mu



**Table 13. "Ferrites" Folder - B(H) Curves (51), Core Loss Curves (7)**

Digital B(H) Curves in "Ferrite" Folder (51)		
No.	Id	Material Name
1	Kd01	78 Material at 25 C
2	Kd02	78 Material at 100 C
3	Kd03	79 Material at 25C
4	Kd04	79 Material at 100 C
5	Kd05	95 Material at 25C
6	Kd06	95 Material at 100 C
7	Kd07	97 Material at 25C
8	Kd08	97 Material at 100C
9	Kd09	98 Material at 25C
10	Kd10	98 Material at 100 C
11	Ke01	3C34 25C
12	Ke02	3C34 100C
13	Ke03	3C81 25C
14	Ke04	3C81 100C
15	Ke05	3C90 25C
16	Ke06	3C90 100C
17	Ke07	3C91 25C
18	Ke08	3C91 100C
19	Ke09	3C92 25C
20	Ke10	3C92 100C
21	Ke11	3C93 25C
22	Ke12	3C93100C
23	Ke13	3C94 25C
24	Ke14	3C94 100C
25	Ke15	3C96 25C

No.	Id	Material Name
26	Ke16	3C96 100C
27	KJ01	MP70D 23C
28	KJ02	MP70D 100C
29	KJ03	MQ40D 23C
30	KJ04	MQ40D 80C
31	KJ05	MQ53D 25C
32	KJ06	MQ53D 80C
33	KJ07	NL12D 25C
34	KJ08	NL12D 100C
35	KJ09	NL16D 25C
36	KJ10	NL16D 100C
37	KJ11	NL30S 25C
38	KJ12	NL30S 100C
39	KJ13	NL40S 25C
40	KJ14	NL40S 100C
41	KJ15	NL80S 23C
42	KJ16	NL80S 100C
43	Ki01	F Material 100 C
44	Ki02	Ferrite
45	Ki03	H Material 100 C
46	Ki04	J Material 100 C
47	Ki05	K Material 100 C
48	Ki06	P Material 100 C
49	Ki07	R Material 100 C
50	Ki08	W Material 25C
51	Ki09	W Material 100 C

Digital Core Loss Curves in "Ferrite" Folder (7)		
No.	Id	Material Name
1	ki01	F Material
2	ki02	H Material
3	ki03	J Material
4	ki04	K Material
5	ki05	P Material
6	ki06	R Material
7	ki07	W Material

**Table 14. "GHz Ferrites" Folder - Core Loss Curves (67)**

Digital Core Loss Curves in "GHz Ferrite" Folder (67)					
No.	Id	Material Name	No.	Id	Material Name
1	le01	3B1	35	le35	3S5
2	le02	3B7	36	le36	4A11
3	le03	3B46	37	le37	4A15
4	le04	3C11	38	le38	4A20
5	le05	3C30	39	le39	4B1
6	le06	3C34	40	le40	4B2
7	le07	3C81	41	le41	4B3
8	le08	3C90	42	le42	4C65
9	le09	3C91	43	le43	4D2
10	le10	3C92	44	le44	4E1
11	le11	3C93	45	le45	4E2
12	le12	3C94	46	le46	4F1
13	le13	3C96	47	le47	4M2
14	le14	3D3	48	le48	4S2
15	le15	3E5	49	le49	4S3
16	le16	3E6	50	le50	4S60
17	le17	3E7	51	le51	8C11
18	le18	3E8	52	le52	8C12
19	le19	3E9	53	IJ01	MP70D
20	le20	3E25	54	IJ02	MQ40D
21	le21	3E26	55	IJ03	MQ53D
22	le22	3E27	56	IJ04	NB12D
23	le23	3E28	57	IJ05	NB25S
24	le24	3E55	58	IJ06	NB50S
25	le25	3F3	59	IJ07	NB65S
26	le26	3F4	60	IJ08	NB90S
27	le27	3F5	61	IJ09	NL12D
28	le28	3F35	62	IJ10	NL16D
29	le29	3F45	63	IJ11	NL30S
30	le30	3H3	64	IJ12	NL40S
31	le31	3R1	65	IJ13	NL80S
32	le32	3S1	66	Ip01	IBF10
33	le33	3S3	67	Ip02	IBF15
34	le34	3S4			