

WVS-VORTEX(1),DIO/JSG

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1      TITLE      DIO      00 00001
2      SPACE      00 00002
3      SPACE      00 00003
4      SPACE      00 00004
5      *****00 00005
6      *          00 00006
7      *          00 00007
8      *          00 00008
9      * FUNCTION: TO ALLOW THE USER TO ACCESS DISK FILES WITHOUT USING 00 00009
10     *          00 00010
11     *          00 00011
12     * ENTRY POINTS: DOPEN      OPEN DISK FILE      00 00012
13     *                  DCLOSE    CLOSE DISK FILE    00 00013
14     *                  DREAD     READ DISK FILE     00 00014
15     *                  DWRITE    WRITE DISK FILE    00 00015
16     *          00 00016
17     * EXTERNAL ROUTINES REQUIRED:  SSE      00 00017
18     *          00 00018
19     *          *****00 00019
20     *          SPACE      00 00020
21     *          SPACE      00 00021
22     *          SPACE      00 00022
23     *          NAME      DOPEN,DCLOSE,DREAD,DWRITE 00 00023
24     *          EXT      SSE,VSDB      00 00024
25     *          SPACE      00 00025
26     *          SPACE      00 00026
27     *          SPACE      00 00027
28     * X      SET      1      00 00028
29     * B      SET      2      00 00029
30     *          SPACE      00 00030
31     * BS2     EQU      0423     00 00031
32     * BS8     EQU      0431     00 00032
33     * BS9     EQU      0432     00 00033
34     * BR0     EQU      0441     00 00034
35     * BR1     EQU      0442     00 00035
36     * LHW     EQU      0462     00 00036
37     * RHW     EQU      0463     00 00037
38     * THREE   EQU      0464     00 00038
39     * FIVE    EQU      0465     00 00039
40     * SIX     EQU      0466     00 00040
41     * BM37    EQU      0473     00 00041
42     *          EJECT      00 00042
43     *          *****00 00043
44     *          00 00044
45     *          O P E N   D I S K   F I L E   ( D O P E N ) 00 00045
46     *          00 00046
47     * FUNCTION: TO OPEN A SPECIFIED FILE ON A DISK PARTITION AND SET 00 00047
48     *          UP AN FCB TO REFERENCE THE FILE      00 00048
49     *          00 00049
50     * CALLING SEQUENCE: CALL DOPEN (LUN, IFCB, IBUF, LRECL, IACC, ISW) 00 00050
51     *          00 00051
52     * PARAMETERS: LUN = LOGICAL UNIT NUMBER OF DISK PARTITION 00 00052
53     *                  IFCB = NAME OF 10 WORD FCB      00 00053
54     *                  IFCB(2) = PARTITION KEY      00 00054
55     *                  IFCB(8) = FILE NAME          00 00055
56     *                  IFCB(9) = FILE NAME          00 00056

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57 *          IFCB(10) = FILE NAME *00 00057
58 *          IBUF = NAME OF BUFFER, MUST BE AT LEAST 120 WORDS LONG *00 00058
59 *          LRECL = LENGTH OF RECORDS *00 00059
60 *          IACC = ACCESS METHOD *00 00060
61 *          0 = DIRECT ACCESS BY LOGICAL RECORD *00 00061
62 *          1 = SEQUENTIAL ACCESS BY LOGICAL RECORD *00 00062
63 *          2 = DIRECT ACCESS BY RELATIVE SECTOR NUMBER *00 00063
64 *          3 = SEQUENTIAL ACCESS BY RELATIVE SECTOR *00 00064
65 * *00 00065
66 * RETURN PARAMETERS: ISW = COMPLETION CODE *00 00066
67 *          0 = OPEN SUCCESSFUL *00 00067
68 *          -1 = I/O ERROR DURING OPEN *00 00068
69 *          -2 = DIRECTORY ERROR *00 00069
70 *          -3 = FILE NAME NOT FOUND *00 00070
71 *          -4 = LUN NOT A DISK *00 00071
72 *          -5 = PARAMETER ERROR *00 00072
73 * *00 00073
74 *.....*00 00074
75 *          SPACE *00 00075
76 * DOP1 CALL LUNCHK TEST IF LUN IS VALID *00 00076
77 * DATA (DOPLUN)* *00 00077
78 * JAZ DOP5+1 NO, ERROR, INVALID LUN *00 00078
79 * STA DOPLUN SAVE LUN *00 00079
80 * SPACE *00 00080
81 * LDA DOP3+3 LOAD OP-CODE FROM OPEN MACRO *00 00081
82 * ANA LHW MASK OUT OLD LUN *00 00082
83 * ORA DOPLUN PUT IN NEW LUN *00 00083
84 * STA DOP3+3 STORE LUN & OP-CODE IN OPEN MACRO *00 00084
85 * SPACE *00 00085
86 * LDX DOPFCB LOAD FCB ADDR *00 00086
87 * LDAE* DOPACC LOAD ACCESS METHOD *00 00087
88 * TAB *00 00088
89 * JAN DOP5 ERROR, INVALID PARAMETER *00 00089
90 * SUB BS2 *00 00090
91 * JAP DOP5 ERROR, INVALID PARAMETER *00 00091
92 * LRLB 8 *00 00092
93 * EJECT *00 00093
94 * LDAE* DOPLNG LOAD RECORD LENGTH *00 00094
95 * JAZ DOP5 ERROR, INVALID PARAMETER *00 00095
96 * JAN DOP5 ERROR, INVALID PARAMETER *00 00096
97 * BTBF 9,DOP2 JUMP IF ACCESS BY LOGICAL RECORD *00 00097
98 * SUB DOPTCB TEST IF LENGTH IS 120 *00 00098
99 * JANZ DOP5 NO, ERROR, INVALID PARAMETER *00 00099
100 * LDA DOPTCB *00 00100
101 * DOP2 STA 0,X STORE RECORD LENGTH IN FCB *00 00101
102 * SPACE *00 00102
103 * LDA DOPBUF *00 00103
104 * STA 1,X STORE BUFFER ADDR IN FCB'S *00 00104
105 * STA DOPTCB+1 *00 00105
106 * LDA 2,X *00 00106
107 * ANA RHW GET KEY *00 00107
108 * MERGE 031 OUT USER ACCESS METHOD & KEY TOGETHER *00 00108
109 * STA 2,X STORE IN FCB *00 00109
110 * ANA RHW *00 00110
111 * ORA BS9 SET ACCESS METHOD FOR SEARCH *00 00111
112 * STA DOPTCB+2 *00 00112
113 * SPACE *00 00113

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114 LDA 7,X 00 00114
115 STA DOPTCB+7 00 00115
116 LDA 8,X 00 00116
117 STA DOPTCB+8 MOVE FILE NAME TO TEMP FCB 00 00117
118 LDA 9,X 00 00118
119 STA DOPTCB+9 00 00119
120 STX DOP3*4 STORE USER FCB ADDR IN OPEN MACRO 00 00120
121 SPACE 00 00121
122 CALL SEARCH SEARCH DIRECTORY FOR FILE NAME 00 00122
123 DATA DOPLUN,DOPTCB 00 00123
124 JANZ DOP4 JUMP IF ERRORS 00 00124
125 SPACE 00 00125
126 DOP3 OPEN 0 OPEN FILE 00 00126
127 STAT DOP3,DOP5+2,DOP5+2,DOP5+2,DOP5+2 TEST FOR ERRORS 00 00127
128 DOP4 STAE* DOPI SW STORE COMPLETION CODE 00 00128
129 RETU* DOPEN RETURN 00 00129
130 SPACE 00 00130
131 DOP5 DECR 1 ERROR, INVALID PARAMETER =5 00 00131
132 SUB THREE ERROR, LUN NOT A DISK =4 00 00132
133 DAR ERROR, I/O ERROR -1 00 00133
134 JMP DOP4 00 00134
135 SPACE 00 00135
136 SPACE 00 00136
137 DOPEN ENTRY ENTRY POINT 00 00137
138 CALL SSE,6 TRANSFER PARAMETERS 00 00138
139 DOPLUN BSS 1 ADDR OF LUN 00 00139
140 DOPFCB BSS 1 ADDR OF FCB 00 00140
141 DOPBUF BSS 1 ADDR OF BUFFER 00 00141
142 DOPLNG BSS 1 ADDR OF ACCESS METHOD 00 00142
143 DOPACC BSS 1 ADDR OF RECORD LENGTH 00 00143
144 DOPI SW BSS 1 ADDR OF ISW 00 00144
145 JMP DOP1 00 00145
146 SPACE 00 00146
147 SPACE 00 00147
148 DOPTCB FCB 120,0,2 TEMP FCB 00 00148
149 EJECT 00 00149
150 *****00 00150
151 * 00 00151
152 * CLOSE DISK FILE (DCLOSE) 00 00152
153 * 00 00153
154 * FUNCTION: TO CLOSE A DISK FILE AND UPDATE THE CURRENT END OF 00 00154
155 * FILE POSITION 00 00155
156 * 00 00156
157 * CALLING SEQUENCE: CALL DCLOSE (LUN, IFCB, IBUF, ISW) 00 00157
158 * 00 00158
159 * PARAMETERS: LUN = LOGICAL UNIT NUMBER OF DISK PARTITION 00 00159
160 * IFCB = NAME OF 10 WORD FCB, SET UP BY DOPEN ROUTINE 00 00160
161 * IBUF = NAME OF BUFFER, MUST BE AT LEAST 120 WORDS LONG 00 00161
162 * 00 00162
163 * RETURN PARAMETERS: ISW = COMPLETION CODE 00 00163
164 * 0 = CLOSE SUCCESSFUL 00 00164
165 * -1 = I/O ERROR DURING CLOSE 00 00165
166 * -2 = DIRECTORY ERROR 00 00166
167 * -3 = FILE NAME NOT FOUND 00 00167
168 * -4 = LUN NOT A DISK 00 00168
169 * 00 00169
170 *****00 00170

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171          SPACE                                00 00171
172 DCL1     CALL      LUNCHK                     TEST IF LUN IS VALID 00 00172
173          DATA    (DCLLUN)*                  00 00173
174          JAZ      DCL4                       NO, ERROR, INVALID LUN 00 00174
175          STA      DCLLUN                     SAVE LUN              00 00175
176          SPACE                                00 00176
177          LDA      DCL2+3                     LOAD OP-CODE FROM CLOSE MACRO 00 00177
178          ANA      LHW                       MASK OUT OLD LUN      00 00178
179          ORA      DCLLUN                     PUT IN NEW LUN        00 00179
180          STA      DCL2+3                     STORE LUN & OP-CODE IN CLOSE MACRO 00 00180
181          SPACE                                00 00181
182          LDX      DCLFCB                     LOAD FCB ADDR         00 00182
183          LDA      7,X                        00 00183
184          STA      DCLTCB+7                   00 00184
185          LDA      8,X                        MOVE FILE NAME TO TEMP FCB 00 00185
186          STA      DCLTCB+8                   00 00186
187          LDA      9,X                        00 00187
188          STA      DCLTCB+9                   00 00188
189          LDA      2,X                        00 00189
190          ANA      RHW                       MOVE FILE KEY TO TEMP FCB 00 00190
191          ORA      BS9                        00 00191
192          STA      DCLTCB+2                   00 00192
193          LDA      DCLBUF                     00 00193
194          STA      DCLTCB+1                   STORE BUFFER ADDR IN FCB'S 00 00194
195          STA      1,X                        00 00195
196          STX      DCL2+4                     STORE FCB ADDR IN CLOSE MACRO 00 00196
197          SPACE                                00 00197
198          CALL     SEARCH                     SEARCH DIRECTORY FOR FILE NAME 00 00198
199          DATA    DCLLUN,DCLTCB              00 00199
200          JANZ     DCL3                       JUMP IF ERROR         00 00200
201 DCL2     CLOSE    0,0,0,1                   CLOSE FILE WITH UPDATE 00 00201
202          STAT    DCL2,DCL4+1,DCL4+1,DCL4+1,DCL4+1 TEST FOR ERRORS 00 00202
203          SPACE                                00 00203
204 DCL3     STAE*   DCLISW                     STORE COMPLETION CODE 00 00204
205          RETU*   DCLOSE                     RETURN                 00 00205
206          SPACE                                00 00206
207 DCL4     SUB      THREE                     ERROR, LUN NOT A DISK   -4 00 00207
208          DAR      ERROR, I/O ERROR          -1 00 00208
209          JMP      DCL3                       00 00209
210          SPACE                                00 00210
211          SPACE                                00 00211
212 DCLOSE   ENTRY   ENTRY POINT               00 00212
213          CALL     SSE,4                     TRANSFER PARAMETERS    00 00213
214 DCLLUN   BSS      1                         ADDR OF LUN            00 00214
215 DCLFCB   BSS      1                         ADDR OF FCB            00 00215
216 DCLBUF   BSS      1                         ADDR OF BUFFER         00 00216
217 DCLISW   BSS      1                         ADDR OF ISW            00 00217
218          JMP      DCL1                       00 00218
219          SPACE                                00 00219
220          SPACE                                00 00220
221 DCLTCB   FCB      120,0,2                   TEMP FCB               00 00221
222          EJECT                                00 00222
223          *****00 00223
224          *00 00224
225          *          R E A D   D I S K   F I L E   ( D R E A D ) *00 00225
226          *00 00226
227          * FUNCTION: TO READ A RECORD FROM A DISK FILE *00 00227

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228 *                                *00 00228
229 * CALLING SEQUENCE:  CALL DREAD (LUN, IFCB, IBUF, ISW) *00 00229
230 *                                *00 00230
231 * PARAMETERS:  LUN = LOGICAL UNIT NUMBER OF DISK PARTITION *00 00231
232 *                IFCB = NAME OF 10 WORD FCB, SET UP BY DOPEN ROUTINE *00 00232
233 *                IBUF = NAME OF BUFFER *00 00233
234 *                                *00 00234
235 * RETURN PARAMETERS:  ISW = COMPLETION CODE *00 00235
236 *                >0 = NUMBER OF WORDS ACTUALLY READ *00 00236
237 *                -1 = I/O ERROR *00 00237
238 *                -2 = END OF FILE *00 00238
239 *                -3 = END OF DEVICE *00 00239
240 *                -4 = LUN NOT A DISK *00 00240
241 *                                *00 00241
242 *.....*00 00242
243 * SPACE *00 00243
244 DRD1  CALL  LUNCHK      TEST IF LUN IS VALID *00 00244
245 * DATA  (DRDLUN)* *00 00245
246 * JAZ    DRDR          NO, ERROR, IN LUN IS NOT A DISK *00 00246
247 * STA    DRD2+3       STORE LUN IN READ MACRO *00 00247
248 * SPACE *00 00248
249 * LDX    DRDFCB       LOAD FCB ADDR *00 00249
250 * LDA    DRDBUF *00 00250
251 * STA    1,X          STORE BUFFER ADDR IN FCB *00 00251
252 * STX    DRD2+4       STORE FCB ADDR IN READ MACRO *00 00252
253 * TZA *00 00253
254 * SPACE *00 00254
255 DRD2  READ  0          READ A RECORD *00 00255
256 * STAT  DRD2,DRDR+3,DRDR+2,DRDR+1,DRDR+3  TEST FOR ERRORS *00 00256
257 * LDAE  DRD2+5       NO ERRORS, LOAD ACTUAL LENGTH *00 00257
258 * JMP   DRD3 *00 00258
259 * EJECT *00 00259
260 DRDR  DAR          ERROR, LUN NOT A DISK      -4 *00 00260
261 * DAR   *00 00261
262 * DAR   ERROR, END OF DEVICE      -3 *00 00262
263 * DAR   ERROR, END OF FILE      -2 *00 00263
264 * DAR   ERROR, I/O ERROR        -1 *00 00264
264 DRD3  STAE* DRDISW   STORE COMPLETION CODE *00 00264
265 * RETU* DREAD      RETURN *00 00265
266 * SPACE *00 00266
267 * SPACE *00 00267
268 DREAD BES  0          ENTRY POINT *00 00268
269 * CALL  $SE,4       TRANSFER PARAMETERS *00 00269
270 DRDLUN BSS  1          ADDR OF LUN *00 00270
271 DRDFCB BSS  1          ADDR OF FCB *00 00271
272 DRDBUF BSS  1          ADDR OF BUFFER *00 00272
273 DRDISW BSS  1          ADDR OF ISW *00 00273
274 * JMP   DRD1 *00 00274
275 * EJECT *00 00275
276 *.....*00 00276
277 *                                *00 00277
278 *          W R I T E   D I S K   F I L E   ( D W R I T E ) *00 00278
279 *                                *00 00279
280 * FUNCTION;  TO WRITE A RECORD TO A DISK FILE *00 00280
281 *                                *00 00281
282 * CALLING SEQUENCE:  CALL DWRITE (LUN, IFCB, IBUF, ISW) *00 00282
283 *                                *00 00283
284 * PARAMETERS:  LUN = LOGICAL UNIT NUMBER OF DISK PARTITION *00 00284

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285 *          IFCB = NAME OF 10 WORD FCB, SET UP BY DOPEN ROUTINE *00 00285
286 *          IBUF = NAME OF BUFFER *00 00286
287 * *00 00287
288 * RETURN PARAMETERS: ISW = COMPLETION CODE *00 00288
289 *          >0 = NUMBER OF WORDS ACTUALLY WRITTEN *00 00289
290 *          -1 = I/O ERROR *00 00290
291 *          -2 = END OF FILE *00 00291
292 *          -3 = END OF DEVICE *00 00292
293 *          -4 = LUN NOT A DISK *00 00293
294 * *00 00294
295 *.....*00 00295
296 *          SPACE *00 00296
297 DWR1 CALL LUNCHK CHECK FOR VALID LUN *00 00297
298 *          DATA (DWRLUN)* *00 00298
299 *          JAZ DWRER ERROR, INVALID LUN *00 00299
300 *          ORA BS8 SET OP-CODE TO WRITE *00 00300
301 *          STA DWR2+3 STORE LUN & OP-CODE IN WRITE MACRO *00 00301
302 *          SPACE *00 00302
303 *          LDX DWRFCB LOAD ADDR OF FCB *00 00303
304 *          LDA DWRBUF *00 00304
305 *          STA 1,X STORE BUFFER ADDR IN FCB *00 00305
306 *          STX DWR2+4 STORE FCB ADDR IN WRITE MACRO *00 00306
307 *          TZA CLEAR ERROR FLAG *00 00307
308 *          SPACE *00 00308
309 DWR2 WRITE 0 WRITE RECORD *00 00309
310 *          STAT DWR2,DWRER+3,DWRER+2,DWRER+1,DWRER+3 TEST FOR ERRORS *00 00310
311 *          LDAE DWR2+5 NO ERRORS, LOAD ACTUAL LENGTH *00 00311
312 *          JMP DWR3 *00 00312
313 *          EJECT *00 00313
314 DWRER DAR ERROR, LUN NOT A DISK -4 *00 00314
315 *          DAR ERROR, END OF DEVICE -3 *00 00315
316 *          DAR ERROR, END OF FILE -2 *00 00316
317 *          DAR ERROR, I/O ERROR -1 *00 00317
318 DWR3 STAE* DWRISW STORE RETURN CODE *00 00318
319 *          RETU* DWRITE RETURN *00 00319
320 *          SPACE *00 00320
321 *          SPACE *00 00321
322 DWRITE BES 0 ENTRY POINT *00 00322
323 *          CALL SSE,4 TRANSFER PARAMETERS *00 00323
324 DWRLUN BSS 1 ADDR OF LUN *00 00324
325 DWRFCB BSS 1 ADDR OF FCB *00 00325
326 DWRBUF BSS 1 ADDR OF BUFFER *00 00326
327 DWRISW BSS 1 ADDR OF ISW *00 00327
328 *          JMP DWR1 *00 00328
329 *          EJECT *00 00329
330 *.....*00 00330
331 * *00 00331
332 * SEARCH DIRECTORY (SEARCH) *00 00332
333 * *00 00333
334 * FUNCTION; TO SEARCH A FILE DIRECTORY FOR A GIVEN FILE NAME *00 00334
335 * *00 00335
336 * ENTRY; NO SPECIAL CONDITIONS *00 00336
337 * *00 00337
338 * CALLING SEQUENCE; CALL SEARCH *00 00338
339 *          DATA ADDR OF LUN *00 00339
340 *          DATA ADDR OF FCB *00 00340
341 * *00 00341

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342 * EXIT: A = 0 IF NAME FOUND *00 00342
343 * *00 00343
344 * ERRORS: A = -1 IF I/O ERROR *00 00344
345 * A = -2 IF DIRECTORY ERROR *00 00345
346 * A = -3 IF FILE NAME NOT FOUND *00 00346
347 * *00 00347
348 *.....*00 00348
349 SPACE 00 00349
350 SRCH1 LD BE+ SRCHLN LOAD LUN 00 00350
351 STB SRCH3+3 STORE LUN IN READ MACRO 00 00351
352 LDA SRCH2+3 LOAD OP-CODE FROM REW MACRO 00 00352
353 ANA LHW MASK OUT OLD LUN 00 00353
354 MERGE Q31 PUT IN NEW LUN 00 00354
355 STA SRCH2+3 STORE LUN & OP-CODE IN REW MACRO 00 00355
356 LDA SRCHCB LOAD FCB ADDR 00 00356
357 STA SRCH2+4 STORE FCB ADDR IN REW MACRO 00 00357
358 STA SRCH3+4 STORE FCB ADDR IN READ MACRO 00 00358
359 SPACE 00 00359
360 SRCH2 REW 0 REWIND LUN 00 00360
361 SPACE 00 00361
362 LDX SRCHCB LOAD FCB ADDR 00 00362
363 INCR 1 00 00363
364 STA 5,X SET FILE START ADDR TO 1 00 00364
365 EJECT 00 00365
366 SRCH3 READ 0 READ A DIRECTORY SECTOR 00 00366
367 STAT SRCH3,SRCHER,SRCHER,SRCHER,SRCHER TEST FOR ERRORS 00 00367
368 SPACE 00 00368
369 LDX SRCHCB LOAD FCB ADDR 00 00369
370 LDB 1,X LOAD BUFFER ADDR 00 00370
371 LDA 0,B LOAD COUNT OF ENTRIES IN SECTOR 00 00371
372 JAZ SRCHNF ERROR, FILE NAME NOT FOUND 00 00372
373 JAN SRCHDR ERROR, DIRECTORY STRUCTURE ERROR 00 00373
374 SUB D20 00 00374
375 JAP SRCHDR ERROR, DIRECTORY STRUCTURE ERROR 00 00375
376 TBA 00 00376
377 ADD FIVE GET ADDR OF FIRST ENTRY 00 00377
378 STA SRCHPT SAVE BUFFER POINTER 00 00378
379 SPACE 00 00379
380 SRCH4 TAB 00 00380
381 LDA 0,B LOAD FIRST WORD OF ENTRY 00 00381
382 JAZ SRCH5 ENTRY DELETED, TEST NEXT ENTRY 00 00382
383 DAR TEST IF DIRECTORY EOF 00 00383
384 JAZ SRCHNF YES, ERROR, FILE NAME NOT FOUND 00 00384
385 SPACE 00 00385
386 TBA 00 00386
387 SUB FIVE 00 00387
388 SUB 1,X CALC ENTRY NUMBER 00 00388
389 LLSR 16 00 00389
390 DIV SIX 00 00390
391 TBA 00 00391
392 LDB 1,X LOAD BUFFER ADDR 00 00392
393 SUB 0,B TEST IF LAST ENTRY 00 00393
394 JAZ SRCH6 YES, SHOULD BE DIRECTORY LINK 00 00394
395 EJECT 00 00395
396 LDB SRCHPT LOAD BUFFER POINTER 00 00396
397 LDA 0,B LOAD FIRST WORD OF ENTRY 00 00397
398 JAP SRCHDR ERROR, DIRECTORY STRUCTURE ERROR 00 00398

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399	ERA	7,X
400	JANZ	SRCHS
401	LDA	1,B
402	ERA	8,X
403	JANZ	SRCHS
404	LDA	2,B
405	ERA	9,X

TEST IF FILE NAME MATCHES ENTRY
NO, TEST NEXT ENTRY

00 00399
 00 00400
 00 00401
 00 00402
 00 00403
 00 00404

TEST IF SECOND WORD MATCHES
NO, TEST NEXT ENTRY

TEST IF THIRD WORD MATCHES

00 004/K@@L

SPECIFICATION 1. NO END OF IMAGES IN ELEMENT

CPU:0100 CTP:009 SUPS:2,441

@HDG,P

SOURCE DECK: 181

FORTDISK/JSG

@PRT,S PFPFILE.FORTDISK/JSG
 FURPUR 27-S 08/16/78 10:09:49