```
SEQ PG LIN  LABEL  OP    OPERANDS                                            SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

101                JOB   TEST THE MACROS. FIRST, CLRTOP USING DSA
102         PHASID EQU   110                                                         0110
103         *
104         CLRBOT EQU   *                                                           0332
105         CLRTPX DSA   CLRTOP                                                   3  0335  432                1   432
106         CLRTOP EQU   432                                                         0432
107         *
108         * CLRTOP USING DSA
109         *
110         CLR2   CLRV  CLRBOT,CLRTPX                                                                 MACRO
            *                                                                                      GEN
            * CLEAR CORE AFTER A PHASE USING CLRTOP IN A VARIABLE                                  GEN
            *                                                                                      GEN
111                ORG   CLRBOT&X00                                                     0400
112         )0R001 EQU   *           CLRBOT & X00 - 1                                    0399              GEN
113                ORG   201                                                            0201
            *                                                                                      GEN
            * CLEAR DOWN TO CLRBOT & X00 THE EASY WAY                                              GEN
            *                                                                                      GEN
114         CLR2   MCW   CLRTPX,)0J001&3   MOVE CLRTOP TO CS                      7  0201  M 335 211   GEN      2   335     211
115         )0J001 CS    0-0         CLEAR FROM *CLRTOP                           4  0208  / 000       GEN      2   000
116                SBR   )0J001&3                                                 4  0212  H 211       GEN      2   211
117                SBR   )0L001&6                                                 4  0216  H 268       GEN      2   268
118                C     )0J001&3,)0M001   DOWN TO CLRBOT & X00?                  7  0220  C 211 279   GEN      2   211     279
119                BU    )0J001                                                   5  0227  B 208 /     GEN      2   208
            *                                                                                      GEN
            * NOW CLEAR DOWN TO CLRBOT THE HARD WAY                                                GEN
            *                                                                                      GEN
120         )0K001 C     )0L001&6,CLRBOT                                          7  0232  C 268 332   GEN      2   268     332
121                BU    )0L001                                                   5  0239  B 262 /     GEN      3   262
122                SBR   TPREAD&6,1  RESET THE LOADER AFTER BTWN                  7  0244  H 714 001   GEN      3   714     001
123                SBR   LOADEX&3      CHANGED IT TO LOAD ME                      4  0251  H 724       GEN      3   724
124                CS    LOADNX,)0Q001  LOAD THE NEXT BLOCK                       7  0255  / 700 281   GEN      3   700     281
125         )0L001 LCA   )0P001,0-0     CLEAR WITH BLANK AND WORD MARK            7  0262  L 280 000   GEN      3   280     000
126                SBR   )0L001&6                                                 4  0269  H 268       GEN      3   268
127                B     )0K001                                                   4  0273  B 232       GEN      3   232
128         )0M001 DSA   )0R001         CLRBOT & X00 - 1                          3  0279  399         GEN      4   399
129         )0P001 DCW   #1                                                       1  0280              GEN      4
130         )0Q001 DCW   @}@                                                      1  0281              GEN      4
131                DC    @CLRV @     IDENTIFY IT IN A DECK OR ON TAPE             5  0286              GEN      4
132                ORG   *&1                                                            0288
133                DSA   201         FOR THE TAPE GENERATOR                       3  0290  201         GEN      5   201
134                EX    CLR2       PROHIBITED IN A MACRO                                  B 201                5   201
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SEQ PG LIN  LABEL  OP    OPERANDS                                      SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

135               JOB   SHORTER LOADER IN PHASE ZERO WITHOUT CLEAR HERE
136         *
137         * THE DEFAULT IS TO LOAD A BLOCK AT 1 AND BRANCH TO IT, ASSUMING
138         * IT'S A LOAD BLOCK OR AN AUTOCODER TAPE RECORD. TO LOAD OTHER
139         * BLOCKS, THE LOAD BLOCK CHANGES THE TPREAD AND LOADEX ADDRESSES,
140         * AND THEN CHANGES THEM BACK.
141         *
142               ORG   700                                                        0700
143     700 LOADNX R     40         CARD OVERLAY UNLESS NOP OR SW           4  0700  1 040              6   040
144     704 RDAGIN ZA    ECOUNT        INITIALIZE ERROR COUNT               4  0704  ? 755              6   755
145     708 TPREAD RTW   1,1        LOAD OVERLAY FROM TAPE                  8  0708  L %U1 001 R        6   %U1     001
146     716        BER   TPERR      ERROR?                                  5  0716  B 725 L            6   725
147     721 LOADEX B     1          NO, RUN THE OVERLAY                     4  0721  B 001              6   001
148     725 TPERR  BSP   1                                                  5  0725  U %U1 B            6   %U1
149     730        A     *-6,ECOUNT                                         7  0730  A 730 755          6   730     755
150     737        BCE   TPREAD,ECOUNT-1,0  NOT TEN YET?                    8  0737  B 708 754 0        7   708     754
151     745        NOP   3333       TOO MANY TAPE ERRORS                    4  0745  N C33              7  3333
152     749        H                                                        1  0749  .                  7
153     750        B     RDAGIN     READ AGAIN                              4  0750  B 704              7   704
154     755 ECOUNT DCW   #2                                                 2  0755                     7
155         *
156         * START HERE. SET UP THE LOADER AND LOAD PHASE 1.
157         *
158     756 BEGIN1 BCE   LOADNX,1,    LOADED FROM CARDS?                    8  0756  B 700 001          7   700     001
159     764        MCW   NOP1,LOADNX  NO, TURN OFF CARD OVERLAY             7  0764  M 790 700          7   790     700
160     771        BCE   LOADNX,1,B   LOADED FROM TAPE BLOCKS?              8  0771  B 700 001 B        8   700     001
161     779        MCW   COMMA,LOADNX  NO, LOADED FROM AUTOCODER TAPE       7  0779  M 791 700          8   791     700
162     786        B     LOADNX                                             4  0786  B 700              8   700
163     790 NOP1   NOP                                                      1  0790  N                  8
164     791 COMMA  SW                                                       1  0791  ,                  8
165               ORG   *&X00                                                      0800
166     800 GMWM1  DCW   @}@                                                1  0800            GMARK    9
167         * A LOAD ADDRESS FOR COMPILER_GEN IS NOT NEEDED FOR BLOCK 1
168               EX    BEGIN1                                                    B 756              9   756
169         *
170         * GENERATE A CLEAR BLOCK FROM BEGIN1 TO GMWM1
171         *
172         BTW1   BTWN                                                                        MACRO
            *                                                                                  GEN
            * LOAD THE NEXT BLOCK AT 1 FROM TAPE OR 201 FROM CARDS AND BRANCH                  GEN
            * TO IT. PUT THIS BEFORE NEWPH, CLRA, AND CLRV. DON'T PUT IT                       GEN
            * ANYWHERE ELSE BECAUSE IT LEAVES TPREAD&6 AND LOADEX&3 EQUAL TO                   GEN
            * 201. THIS BLOCK CAN BE LOADED AND RUN ANYWHERE BECAUSE IT                        GEN
            * DOESN'T HAVE ANY REFERENCES TO ITSELF. LOADNX DEFAULTS TO LOAD                   GEN
            * IT AT 1 AND BRANCH TO 1.                                                         GEN
            *                                                                                  GEN
173               ORG   201                                                        0201
174         BTW1   BCE   LOADNX,LOADNX,   LOADING FROM CARDS?               8  0201  B 700 700   GEN   10   700     700
175                BCE   LOADNX,LOADNX,,  LOADING FROM AUTOCODER TAPE?      8  0209  B 700 700 , GEN   10   700     700
176                SBR   TPREAD&6,201                                       7  0217  H 714 201   GEN   10   714     201
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

177                SBR   LOADEX&3                                               4  0224  H 724       GEN     10   724
178                B     LOADNX           LOAD THE NEXT INTERPHASE BLOCK        4  0228  B 700       GEN     10   700
179                DCW   @ BTWN @         IDENTIFY IT IN A DECK OR ON TAPE      6  0237              GEN     10
180                DCW   @}@                                                    1  0238              GEN     10
181                ORG   *&1                                                            0240
182                DSA   201              FOR THE TAPE GENERATOR                3  0242  201         GEN     11   201
183                EX    BTW1                                                          B 201               11   201
184         CLR1   CLRA  BEGIN1,GMWM1                                                                MACRO
            *                                                                                        GEN
            * CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS                                      GEN
            *                                                                                        GEN
185                ORG   BEGIN1&X00                                                     0800
186         )0R003 EQU   *           CLRBOT & X00 - 1                              0799              GEN
187                ORG   201                                                            0201
            *                                                                                        GEN
            * CLEAR DOWN TO CLRBOT & X00 THE EASY WAY                                                GEN
            *                                                                                        GEN
188         CLR1   EQU   *                                                         0200              GEN
189         )0J003 CS    GMWM1          CLEAR FROM CLRTOP                       4  0201  / 800       GEN     12   800
190                SBR   )0J003&3                                               4  0205  H 204       GEN     12   204
191                SBR   )0L003&6                                               4  0209  H 261       GEN     12   261
192                C     )0J003&3,)0M003   DOWN TO CLRBOT & X00?                7  0213  C 204 272   GEN     12   204     272
193                BU    )0J003                                                 5  0220  B 201 /     GEN     12   201
            *                                                                                        GEN
            * NOW CLEAR DOWN TO CLRBOT THE HARD WAY                                                  GEN
            *                                                                                        GEN
194         )0K003 C     )0L003&6,BEGIN1                                        7  0225  C 261 756   GEN     12   261     756
195                BU    )0L003                                                 5  0232  B 255 /     GEN     12   255
196                SBR   TPREAD&6,1  RESET THE LOADER AFTER BTWN                7  0237  H 714 001   GEN     13   714     001
197                SBR   LOADEX&3      CHANGED IT TO LOAD ME                    4  0244  H 724       GEN     13   724
198                CS    LOADNX,)0Q003  LOAD THE NEXT BLOCK AT 1                7  0248  / 700 274   GEN     13   700     274
199         )0L003 LCA   )0P003,0-0     CLEAR WITH BLANK AND WORD MARK          7  0255  L 273 000   GEN     13   273     000
200                SBR   )0L003&6                                               4  0262  H 261       GEN     13   261
201                B     )0K003                                                 4  0266  B 225       GEN     13   225
202         )0M003 DSA   )0R003         CLRBOT & X00 - 1                        3  0272  799         GEN     13   799
203         )0P003 DCW   #1                                                     1  0273              GEN     14
204         )0Q003 DCW   @}@                                                    1  0274              GEN     14
205                DC    @CLRA @     IDENTIFY IT IN A DECK OR ON TAPE           5  0279              GEN     14
206                ORG   *&1                                                            0281
207                DSA   201         FOR THE TAPE GENERATOR                     3  0283  201         GEN     15   201
208                EX    CLR1       PROHIBITED IN A MACRO                              B 200               15   200
209         *
210         * GENERATE THE BLOCK TO LOAD PHASE 1
211         *
212         BTW2   BTWN                                                                              MACRO
            *                                                                                        GEN
            * LOAD THE NEXT BLOCK AT 1 FROM TAPE OR 201 FROM CARDS AND BRANCH                        GEN
            * TO IT. PUT THIS BEFORE NEWPH, CLRA, AND CLRV. DON'T PUT IT                             GEN
            * ANYWHERE ELSE BECAUSE IT LEAVES TPREAD&6 AND LOADEX&3 EQUAL TO                         GEN
            * 201. THIS BLOCK CAN BE LOADED AND RUN ANYWHERE BECAUSE IT                              GEN
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

            * DOESN'T HAVE ANY REFERENCES TO ITSELF. LOADNX DEFAULTS TO LOAD                          GEN
            * IT AT 1 AND BRANCH TO 1.                                                                GEN
            *                                                                                         GEN
213                ORG   201                                                       0201
214         BTW2   BCE   LOADNX,LOADNX,   LOADING FROM CARDS?                 8  0201  B 700 700   GEN     16   700     700
215                BCE   LOADNX,LOADNX,,  LOADING FROM AUTOCODER TAPE?        8  0209  B 700 700 , GEN     16   700     700
216                SBR   TPREAD&6,201                                         7  0217  H 714 201   GEN     16   714     201
217                SBR   LOADEX&3                                             4  0224  H 724       GEN     16   724
218                B     LOADNX           LOAD THE NEXT INTERPHASE BLOCK      4  0228  B 700       GEN     16   700
219                DCW   @ BTWN @         IDENTIFY IT IN A DECK OR ON TAPE    6  0237              GEN     16
220                DCW   @}@                                                  1  0238              GEN     16
221                ORG   *&1                                                       0240
222                DSA   201              FOR THE TAPE GENERATOR              3  0242  201         GEN     17   201
223                EX    BTW2       PROHIBITED IN A MACRO                              B 201               17   201
224         PHAS1  NEWPH  @PHASE1@,BEGIN2,BEGIN2                                                  MACRO
            *                                                                                         GEN
            * LOAD A NEW PHASE                                                                        GEN
            *                                                                                         GEN
225                ORG   201                                                       0201
226         PHAS1  LCA   )0N005,PHASID                                        7  0201  L 268 110   GEN     18   268     110
227                BCE   LOADNX,LOADNX,   LOADING FROM CARDS?                 8  0208  B 700 700   GEN     18   700     700
228                BCE   LOADNX,LOADNX,,  LOADING FROM AUTOCODER TAPE?        8  0216  B 700 700 , GEN     18   700     700
229                SBR   TPREAD&6,BEGIN2     SETUP TO READ BLOCK              7  0224  H 714 756   GEN     18   714     756
230                SBR   LOADEX&3,*&4     SETUP TO COME BACK HERE             7  0231  H 724 241   GEN     18   724     241
231                B     LOADNX                                               4  0238  B 700       GEN     19   700
232                SBR   TPREAD&6,1       SETUP TO READ NEXT BLOCK AT 1       7  0242  H 714 001   GEN     19   714     001
233                SBR   LOADEX&3,1       SETUP TO ENTER NEXT BLOCK AT 1      7  0249  H 724 001   GEN     19   724     001
234                CS    BEGIN2,)0P005          ENTER THIS BLOCK              7  0256  / 756 269   GEN     19   756     269
235         )0N005 DCW   @PHASE1@              THE PHASE ID FROM PARAMETER 1  6  0268              GEN     19
236         )0P005 DCW   @}@                                                  1  0269              GEN     19
237                DCW   @ NEWPH @        IDENTIFY IT IN A DECK OR ON TAPE    7  0276              GEN     19
238                ORG   *&1                                                       0278
239                DSA   201              FOR THE TAPE GENERATOR              3  0280  201         GEN     20   201
240                EX    PHAS1      PROHIBITED IN A MACRO                              B 201               20   201
241                ORG   BEGIN1                                                    0756
242         *
243         * BEGIN PHASE 1: READ AND CHECK PARAMETER CARD
244         *
245     853 BEGIN2 CS    80                                                   4  0756  / 080               21   080
246                END                                                                 / 080 080                080
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J001	0208: 0	)0J003	0201: 0	)0K001	0232: 0	)0K003	0225: 0	)0L001	0262: 0	)0L003	0255: 0
)0M001	0279: 0	)0M003	0272: 0	)0N005	0268: 0	)0P001	0280: 0	)0P003	0273: 0	)0P005	0269: 0
)0Q001	0281: 0	)0Q003	0274: 0	)0R001	0399: 0	)0R003	0799: 0	BEGIN1	0756: 0	BEGIN2	0756: 0
BTW1	0201: 0	BTW2	0201: 0	CLR1	0200: 0	CLR2	0201: 0	CLRBOT	0332: 0	CLRTOP	0432: 0
CLRTPX	0335: 0	COMMA	0791: 0	ECOUNT	0755: 0	GMWM1	0800: 0	LOADEX	0721: 0	LOADNX	0700: 0
NOP1	0790: 0	PHAS1	0201: 0	PHASID	0110: 0	RDAGIN	0704: 0	TPERR	0725: 0	TPREAD	0708: 0