

CLEAR STORAGE 1 ,008015,022026,030037,044,049,053053N000000N00001026 1
CLEAR STORAGE 2 L068116,105106,110117B101/I9Z#071029C029056B026/B001/0991,001/001117I0? 2
BOOTSTRAP ,008015,022029,036040,047054,061068,072/061039 ,0010011040 3

FORTRAN COMPILER -- PHASES 00-01 00004 PAGE 1

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
101				JOB	FORTRAN COMPILER -- PHASES 00-01								
102				CTL	6611								
103			*										
104			* PHASE 0:		SNAPSHOT AND OVERLAY LOADER PHASE.								
105			*										
106				ORG	81				0081				
107	83			DC	#3 SAVE	3		0083				4	
108	86			DC	#3 AREAS	3		0086				4	
109	89	X1		DCW	@000@	3		0089				4	
110			XXXXX1	EQU	X1 FOR USE IN SFX REGIONS			0089					
111	91			DC	@00@	2		0091				4	
112	94	X2		DCW	@000@	3		0094				4	
113			XXXXX2	EQU	X2 FOR USE IN SFX REGIONS			0094					
114	96			DC	@00@	2		0096				4	
115	99	X3		DCW	@000@	3		0099				4	
116			XXXXX3	EQU	X3 FOR USE IN SFX REGIONS			0099					
117	104			DC	@0 @	5		0104				4	
118	110		PHASID	DCW	@LOADER@ PHASE ID, FOR SNAPSHOT	6		0110				4	
119	111			DCW	#1 WM CLEARED IF DO STATEMENT APPEARS	1		0111				5	
120	112			DCW	#1 WM CLEARED IF DO STATEMENT APPEARS	1		0112				5	
121	113			DCW	#1 WM CLEARED IF DO STATEMENT APPEARS	1		0113				5	
122	114			DCW	#1 WM CLEARED WHEN AN I/O LIST OF DO IS PROCESSED	1		0114				5	
123	115			DCW	#1 WM CLEARED IF I/O LIST AND NOT LIMITED FORMAT	1		0115				5	
124	116		SUBSCR	DCW	#1 WM CLEARED IF SUBSCRIPT CODE NEEDED	1		0116				5	
125	117		SERIES	DCW	#1 NEED SERIES ROUTINE IF NO WM	1		0117				5	
126	118		SINCOS	DCW	#1 SAW SINF OR COSF IF NO WM	1		0118				6	
127	119		LOGF	DCW	#1 SAW LOGF IF NO WM	1		0119				6	
128	120		EXPF	DCW	#1 SAW EXPF IF NO WM	1		0120				6	
129	121			DCW	#1 SAW ATANF IF NO WM	1		0121				6	
130	122		SAWABS	DCW	#1 SAW ABSF IF NO WM	1		0122				6	
131	123		SAWNEG	DCW	#1 SAW NEGATION OPERATOR (UNARY MINUS) IF NO WM	1		0123				6	
132	124		XFIXF	DCW	#1 SAW XFIXF IF NO WM	1		0124				6	
133	125		FLOATF	DCW	#1 SAW FLOATF IF NO WM	1		0125				7	
134	126			DCW	#1 SAW SQRTF IF NO WM	1		0126				7	
135	127			DCW	#1 SAW USER FUNCTION R IF NO WM	1		0127				7	
136	128			DCW	#1 SAW USER FUNCTION U IF NO WM	1		0128				7	
137	129			DCW	#1 SAW USER FUNCTION P IF NO WM	1		0129				7	
138	130			DCW	#1 SAW USER FUNCTION W IF NO WM	1		0130				7	
139	131			DCW	#1 SAW USER FUNCTION Y IF NO WM	1		0131				7	
140	132			DCW	#1 SAW USER FUNCTION Z IF NO WM	1		0132				8	
141	133			DCW	#1 SAW USER FUNCTION J IF NO WM	1		0133				8	
142	134			DCW	#1 SAW USER FUNCTION K IF NO WM	1		0134				8	
143	135			DCW	#1 SAW USER FUNCTION L IF NO WM	1		0135				8	
144	136			DCW	#1 SAW USER FUNCTION M IF NO WM	1		0136				8	
145	137			DCW	#1 SAW USER FUNCTION D IF NO WM	1		0137				8	
146	138			DCW	#1 SAW USER FUNCTION H IF NO WM	1		0138				8	
147	139			DCW	#1 SAW XLINKF IF NO WM	1		0139				9	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION TYPE	CARD	A-ADDR	B-ADDR
148	142		NEGAR2	DCW	#3 LOOKS LIKE NEGARY -- SEE PHASE 20	3		0142			9	
149	145		TBLBOT	DCW	#3 ONE BELOW NUMBERS, FORMATS, I/O LISTS	3		0145			9	
150	148		SEQTAB	DCW	#3 BOTTOM OF SEQUENCE NUMBER TABLE - 2	3		0148			9	
151	151		DOCNT	DCW	#3 COUNT OF DO STATEMENTS	3		0151			9	
152	154		BOTFMT	DCW	#3 BOTTOM OF FORMAT STRINGS OR NUMBER TABLE - 1	3		0154			9	
153	157		NEGAR3	DCW	#3 LOOKS LIKE NEGARY -- SEE PHASE 20	3		0157			9	
154	160		ARYSIZ	DCW	#3 TOTAL ARRAY SIZE & 2	3		0160			10	
155	163		NEGARY	DCW	#3 16000 - ARYSIZ	3		0163			10	
156	180			DC	#17	17		0180			10	
157	183		NSTMTS	DCW	#3 NUMBER OF STATEMENTS, INCLUDING GENERATED STOP	3		0183			10	
158	184		GLOBER	DC	#1 GLOBAL ERROR FLAG -- WM MEANS ERROR	1		0184			10	
159	185		GOTXL	DCW	#1 XLINKF WAS REFERENCED IF NO WM	1		0185			10	
160	188		RELTAB	DCW	#3 RELOCATABLE FUNCTION TABLE ENTRY ADDRESSES	3		0188			10	
161	191		SUBENT	DCW	#3 ENTRY TO SUBSCRIPT ROUTINE	3		0191			10	
162	194		ARYTOP	DCW	#3 TOP OF ARRAYS IN OBJECT CODE	3		0194			10	
163	195			DC	#1	1		0195			10	
164	199			DCW	@V4M1e	4		0199			11	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
165				JOB	SNAPSHOT ROUTINE								
166				ORG	333				0333				
167			*										
168			* SNAPSHOT		ROUTINE								
169			*										
170				SFX	S								
171	*	333	SNAPSH	SBR	EXIT&3	S	4	0333	H 567		12	567	
172		337		SBR	SXX&6	S	4	0337	H 408		12	408	
173		341		MCW	KZ3,ADR5-2	S	7	0341	M 661 656		12	661	656
174		348		MCW	XXXXX3,SX3&6	S	7	0348	M 099 415		12	099	415
175		355		MCW	XXXXX1,SX1&6	S	7	0355	M 089 422		12	089	422
176		362		SBR	XXXXX1,1	S	7	0362	H 089 001		12	089	001
177		369		SBR	XXXXX3,202	S	7	0369	H 099 202		13	099	202
178		376		CS	332	S	4	0376	/ 332		13	332	
179		380		CS		S	1	0380	/		13		
180	*	381	PHASLD	MCW	PHASID,210	S	7	0381	M 110 210		13	110	210
181		388		BSS	SKIP,F	S	5	0388	B 621 F		13	621	
182			*										
183			* PRINT A		HEADER								
184			*										
185		393		CC	1	S	2	0393	F 1		13		
186		395		MCW	XXXXX2,250	S	7	0395	M 094 250		13	094	250
187		402	SXX	SBR	216,0	S	7	0402	H 216 000		14	216	000
188		409	SX3	SBR	256,0	S	7	0409	H 256 000		14	256	000
189		416	SX1	SBR	244,0	S	7	0416	H 244 000		14	244	000
190		423		W		S	1	0423	2		14		
191		424		CC	K	S	2	0424	F K		14		
192		426		ZA	KP2,W2A	S	7	0426	? 662 664		14	662	664
193		433	CLEARH	CS	332	S	4	0433	/ 332		14	332	
194		437		CS		S	1	0437	/		15		
195		438		CC	J	S	2	0438	F J		15		
196		440		MCW	ADR5,306	S	7	0440	M 658 306		15	658	306
197		447		MCW		S	1	0447	M		15		
198		448		SBR	LOOP&6	S	4	0448	H 465		15	465	
199		452		MCW	K9,W2B-1	S	7	0452	M 665 668		15	665	668
200		459	LOOP	MCW	W2B-1,000	S	7	0459	M 668 000		15	668	000
201		466		MCW	DOTS	S	4	0466	M 651		16	651	
202		470		SBR	LOOP&6	S	4	0470	H 465		16	465	
203		474		A	KM10,W2B	S	7	0474	A 667 669		16	667	669
204		481		BWZ	LOOP,W2B-1,2	S	8	0481	V 459 668 2		16	459	668
205		489		A	KP1,ADR5-2	S	7	0489	A 670 656		16	670	656
206		496		W		S	1	0496	2		16		
207		497	GET	SW	0&X3	S	4	0497	, 0?0		16	000+3	
208		501		MCW	0&X1,0&X3	S	7	0501	M 0|0 0?0		17	000+1	000+3
209		508		BW	DOWM,0&X1	S	8	0508	V 520 0|0 1		17	520	000+1
210		516		CW	0&X3	S	4	0516	) 0?0		17	000+3	
211		520	DOWM	C	XXXXX1, TOPCOR	S	7	0520	C 089 688		17	089	688
212		527		BU	CONT NO	S	5	0527	B 568 /		17	568	
213		532		W		S	1	0532	2		17		
214		533		WM		S	2	0533	2)		17		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
215	535		RX1	MCW	SX1&6,XXXXX1	S	7	0535	M 422 089		18	422	089
216	542			MCW	SX3&6,XXXXX3	S	7	0542	M 415 099		18	415	099
217	549			CS	332	S	4	0549	/ 332		18	332	
218	553			CS		S	1	0553	/		18		
219	554			BSS	HALT,G	S	5	0554	B 563 G		18	563	
220	559			B	EXIT	S	4	0559	B 564		18	564	
221	563		HALT	H		S	1	0563	.		18		
222	564		EXIT	B	0-0	S	4	0564	B 000		19	000	
223	*		SNAPEX	EQU	EXIT	S		0564					
224	568		CONT	SBR	XXXXX1,1&X1	S	7	0568	H 089 0|1		19	089	001+1
225	575			BCE	BUMP3,XXXXX3-2,2	S	8	0575	B 632 097 2		19	632	097
226	583			SBR	XXXXX3,201	S	7	0583	H 099 201		19	099	201
227	590			W		S	1	0590	2		19		
228	591			WM		S	2	0591	2)		19		
229	593			A	KP1,W2A	S	7	0593	A 670 664		19	670	664
230	600			C	W2A,KP15	S	7	0600	C 664 672		20	664	672
231	607			BU	CLEARH	S	5	0607	B 433 /		20	433	
232	612			S	W2A	S	4	0612	S 664		20	664	
233	616			CCB	CLEARH,1	S	5	0616	F 433 1		20	433	
234	621		SKIP	MCW	XQTD,220	S	7	0621	M 680 220		20	680	220
235	628			W	RX1	S	4	0628	2 535		20	535	
236	632		BUMP3	A	KP1,XXXXX3	S	7	0632	A 670 099		20	670	099
237	639			B	GET	S	4	0639	B 497		21	497	
238	651		DOTS	DCW	@9.....@	S	9	0651			21		
239	653			DCW	@9-@	S	2	0653			21		
240	658		ADR5	DCW	00000 FIVE DIGIT ADDRESS	S	5	0658			21		
241	661		KZ3	DCW	000	S	3	0661			21		
242	662		KP2	DCW	&2	S	1	0662			21		
243	664		W2A	DCW	#2	S	2	0664			21		
244	665		K9	DCW	9	S	1	0665			22		
245	667		KM10	DCW	@I0@	S	2	0667			22		
246	669		W2B	DCW	#2	S	2	0669			22		
247	670		KP1	DCW	&1	S	1	0670			22		
248	672		KP15	DCW	&15	S	2	0672			22		
249	680		XQTD	DCW	@EXECUTED@	S	8	0680			22		
250				SFX	END OF SNAPSHOT ROUTINE								
251				*									
252				*	STORAGE FOR PARAMETER CARD								
253				*									
254				DA	1X19			0681	0699		22		
255	685		PWORD	5	THE WORD PARAM			0685		SBFLD			
256	688		TOPCOR	8	TOP CORE ADDRESS FROM PARAM CARD			0688		SBFLD			
257	690		IMOD	10	INTEGER MODULUS -- NUMBER OF DIGITS			0690		SBFLD			
258	692		MANTIS	12	FLOATING POINT MANTISSA DIGITS			0692		SBFLD			
259	693		CONDNS	13	P FOR CONDENSED DECK			0693		SBFLD			
260	694		SNAPSW	14	S FOR SNAPSHOT			0694		SBFLD			
261	695		C1410	15	T IF RUN ON 1410 IN 1401 COMPATIBILITY MODE			0695		SBFLD			
262	696		FMISW	16	X FOR NO FORMAT, L FOR LIMITED FORMAT			0696		SBFLD			
263			*		BLANK FOR ORDINARY, A FOR A CONVERSION								
264	699		PARAM	19	PARAMETER CARD IS STORED HERE			0699		SBFLD			

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
265			JOB		LOAD NEXT OVERLAY								
266			*										
267			*		THE DEFAULT IS TO LOAD A BLOCK AT 201 AND BRANCH TO IT, ASSUMING								
268			*		IT'S AN INTERPHASE CLEAR OR LOAD BLOCK. IF LOADED FROM AN								
269			*		AUTOCODER TAPE, THE ADDRESSES ARE CHANGED TO 1. IF LOADED FROM								
270			*		CARDS THE LOAD AND ENTRY ADDRESSES ARE IRRELEVANT.								
271			*										
272				ORG	700					0700			
273	*		LOADNX	R	40			4	0700	1 040		23	040
274	*		CDOVLY	EQU	LOADNX				0700				
275	*		TPREAD	RTW	1,201			8	0704	L %U1 201 R		23	%U1 201
276			BER	TPERR	ERROR?			5	0712	B 728 L		23	728
277			SBR	18,TPERR	IN CASE OF LOADING FROM AUTOCODER TAPE			7	0717	H 018 728		23	018 728
278			LOADEX	B	201			4	0724	B 201		23	201
279			*										
280			*		TAPE ERROR HANDLER ASSUMES BER IMMEDIATELY FOLLOWS RTW.								
281			*		TAPE INSTRUCTION IS COPIED INTO THE ERROR-COUNT LOOP.								
282			*										
283	*		TPERR	SBR	TPERRX&3			4	0728	H 775		23	775
284				SBR	MVREAD&3			4	0732	H 746		23	746
285			MA	KM6,MVREAD&3	BACK UP TO THE TAPE INSTRUCTION			7	0736	# 804 746		24	804 746
286			MVREAD	MCW	0-0,REREAD&7			7	0743	M 000 766		24	000 766
287			RESTR	ZA	ECOUNT			4	0750	? 801		24	801
288			RETRY	BSP	1			5	0754	U %U1 B		24	%U1
289			REREAD	RTW	0-0,0-0			8	0759	L %U0 000 R		24	%U0 000
290			BER	*&5	Q: ERROR?			5	0767	B 776 L		24	776
291			TPERRX	B	0-0			4	0772	B 000		25	000
292			A	*-6,ECOUNT	BUMP ERROR COUNTER			7	0776	A 776 801		25	776 801
293			BCE	RETRY,ECOUNT-1,0	NOT TEN YET?			8	0783	B 754 800 0		25	754 800
294			NOP	NOP	3333			4	0791	N C33		25	3333
295			H					1	0795	.		25	
296			B	RESTR	RESTART THE ERROR COUNTER			4	0796	B 750		25	750
297			ECOUNT	DCW	00			2	0801			25	
298			KM6	DSA	16000-6			3	0804	I9D		26	15994
299			*										
300			*		START HERE. SET UP THE LOADER AND LOAD PHASE 1.								
301			*										
302			EXT03		START, TOP OF PHASE 3, WHERE MOST PHASES BEGIN								MACRO
303			BEGIN3	EQU	838				0838				GEN
304			TOP3	EQU	2600				2600				GEN
305			*										
306				ORG	BEGIN3					0838			
307			BEGIN0	CS	0			4	0838	/ 000		27	000
308				SBR	SIZE			4	0842	H 925		27	925
309				BWZ	SMALL,SIZE,2			8	0846	V 899 925 2		27	899 925
310				BCE	LOADNX,1,			8	0854	B 700 001		27	700 001
311				MCW	NOP,LOADNX			7	0862	M 791 700		27	791 700
312				BCE	LOADNX,1,B			8	0869	B 700 001 B		27	700 001
313				SBR	TPREAD&6,1			7	0877	H 710 001		28	710 001
314				SBR	LOADEX&3			4	0884	H 727		28	727

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
315				SBR	18,TPERR			7 0888	H 018 728		28	018	728
316				B	LOADNX			4 0895	B 700		28	700	
317			SMALL	CS	332			4 0899	/ 332		28	332	
318				CS				1 0903	/		28		
319				MCW	MSG,237			7 0904	M 962 237		28	962	237
320				W				1 0911	2		29		
321				CC	1			2 0912	F 1		29		
322			H6666	NOF	6666			4 0914	N 06W		29	6666	
323				H				1 0918	.		29		
324				B	H6666			4 0919	B 914		29	914	
325			SIZE	DSA	0			3 0925	000		29	000	
326			MSG	DCW	@MESSAGE 0 - PROGRAM NEEDS AT LEAST 8K@			37 0962			30		
327			GMWM	DCW	@}@			1 0963		GMARK	30		
328				XFR	BEGIN0				B 838		31	838	
329				*									
330				*	GENERATE A CLEAR BLOCK FROM BEGIN0 TO GMWM								
331				*									
332				CLR0	CLRA	BEGIN0,GMWM				MACRO			
				*	CLRA	CLRBOT,CLRTOP[,ORG,GMWMAD]				GEN			
				*						GEN			
				*	CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS					GEN			
				*						GEN			
333				ORG	201				0201				
				*						GEN			
				*	CLEAR DOWN TO CLRBOT & X00 THE EASY WAY					GEN			
				*						GEN			
334				CLR0	EQU	*&1			0201				
335				)0J002	CS	GMWM			4 0201	/ 963	34	963	
336				SBR	)0J002&3			4 0205	H 204		34	204	
337				SBR	)0L002&6			4 0209	H 250		34	250	
338				C	)0J002&3,)0M002	DOWN TO CLRBOT & X00?		7 0213	C 204 261		34	204	261
339				BU	)0J002			5 0220	B 201 /		34	201	
				*						GEN			
				*	NOW CLEAR DOWN TO CLRBOT THE HARD WAY					GEN			
				*						GEN			
340				)0K002	C	)0L002&6,)0N002		7 0225	C 250 264		34	250	264
341				BU	)0L002			5 0232	B 244 /		34	244	
342				CS	LOADNX,)0Q002	LOAD THE NEXT BLOCK AT 1		7 0237	/ 700 271		35	700	271
343				)0L002	LCA	)0P002,0-0	CLEAR WITH BLANK AND WORD MARK	7 0244	L 265 000		35	265	000
344				SBR	)0L002&6			4 0251	H 250		35	250	
345				B	)0K002			4 0255	B 225		35	225	
346				)0M002	DSA	)0R002	CLRBOT & X00 - 1	3 0261	899		35	899	
347				)0N002	DSA	BEGIN0	CLRBOT	3 0264	838		35	838	
348				)0P002	DCW	#1		1 0265			35		
349				DC	@CLRA @	IDENTIFY IN A DECK, TAPE, OR DUMP		5 0270			35		
350				)0Q002	DCW	@}@		1 0271			36		
351				ORG	BEGIN0&X00				0900				
352				)0R002	EQU	*	CLRBOT & X00 - 1		0899				
353				XFR	CLR0	PROHIBITED IN A MACRO			B 201		37	201	

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)OJ002	0201: 0	)OK002	0225: 0	)OL002	0244: 0	)OM002	0261: 0	)ON002	0264: 0	)OP002	0265: 0
)OQ002	0271: 0	)OR002	0899: 0	ADR5 S	0658: 0	ARYSIZ	0160: 0	ARYTOP	0194: 0	BEGIN0	0838: 0
BEGIN3	0838: 0	BOTFMT	0154: 0	BUMP3S	0632: 0	C1410	0695: 0	CDOVLY	0700: 0	CLEARH	0433: 0
CLR0	0201: 0	CONDNS	0693: 0	CONT S	0568: 0	DOCNT	0151: 0	DOTS S	0651: 0	DOWM S	0520: 0
ECOUNT	0801: 0	EXIT S	0564: 0	EXPF	0120: 0	FLOATF	0125: 0	FMTSW	0696: 0	GET S	0497: 0
GLOBER	0184: 0	GMWM	0963: 0	GOTXL	0185: 0	H6666	0914: 0	HALT S	0563: 0	IMOD	0690: 0
K9 S	0665: 0	KM10 S	0667: 0	KM6	0804: 0	KP1 S	0670: 0	KP15 S	0672: 0	KP2 S	0662: 0
KZ3 S	0661: 0	LOADEX	0724: 0	LOADNX	0700: 0	LOGF	0119: 0	LOOP S	0459: 0	MANTIS	0692: 0
MSG	0962: 0	MVREAD	0743: 0	NEGAR2	0142: 0	NEGAR3	0157: 0	NEGARY	0163: 0	NOP	0791: 0
NSTMTS	0183: 0	PARAM	0699: 0	PHASID	0110: 0	PHASLD	0381: 0	PWORD	0685: 0	RELTAB	0188: 0
REREAD	0759: 0	RESTRT	0750: 0	RETRY	0754: 0	RX1 S	0535: 0	SAWABS	0122: 0	SAWNEG	0123: 0
SEQTAB	0148: 0	SERIES	0117: 0	SINCOS	0118: 0	SIZE	0925: 0	SKIP S	0621: 0	SMALL	0899: 0
SNAPEX	0564: 0	SNAPSH	0333: 0	SNAPSW	0694: 0	SUBENT	0191: 0	SUBSCR	0116: 0	SX1 S	0416: 0
SX3 S	0409: 0	SXX S	0402: 0	TBLBOT	0145: 0	TOP3	2600: 0	TOPCOR	0688: 0	TPERR	0728: 0
TPERRX	0772: 0	TPREAD	0704: 0	W2A S	0664: 0	W2B S	0669: 0	X1	0089: 0	X2	0094: 0
X3	0099: 0	XFIXF	0124: 0	XQTD S	0680: 0	XXXXX1	0089: 0	XXXXX2	0094: 0	XXXXX3	0099: 0

UNREFERENCED SYMBOLS

ARYSIZ ARYTOP BOTFMT C1410 CDOVLY CONDNS DOCNT EXPF FLOATF FMTSW GLOBER GOTXL IMOD LOGF MANTIS NEGAR2 NEGAR3
 NEGARY NSTMTS PARAM PHASLD PWORD RELTAB SAWABS SAWNEG SEQTAB SERIES SINCOS SNAPEX SNAPSH SNAPSW SUBENT SUBSCR TBLBOT
 TOP3 XFIXF