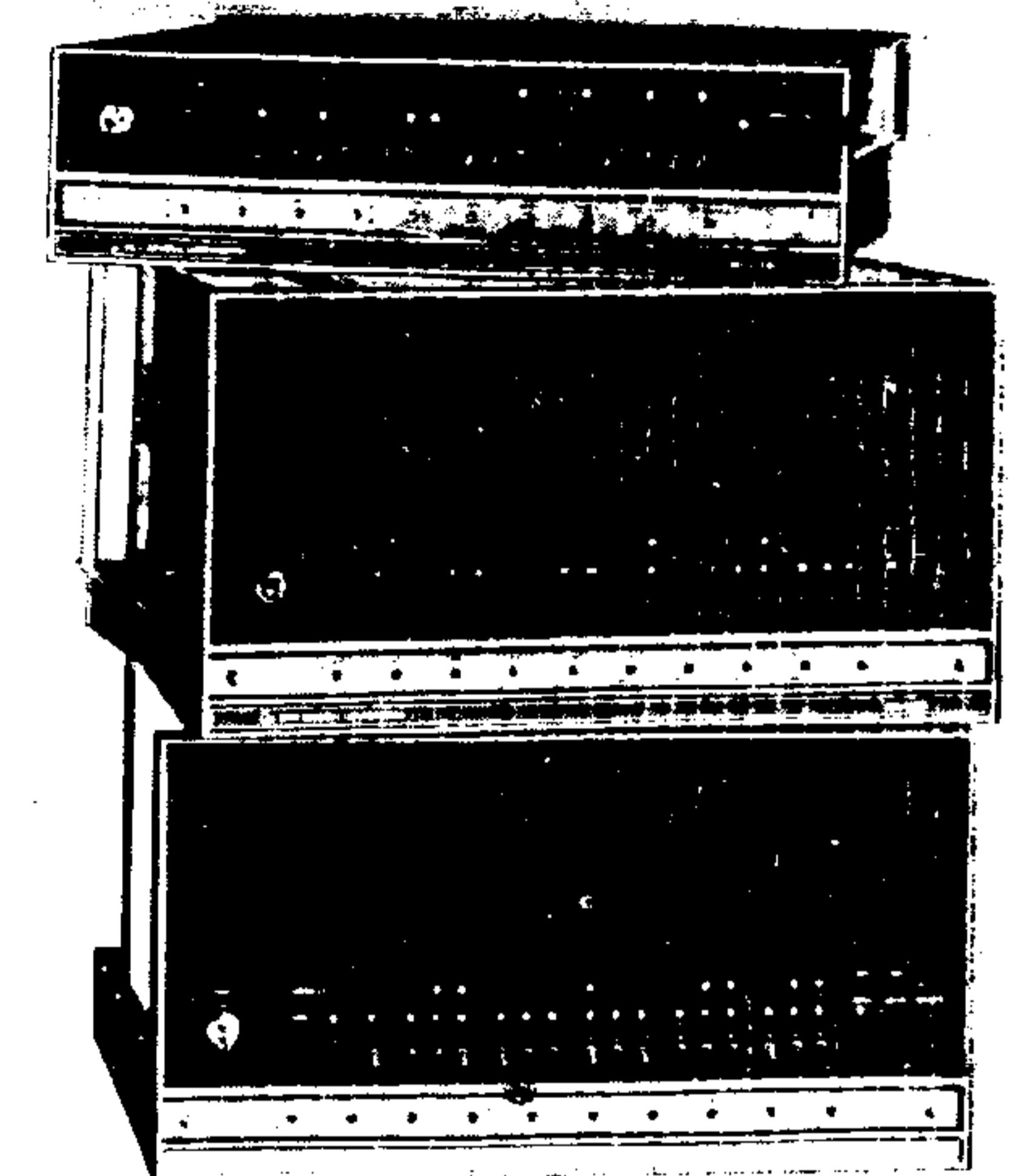


ASCII CODE

ASSEMBLY OPERATING PROCEDURE

Nova Minicomputers

Instruction Reference Card



7-Bit Octal Code	Character	7-Bit Octal Code	Character	7-Bit Octal Code	Character
000	NUL	053	+	126	V
001	SOH	054	,	127	W
002	STX	055	-	130	X
003	ETX	056	.	131	Y
004	EOT	057	/	132	Z
005	ENQ	060	0	133	[
006	ACK	061	1	134	\
007	BEL	062	2	135]
010	BS	063	3	136	↑
011	HT	064	4	137	←
012	LF	065	5	140	,
013	VT	066	6	141	a
014	FF	067	7	142	b
015	CR	070	8	143	c
016	SO	071	9	144	d
017	SI	072	:	145	e
020	DLE	073	;	146	f
021	DC1	074	<	147	g
022	DC2	075	=	150	h
023	DC3	076	>	151	i
024	DC4	077	?	152	j
025	NAK	100	@	153	k
026	SYN	101	A	154	l
027	ETB	102	B	155	m
030	CAN	103	C	156	n
031	EM	104	D	157	o
032	SUB	105	E	160	p
033	ESC	106	F	161	q
034	FS	107	G	162	r
035	GS	110	H	163	s
036	RS	111	I	164	t
037	US	112	J	165	u
040	SP	113	K	166	v
041	!	114	L	167	w
042	"	115	M	170	x
043	#	116	N	171	y
044	\$	117	O	172	z
045	%	120	P	173	}
046	&	121	Q	174	
047	'	122	R	175	}
050	(123	S	176	~
051)	124	T	177	DEL
052	*	125	U		

IN:

- Teletype reader without parity checking
- Teletype reader with parity checking
- Paper tape reader without parity checking
- Paper tape reader with parity checking
- Teletype keyboard without parity checking

LIST:

- Teletype Model 33
- Teletype Model 35
- Line printer
- Paper tape punch (for ASR33)
- Paper tape punch (for ASR35)

BIN:

- Teletype punch without local symbols
- Paper tape punch without local symbols
- Teletype punch with local symbols
- Paper tape punch with local symbols

MODE:

- Pass 1
- Pass 2 — Output object tape
- Pass 2 — Output listing
- Pass 2 — Output object tape and listing

Output symbol list

*Relocatable assembler only

RELOCATABLE LOADER MODES

Mode Response	Effect
1	Load a relocatable binary or a relocatable library tape from the teletype
2	Load a relocatable binary or a relocatable library tape from the paper tape reader
3	Force a load address for normally relocatable code
4	Complement the load all symbols switch
5	Print current memory limits
6	Print a loader map
7	Reinitialize the loader
8	Terminate the load process to prepare for execution
9*	Print a loader map of undefined symbols

* Extended relocatable loader only

BOOTSTRAP LOADER

TTI: -- = 10 PTR: -- = 12 Enter at BSTRP

X7757	126440	GET:	SUBO	1,1
X7760	0636--		SKPDN	--
X7761	000777		JMP	.-1
X7762	0605--		DIAS	0,--
X7763	127100		ADDL	1,1
X7764	127100		ADDL	1,1
X7765	107003		ADD	0,1,SNC
X7766	000772		JMP	GET+1
X7767	001400		JMP	0,3
X7770	0601--	BSTRP:	NIOS	--
X7771	004766		JSR	GET
X7772	044402		STA	1,+2
X7773	004764		JSR	GET

X=0 for 4K System; X=1 for 8K; =2 for 12K; etc.

