$5.75

MAGNETIC TAPE SYSTEMS
REFERENCE DOCUMENTS
FOR ALL "A" AND "P" SYSTEMS

SDS 901040B

April 1967

This publication supersedes SDS 901040A-1
dated August 1965, revised February 1966.

SDS
SCIENTIFIC DATA SYSTEMS • 1649 Seventeenth Street • Santa Monica, Calif. • (213) 871-0960

INTRODUCTION

This is an updating packet for all Ampex and Potter Magnetic Tape Systems shipped.

It is to be integrated into and used in conjunction with the following documents:

1. Logic Diagrams, Magnetic Tape Control unit SDS 103257 D
2. Logic Diagrams, Magnetic Tape Unit SDS 103258 D

These two documents have been supplied as BINDER II of the respective Magnetic Tape Technical Manuals.

The "E" revision pages and Addendum sheets supplied in this package reflect the configurations of all magnetic tape systems presently in the field.

History logic configurations can be determined by the Addendum pages with the corresponding schematics affected. These Addendum pages are for reference only and are not to be used for reworking. The respective Engineering Change Order numbers are referenced to the changes.

Subsequent updating packets will be supplied to be collated by the user.

MASTER INDEX
(SDS 901040)

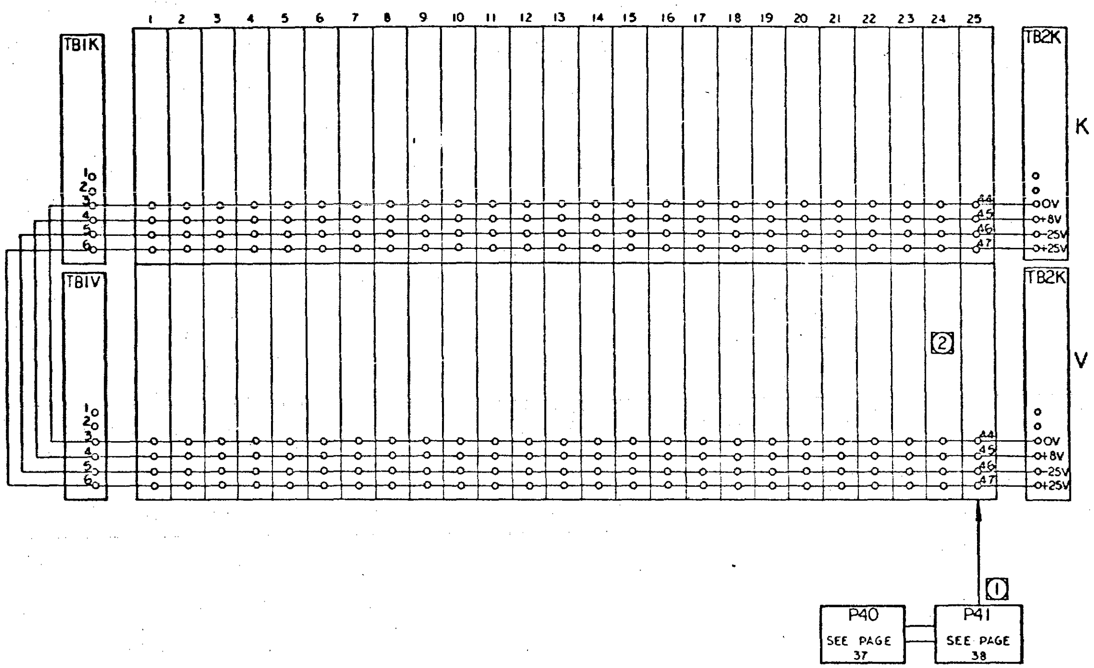
REV	DESCRIPTION	ECO	DATE	APPROVED
A	RELEASED TO MFG.			
D	SEE REV E.O.			

103257 D

NOTES UNLESS OTHERWISE SPECIFIED

[1] RECEPTACLE J(25V) IS PROVIDED FOR THE P41 TO P40 CABLE. P40 IS CONNECTED TO J(11G) OF THE MODEL 910 OR 920 COMPUTER, OR J(38X) OF THE MODEL 9120 Y BUFFER, OR TO J(1H) OR J(6H) OF THE MODEL 9126 SIGNAL COUPLER.

[2] RECEPTACLE J(24V) IS PROVIDED FOR P43 FROM A MODEL 9246 MAG TAPE UNIT.



92483, 9348, 9248, 92481, 92482.
MAG TAPE CONTROL UNIT

PAGE 2

D

NO REQ	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.

MATERIAL LIST

DRAWN	7/12/63
CHECK	7/8/63
APPR	7/9/63

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

MODEL NO 9248

NEXT ASSY 101872

SIZE D DWG NO. 103257 D

SCALE | DO NOT SCALE DRAWING | SHEET

103257 D

REVISIONS		
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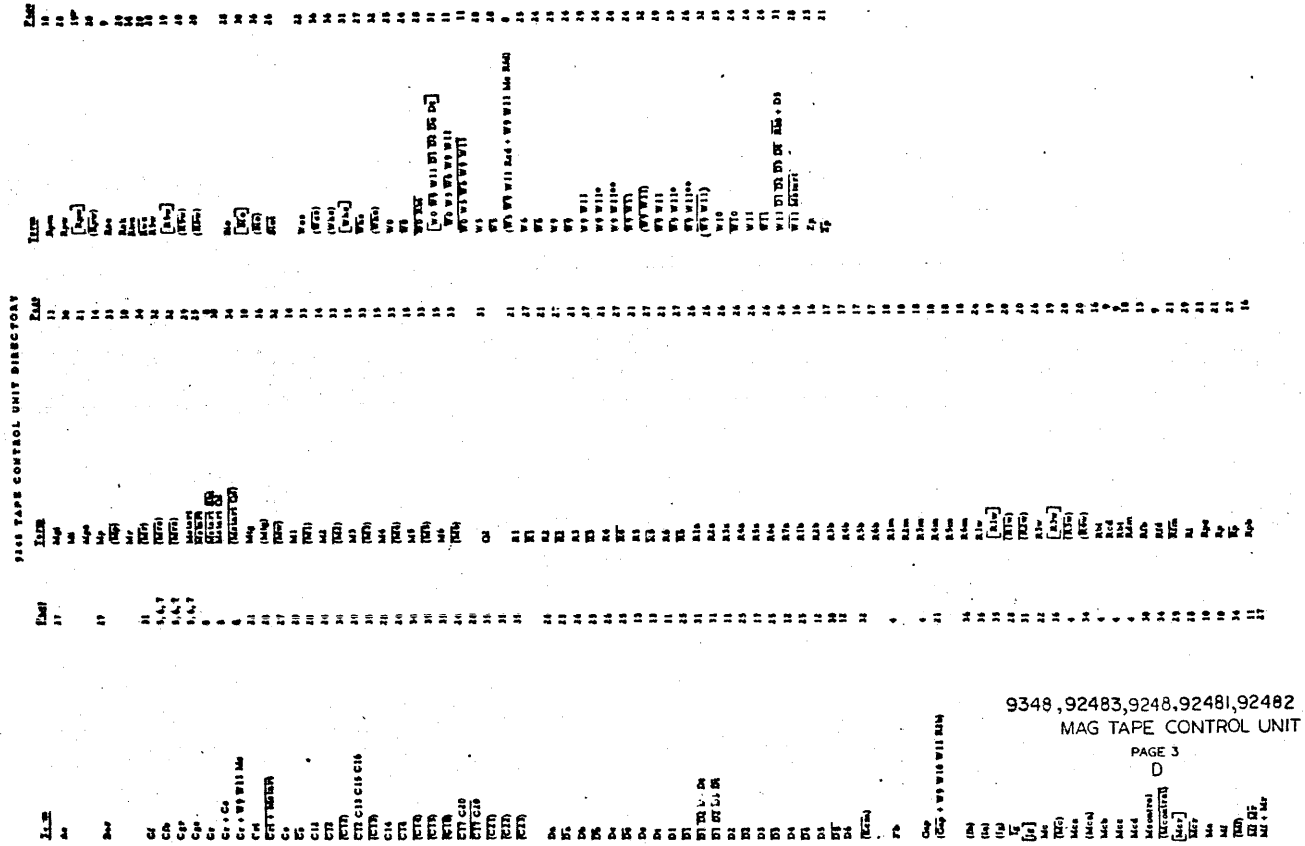
D	SEE REV E.O.	



9348, 92483, 9248, 92481, 92482
MAG TAPE CONTROL UNIT
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D

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MATERIAL LIST

UNLESS SPECIFIED

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APPR.	[illegible]	[illegible]

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO. 9248

NEXT ASSY.

SIZE D | DWG. NO. 103257 | D

SCALE | DO NOT SCALE DRAWING | SHEET

REVISIONS			103257	D
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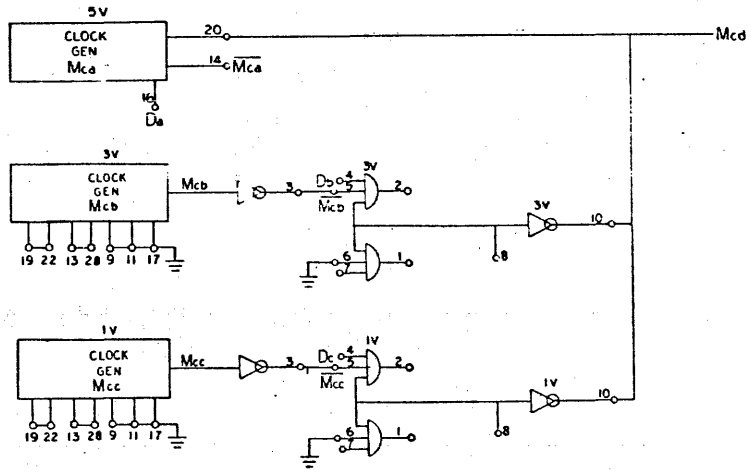
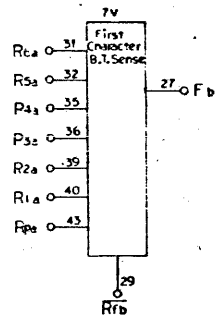
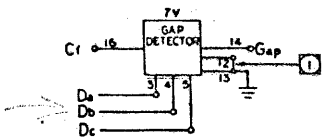
B	SEE REV E.O.			
D	SEE REV E.O.			







[1] REMOVE JUMPER FOR MODEL 92483.

MODEL	FREQUENCY/PERIOD µs			GAP DETECTOR SETTING IN µs		
	POSITION 5V Mcb	POSITION 3V Mcb	POSITION 1V Mcc	Da	Db	Dc
9248	15KC 67µs	41.7 KC 24µs	NOT USED	150	54	NOT USED
92481	15KC 67µs	NOT USED	NOT USED	150	NOT USED	NOT USED
92482	15KC 67µs	41.7 KC 24µs	60KC 16.7µs	150	54	37
92483	24KC 41.6µs	66.72KC 15µs	96KC 10.4µs	95	34	23
9346	12KC 83.2µs	33.36KC 30µs	48KC 20.8µs	185	67	46

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92483,9248,92481,92482
TAPE CONTROL
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DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
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SDS SCIENTIFIC DATA SYSTEMS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO. 9248
NEXT ASSY

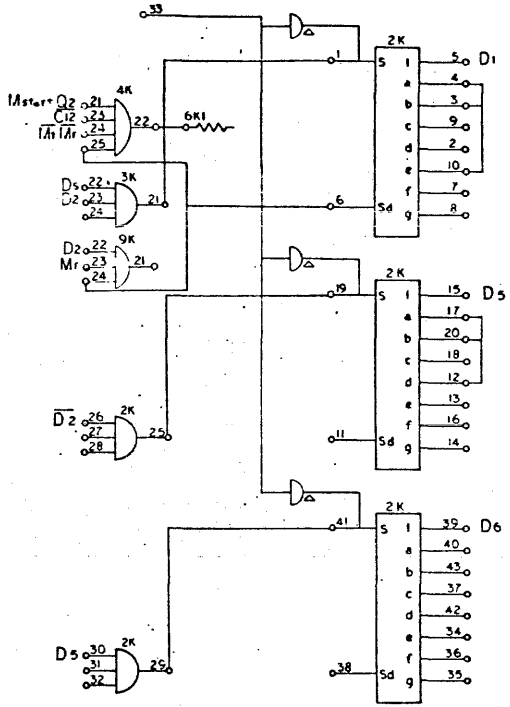
SIZE D | DWG NO. 103257 | D

SCALE | DO NOT SCALE DRAWING | SHEET

103257 101

REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG.		
D	SEE REV E.O.		

103257 D



MODEL	D1	D5	D6
9248	4.7ms	350us	10us
92481	4.7ms	350us	
92482	4.7ms	350us	
92483	3.8ms	250us	
9348	6 ms	425us	10us

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TAPE CONTROL
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NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
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SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

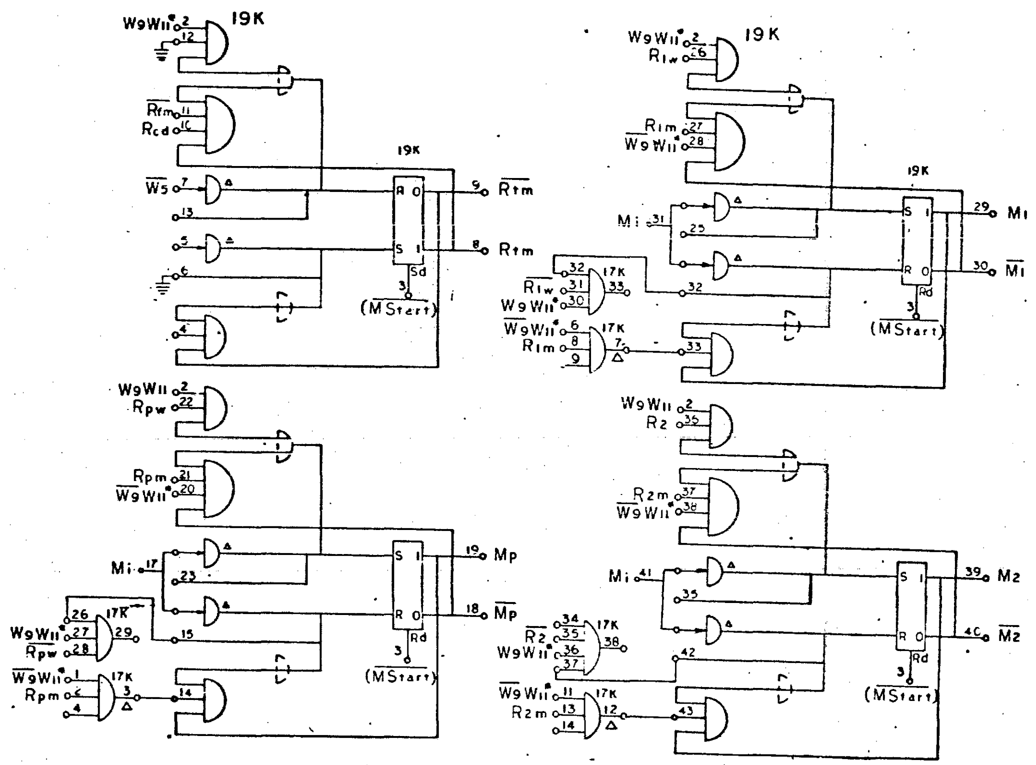
MODEL NO. 9248

NEXT ASSY

SIZE D | DWG NO 103257 | D

SCALE | DO NOT SCALE DRAWING | SHEET

103257 D1



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92483,9248,92481,92482
TAPE CONTROL
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REV	DESCRIPTION
A	REL. TO MFG.
D	SEE REV E.O.

103257 D

SDS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D — DWG NO 103257 — REV D

REVISIONS				103257 D
REV	DESCRIPTION	CHG	DATE	APPROVED
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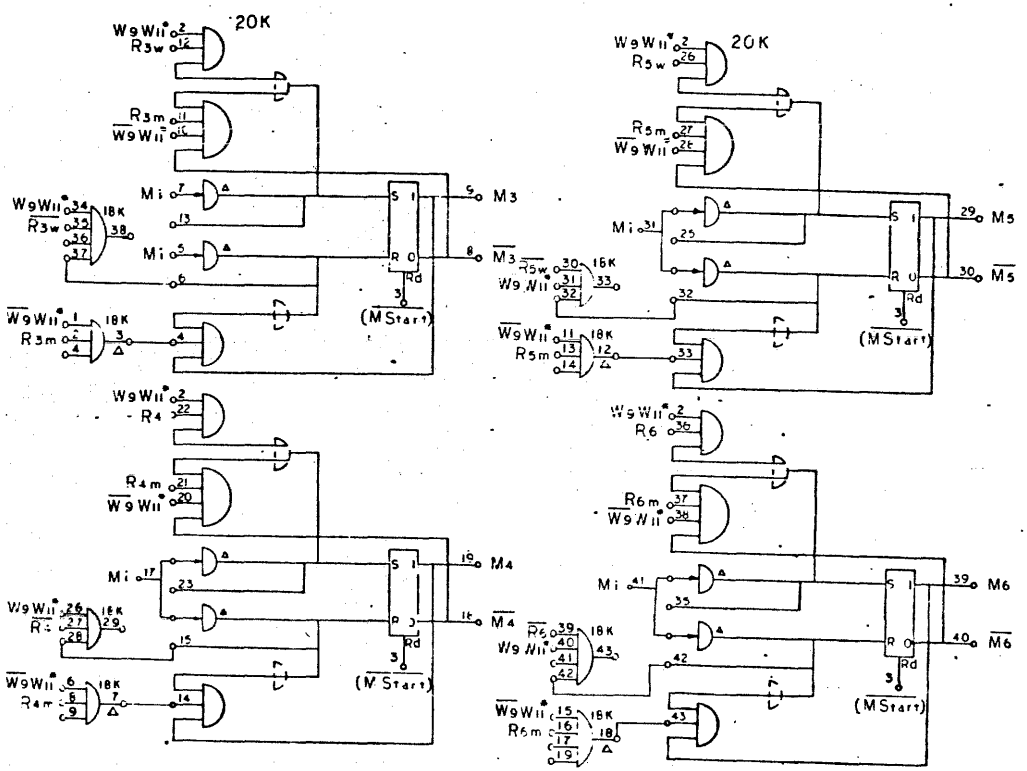
D	SEE REV E.O.			



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92483,92218,92481,92482
TAPE CONTROL
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D

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		MATERIAL LIST		

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APPD		

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DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

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SCALE | SHEET

103257 101

REV	DESCRIPTION	103257 D
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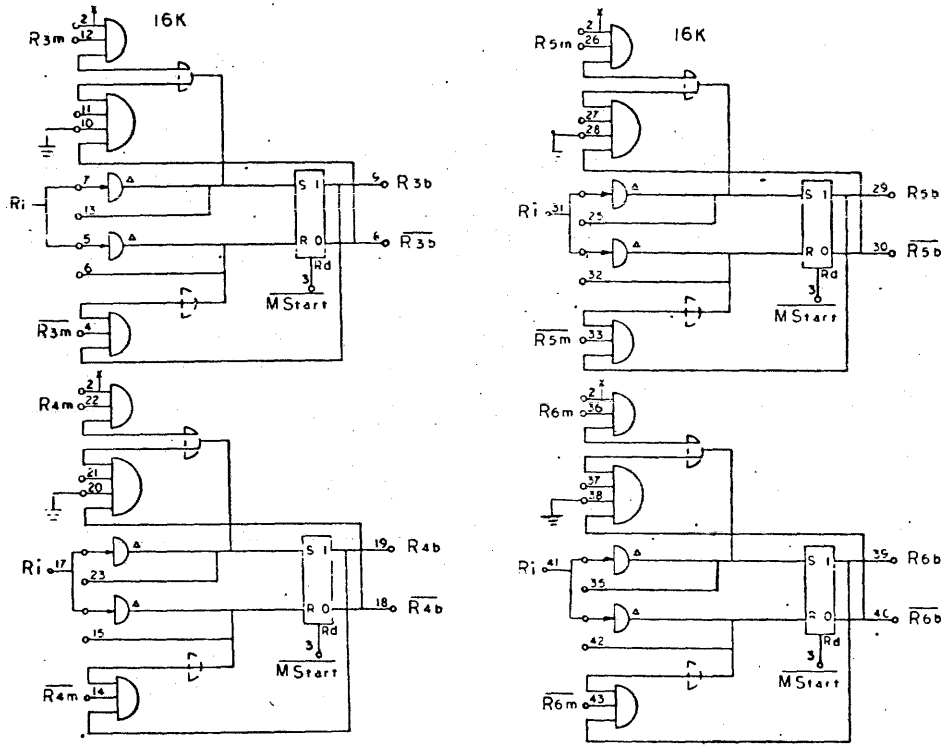
D	SEE REV E.D.	



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92483,9248,92481,92482
TAPE CONTROL
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DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION

MATERIAL LIST

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SDS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D | DWG NO 103257 | D

103257 01

REVISIONS				103257 D
REV	DESCRIPTION	DATE	APPROVED	
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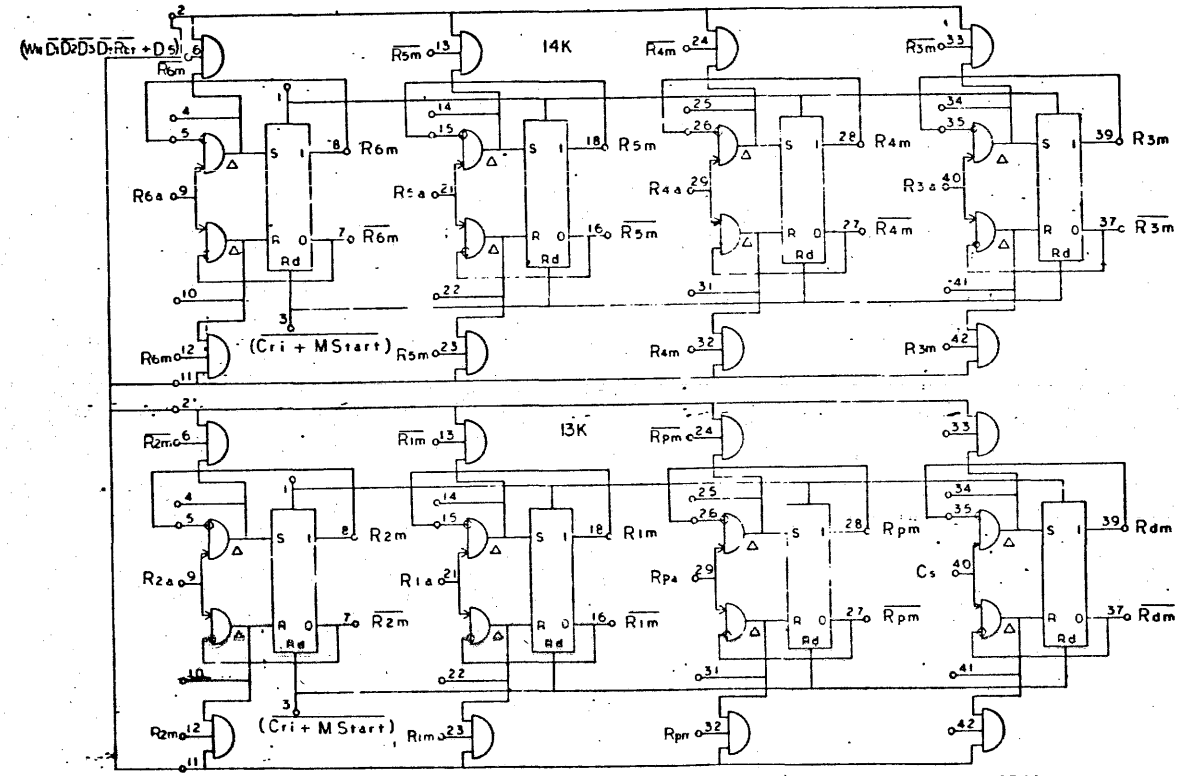

9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 18
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		MATERIAL LIST		

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MODEL NO 9248

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MAG TAPE CONTROL UNIT

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103257 D

REVISIONS			103257 D
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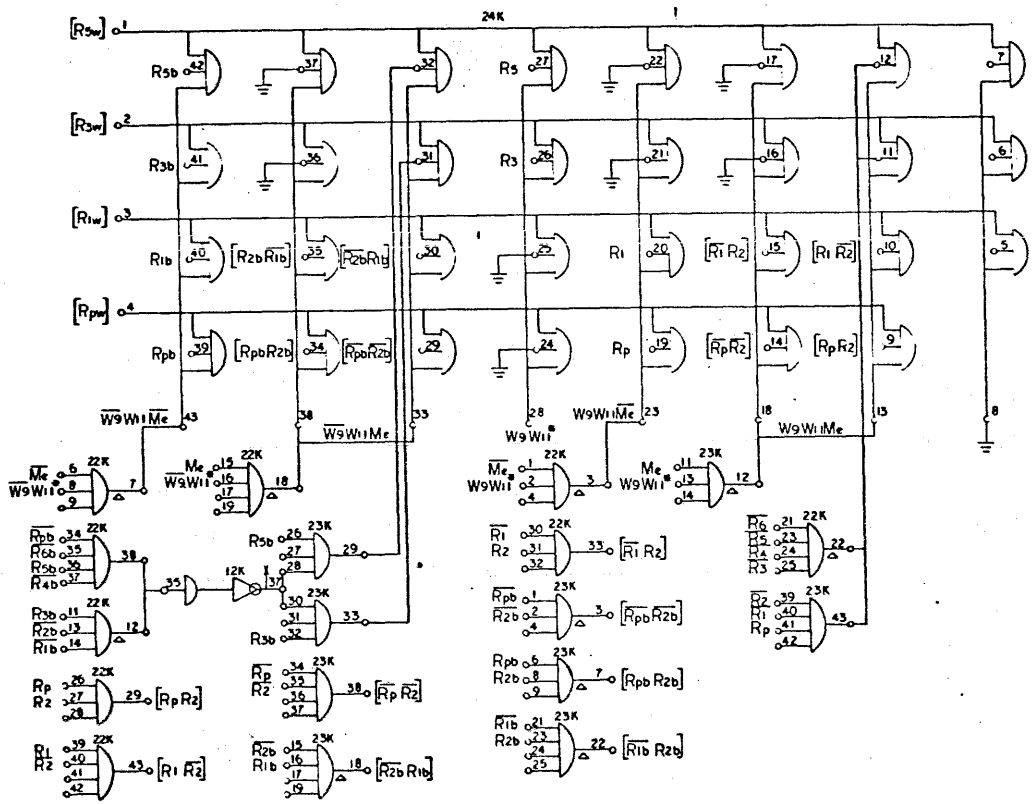

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92483,9248,92481,92482
TAPE CONTROL
PAGE 19
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DIAGRAM, LOGIC,
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NEXT ASSY

SIZE D | DRAWING NO. 103257 | D

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103257 01

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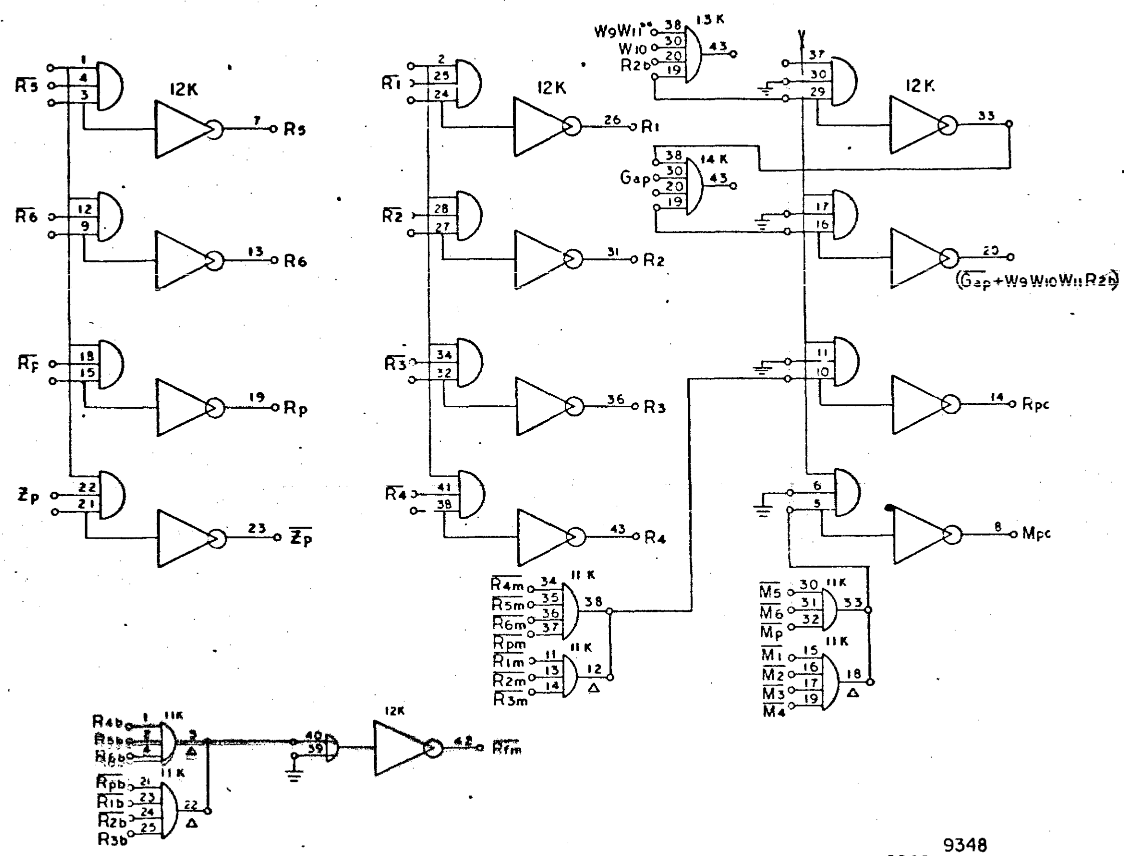

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TAPE CONTROL
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D

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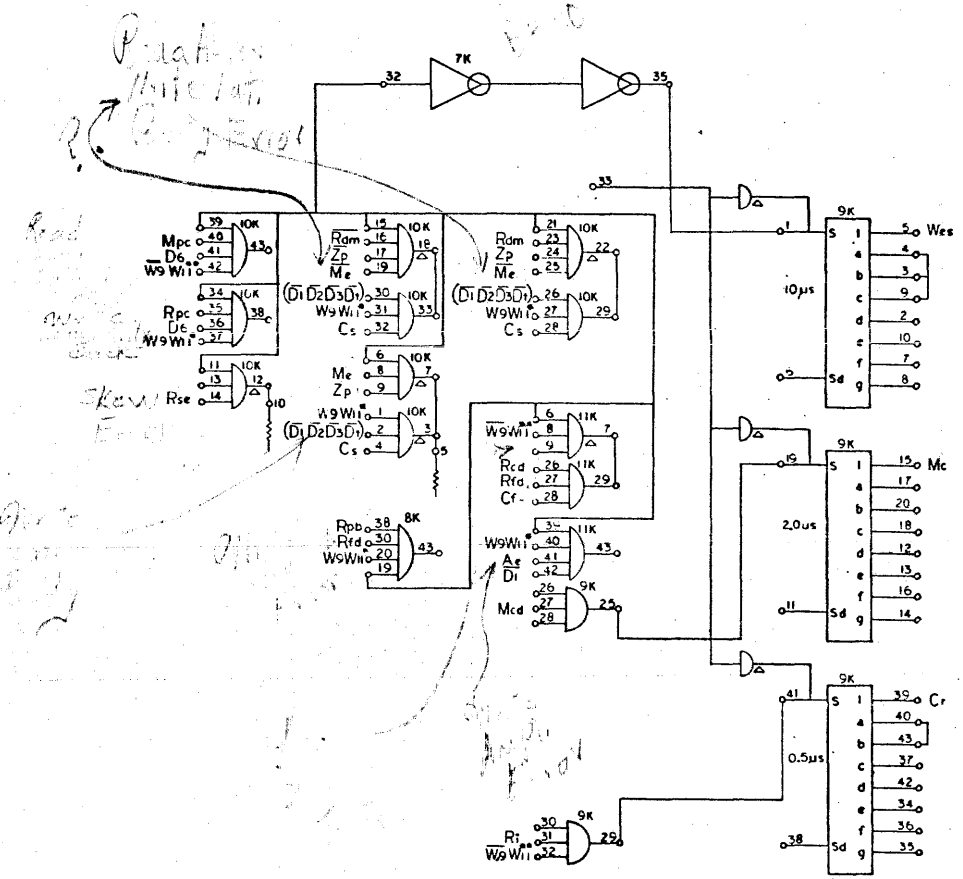
SDS
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248
SIZE D DWG NO 103257 D



REVISIONS				103257 E
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D	SEE REV EO			
E	SEE REV EO			

9K = FH
8K = FH
11K = GC-10
10K = GC-10
7K = GC-10

103257 E

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92483,9248 92481,92482
CONTROL
PAGE 22.
E

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO

MATERIAL LIST

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MAG TAPE CONTROL UNIT

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SCALE | DO NOT SCALE DRAWING | SHEET 22

REV	DESCRIPTION	DATE	APPROVED
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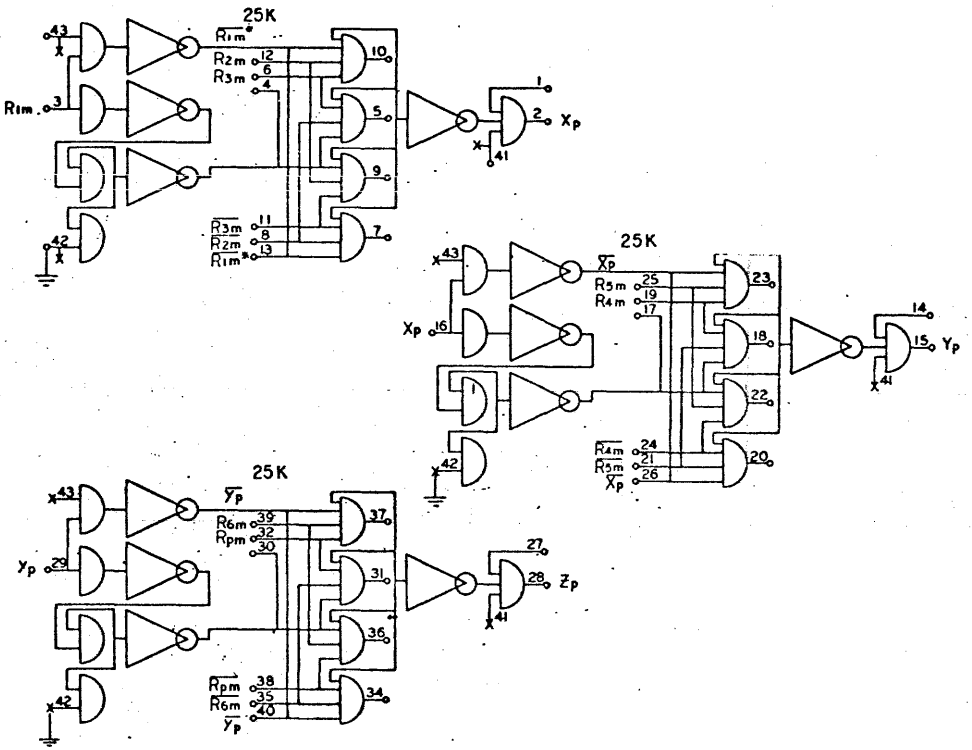
103257 D



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92483,9248,92481,92482
TAPE CONTROL
PAGE 23
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TITLE
DIAGRAM, LOGIC,
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MODEL NO 9248

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SIZE D | DWG NO 103257 | D

SCALE | DO NOT SCALE DRAWING | SHEET

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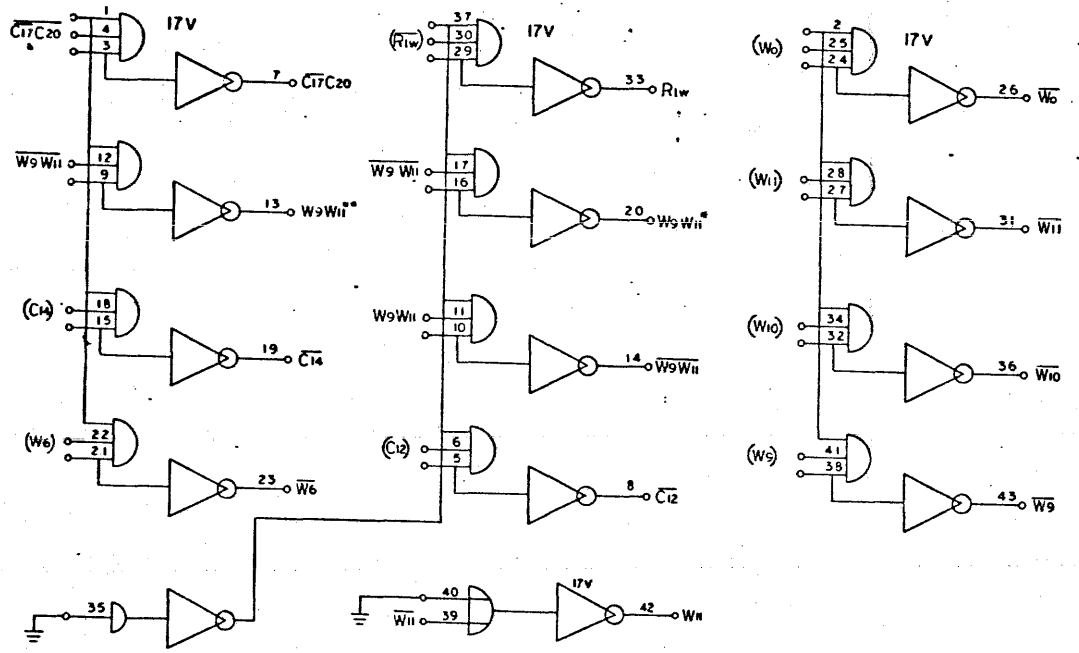

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92483,9248,92481,92482
TAPE CONTROL
PAGE 24
D

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APPD	[illegible]	7/19/62

SDS

TITLE: DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D | DWG NO 103257 | D

SCALE | DO NOT SCALE DRAWING | SHEET

103257 D

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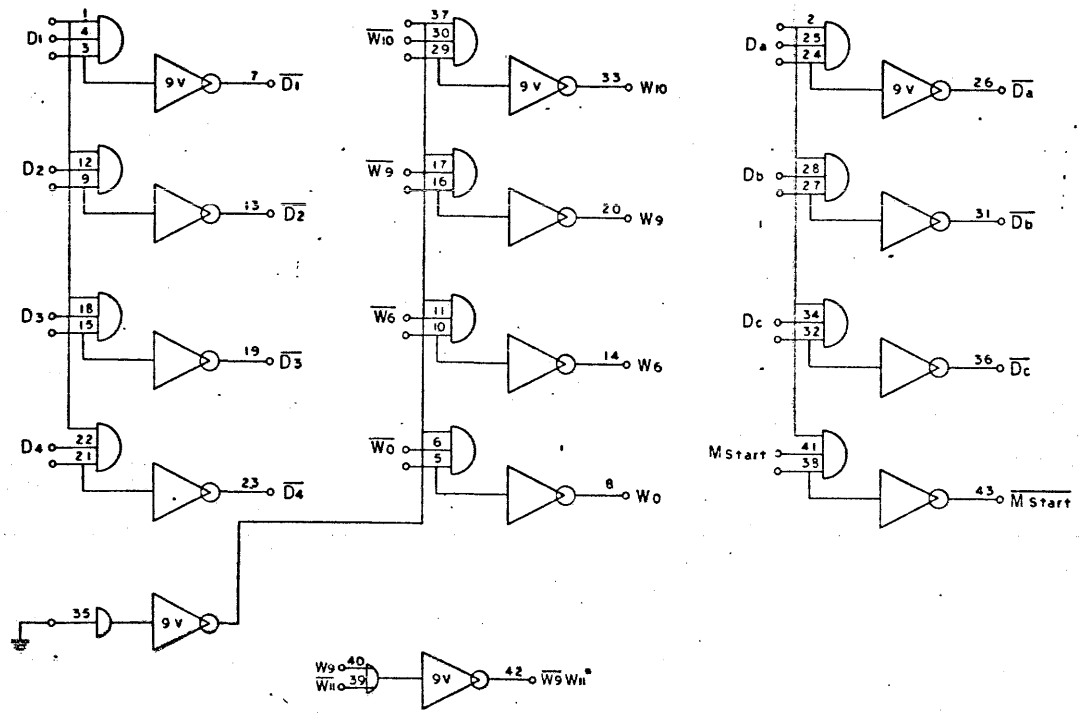

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TAPE CONTROL

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MATERIAL LIST				

NOTES UNLESS SPECIFIED

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SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248

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SCALE | DO NOT SCALE DRAWING | SHEET

103257 D1

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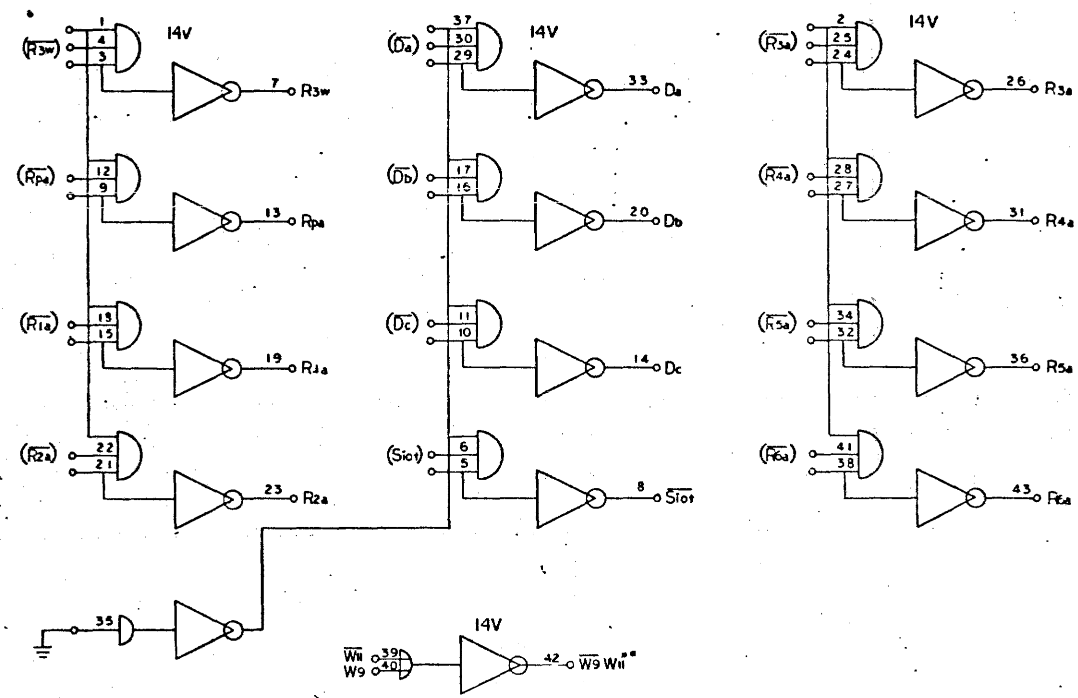
103257 D



9348,
92483,9248,92481,92482
TAPE CONTROL
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D

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SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC,
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MODEL NO 9248

SIZE D DWG NO 103257 D

103257 D

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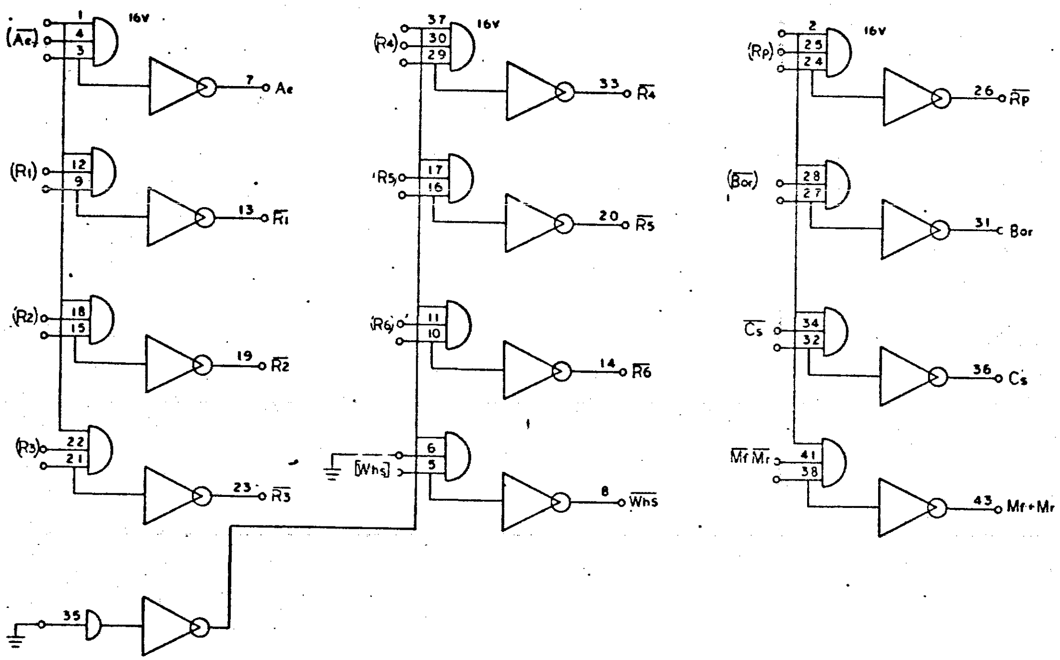
103257 D



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92483.9248,92481,92482
TAPE CONTROL
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D

SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC,
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MODEL NO. 9248

SIZE D DWG NO 103257 D

103257 D

REVISIONS				103257 D
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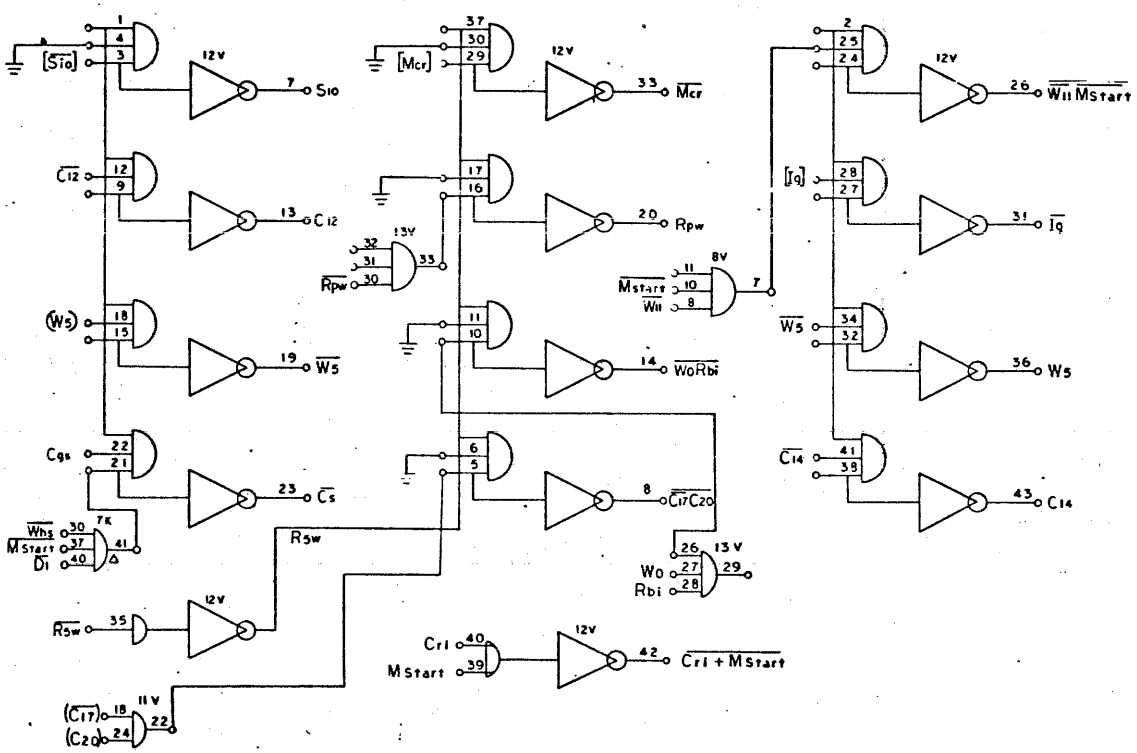

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92483,9248,92481,92482
TAPE CONTROL
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D

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MATERIAL LIST				

NOTES UNLESS SPECIFIED

SDS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO. 9248

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103257 101

REVISIONS				103257 D
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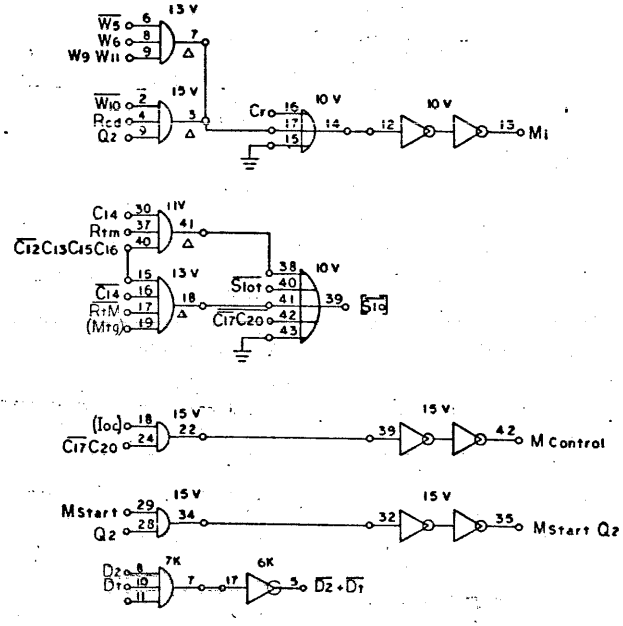
C	SEE REV. E.O.			
D	SEE REV E.O.			



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92483,9248,92481,92482
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D

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		MATERIAL LIST		

NOTES UNLESS SPECIFIED

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NEXT ASSY

SIZE D | DWG NO. 103257 | D

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103257 D1

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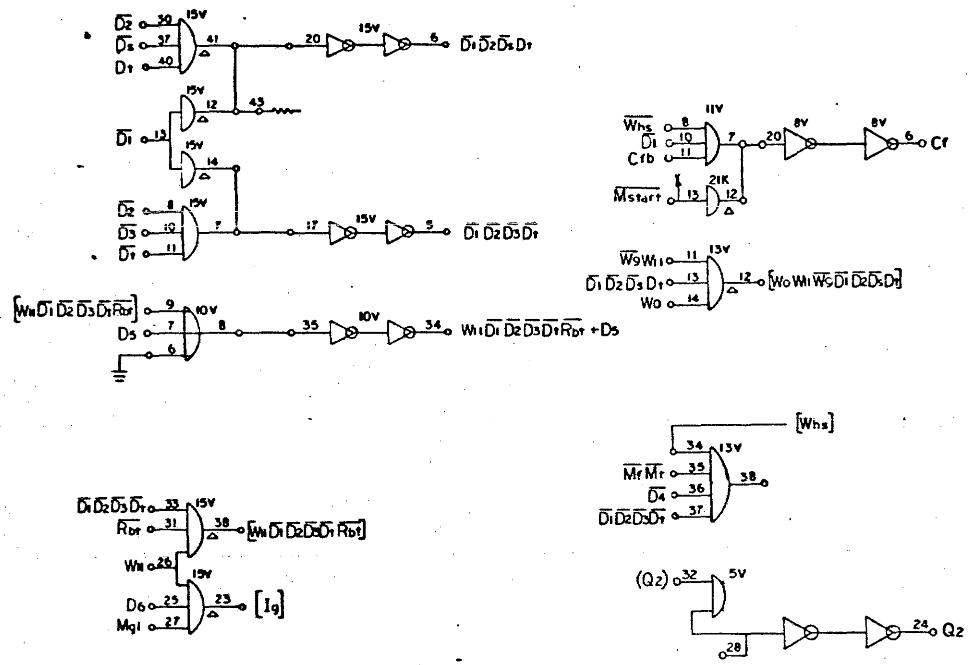
C	SEE REV. E.O.			
D	SEE REV E.O.			

103257 D



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92483 9248, 92481, 92482
TAPE CONTROL
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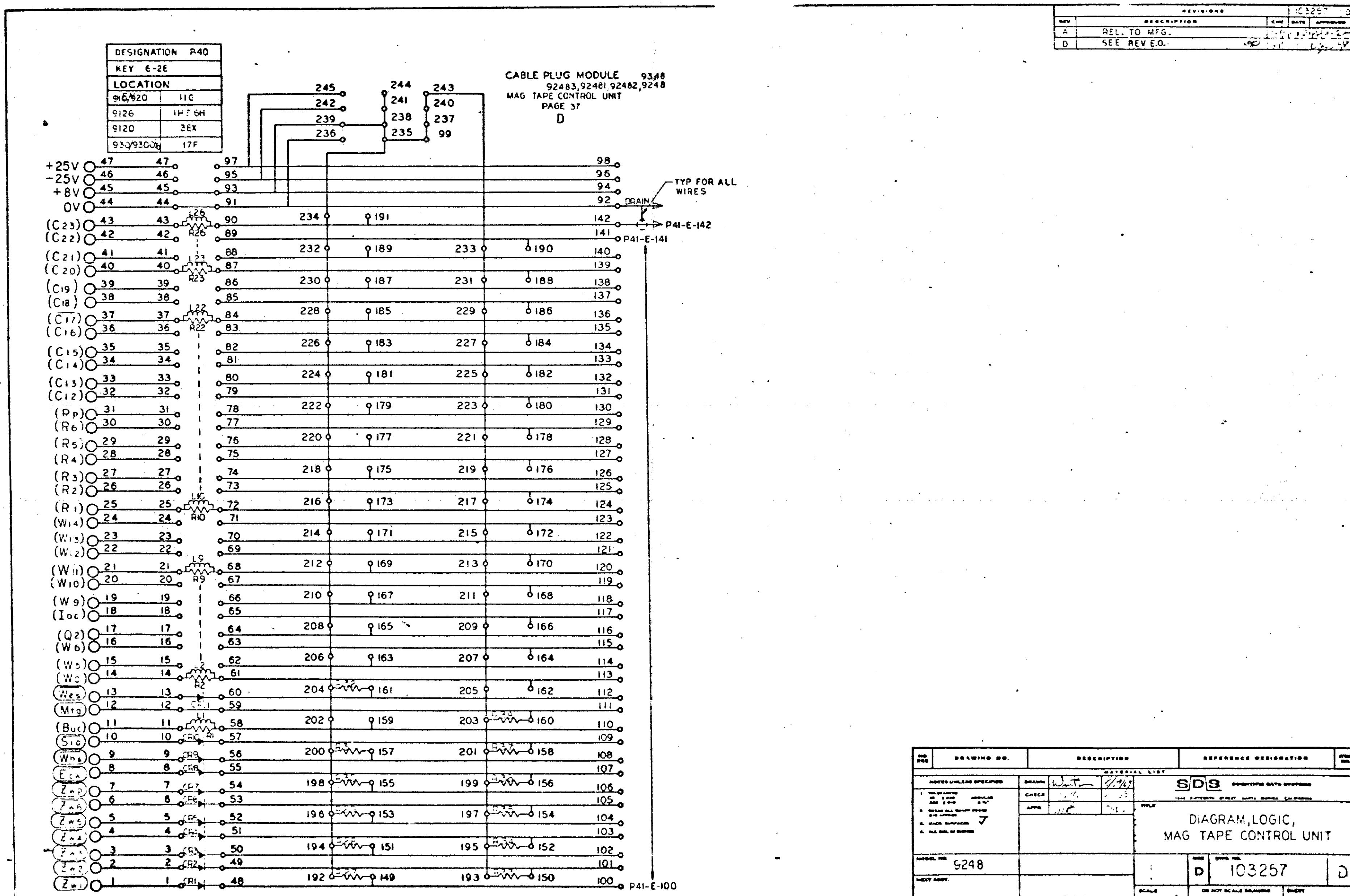
SDS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

9248

D 103257 C


DESIGNATION P40
KEY 6-2E
LOCATION
9126 | 1H 7 6H
9120 | 3EX
CABLE PLUG MODULE 9348
92483, 92481, 92482, 9248
MAG TAPE CONTROL UNIT
PAGE 37
D
+25V
-25V
+8V
0V
TYP FOR ALL WIRES
DRAIN
P41-E-142
P41-E-141
P41-E-100
REVISIONS
A REL. TO MFG.
D SEE REV E.O.
DRAWING NO.
DESCRIPTION
REFERENCE DESIGNATION
MATERIAL LIST
SDS
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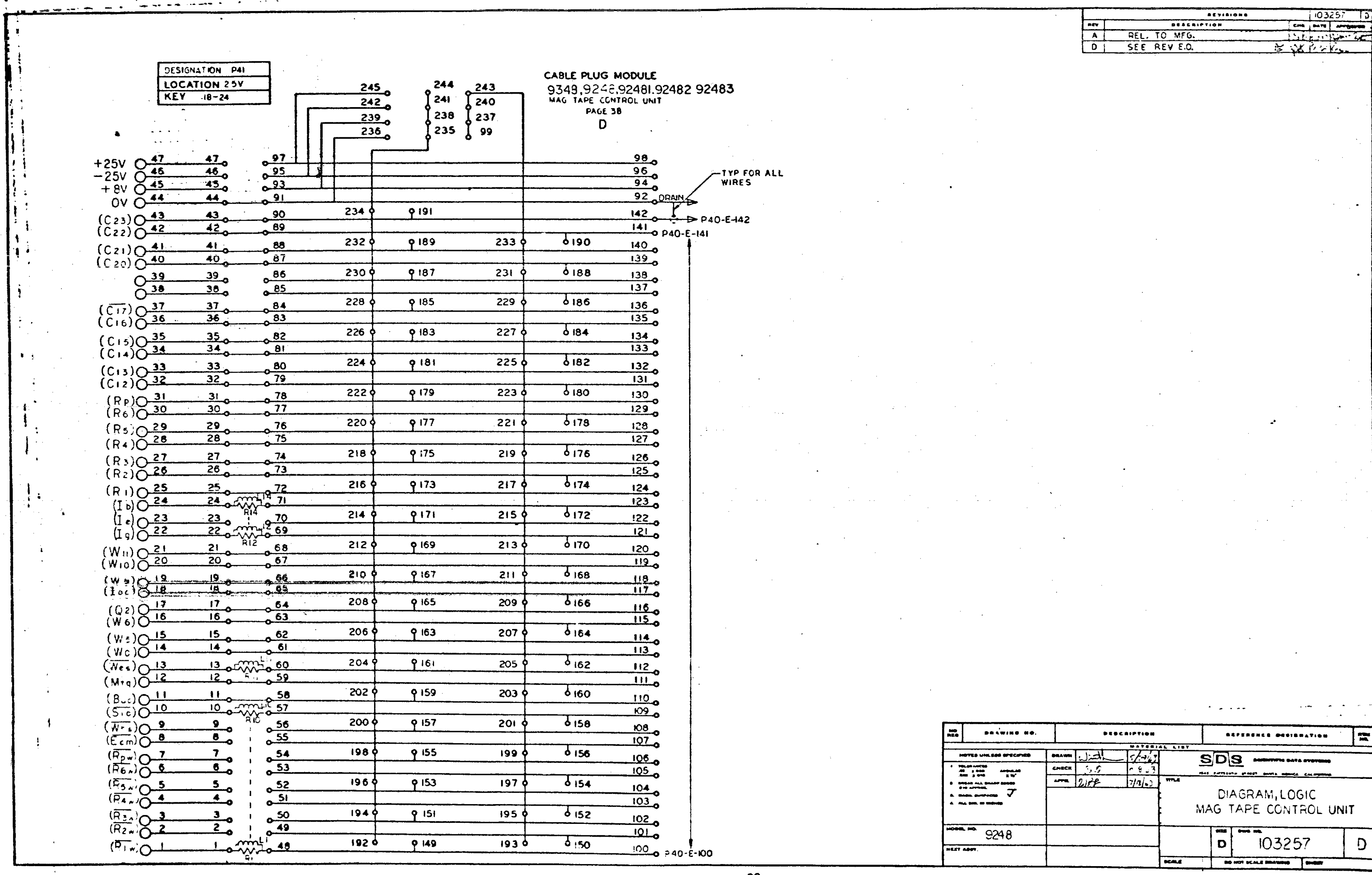
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LOCATION 25V
KEY 18-24
CABLE PLUG MODULE
9348,9248,92481,92482 92483
MAG TAPE CONTROL UNIT
PAGE 38
D
TYP FOR ALL WIRES
DRAIN
P40-E-142
P40-E-141
P40-E-100
+25V
−25V
+8V
0V
REV
DESCRIPTION
A
REL. TO MFG.
D
SEE REV E.O.
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D
DIAGRAM, LOGIC
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D

REV	DESCRIPTION
A	REL TO MFG
B	SEE REV E O
C	SEE REV. E.O.
D	SEE REV EO
E	SEE REV EO

PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG
1	E								
2	D								
3	D								
4	D								
5	E								
* 6	E								
** 7	E								
8	E								
9	E								
10	E								
11	E								
12	D								
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31	D								
32	E								
33	E								
34	E								
35	E								
36	E								
37	D								
38	D								
39	E								
40	E								

NOTES:

1. REV. LETTERS LISTED INDICATE STATUS OF EACH SHEET OF THIS MULTIPLE SHEET DRAWING.
2. CHECK INDIVIDUAL SHEETS FOR REVISION LETTER AGAINST THIS SHEET BEFORE USING THIS DRAWING.

* NOT USED ON 92481.

** NOT USED ON 92481, 9248.

REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 168)

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92483,9248,92481,92482
MAG TAPE CONTROL UNIT
PAGE 1
E

SDS

DIAGRAM, LOGIC
MAG TAPE CONTROL UNIT

MODEL NO. 9248

SIZE D — DWG NO. 103257 — E

103257 E

Change	Reason
103257A Remove Resistor R1 (47 K Ω) from location 9K from Pin 40 to Pin 47. Add wire from Pin 40 to Pin 43 location 9K. Refer to Logic page 22 OX14 Module used for 92483 models	EO 103140C EO 103403J 800 BPI Operation Cri Timing Change. 200 KΩ Resistor in OX13 is used instead of 47 KΩ external. See page 22 Addendum for One Shot Timing Adjustment change.
103257E Added resistor 220 Ω 1/2 watt part #100111-221 from Pin 10V26 to 10V44 on back of chassis.	EO 103140D EO 107512B Resistor added for Digital to stair case test point. See page 29E for logic change.

Signal	Logic Pages		Signal	Logic Pages		Signal	Logic Pages		Signal	Logic Pages		Signal	Logic Pages	
Ae	27	22	(C17)	37	28, 38	W11 R2b	21	10	(Mrs)	32		R5	21	
(Ae)		27	C17 C20	24	29, 30, 34, 35	(Ib)	36	38	M Start	29	8A, 13, 25, 28, 20, 32	(R5)	37	27, 38
Bor	27	9, 32	C17 C20	28	24, 30	(Ib)	36		M Start	25	8, 10, 11, 15, 16, 17, 28, 31	R5	27	19, 21
(Bor)		27	(C20)	37	28, 38	(Ie)	36	38	M Start Rbi	8	9	R6	21	15
Buc	37	29, 38	(C21)	37	35, 38	(Ie)		36	M Start Q2	30	10, 11, 12, 34	(R6)	37	27, 38
Cf	31	4, 5, 6, 7, 8, 10, 22	(C21)	35		Ig	28		(M Start Q2)	34		R6	27	19, 21
Cfba	5		(C22)	37	35, 38	(Ig)	35	38	Mtg	10	11, 38	[R1 R2]	19	
Cfbb	6		(C22)	35		Ig	35		Mtg	10		R1a	26	4, 18, 29
Cfbc	7		(C23)	37	35, 38	[Ig]	31	28	(Mtg)	36	30, 37	(R1a)		26
Cfb		31	(C23)	35		Ioc	37	30	(Mw)	32		R2a	26	4, 18, 29
Cfra	5		Da	26	4, 5, 25	Mc	22	8, 9, 29, 36	M1	14	33	(R2a)		26
Cfrb	6		Da	25	5	(Mc)	36		M1	14	21	R3a	26	4, 18, 29
Cfrc	7		(Da)	26		Mca	4		(M1)	33		(R3a)		26
Cfr		8	Db	26	4, 6, 25	(Mca)	34		M2	14	33	R4a	26	4, 18, 29
Cfsa	5		Db	25	6	Mca	4	34	M2	14	21	(R4a)		26
Cfsb	6		(Db)	26		Mcb	4		(M2)	33		R5a	26	4, 18, 29
Cfsc	7		Dc	26		Mcb		4	M3	15	33	(R5a)		26
Cfs		28	Dc	25	7	Mcc	4		M3	15	21	R6a	26	4, 18, 29
Cr	8	5, 29	(Dc)	26		Mcc		4	(M3)	33		(R6a)		26
Cr W5 W6	5	6, 7	Ds	13	12	Mcd	4	22	M4	15	33	R1b	16	19, 32
Cr + Cs	8D		Ds	13	10, 16, 31	M Control	30	13, 16, 34	M4	15	21	R1b	16	19, 21
Cr + W9 W11 Mc	8	9	Dt	13	10, 11, 30, 31	M Control	34		(M4)	33		R2b	16	19, 21, 22, 32
Cr + Cf W9 W11	8	13	Dt	13	11, 31	[Mcr]	29	28	M5	15	33	R2b	16	19, 21
Cri	22	28	D1	12	13, 22, 24, 32	Mcr	28	10	M5	15	21	R3b	17	19, 21
Cri + M Start	28	18	D1	25	8, 28, 31	Me	10	19, 22	(M5)	33		R3b	17	
Cs	27	8A, 9, 18, 22	D1 D2 D3 Dt	31	16, 21, 31, 32	Me	10	19, 22	M6	15	33	R4b	17	20, 21
Cs	28	9, 27	D1 D2 Ds Dt	31	11, 13, 29	Mf	10	11, 34	M6	15	21	R4b	17	19
C12	28	10, 34	D2	11	12, 13, 25, 30	Mf	10		(M6)	33		R5b	17	19, 21
(C12)	37	24, 34, 38	D2	25	12, 31	(Mf)	34		Q2	31	11, 13, 30	R5b	17	
CT2	24	10, 12, 28, 29	D2 + Dt	30	36	Mf Mr	11	12, 27, 31	(Q2)	37	31	R6b	17	20, 21
(CT2)	34		D3	11	13, 25	Mf + Mr	27	11, 31	R1	21	19	R6b	17	19
CT2 C13 C15 C16	29	13, 16, 30	D3	25	31	Mgi	13	31	(R1)	37	27, 38	[R1b R2b]	19	
(C13)	37	29, 35, 38	D4	11	25	Mgi	13		R1	27	19, 21	[R2b R1b]	19	
(CT3)	35		D4	25	11, 31	Mi	30	14, 15	R2	21	14, 19	R1m	18	14, 16, 23
C14	28	10, 16, 30, 34	D5	12	13, 31, 36	Mpc	21	22	(R2)	37	27, 38	R1m	18	16, 21, 23
(C14)	37	24, 38	D5	30A		Mp	14	33	R2	27	14, 19, 21	R1m*		23
CT4	24	10, 13, 28, 30	D6	12	22, 31	Mp	14	21	R3	21		R2m	18	14, 16, 23
(CT4)	34		(Ecm)	32	38	(Mp)	33		(R3)	37	27, 38	R2m	18	1t, 21, 23
(C15)	37	29, 35, 38	(Ecw)	37		Mr	10	11, 12, 29, 32, 34	R3	27	19, 21	R3m	18	15, 17, 23
(CT5)	35		Fb	4	9, 13	Mr	10		R4	21	15	R3m	18	17, 21, 23
(C16)	37	29, 35, 38	Gap	4	21	(Mr)	34		(R4)	37	27, 38	R4m	18	15, 17, 23
(CT6)	35		Gap + W9 W10			(Mre)	32		R4	27	15, 19, 21	R4m	18	17, 21, 23

First logic page listed is signal source

Signal	Logic Pages	
R5m	18	15, 17, 23
$\overline{\text{R5m}}$	18	17, 21, 23
R6m	18	15, 17, 23
$\overline{\text{R6m}}$	18	17, 21, 23
R1w	24	14
(R1w)		24
[R1w]		19, 20
$\overline{\text{R1w}}$		14
$\overline{(\text{R1w})}$	20	38
$\overline{(\text{R2w})}$	20	38
R3w	26	15
[R3w]		19, 20
$\overline{\text{R3w}}$		15
$\overline{(\text{R3w})}$	20	26, 38
$\overline{(\text{R4w})}$	20	38
R5w	28	15
[R5w]		19, 20
$\overline{\text{R5w}}$		15, 28
$\overline{(\text{R5w})}$	20	38
$\overline{(\text{R6w})}$	20	38
Rbi	16	8A, 28
$\overline{\text{Rbi}}$	16	8
Rcd	9	8, 14, 16, 22, 29, 30, 31
$\overline{\text{Rcd}}$	9	29

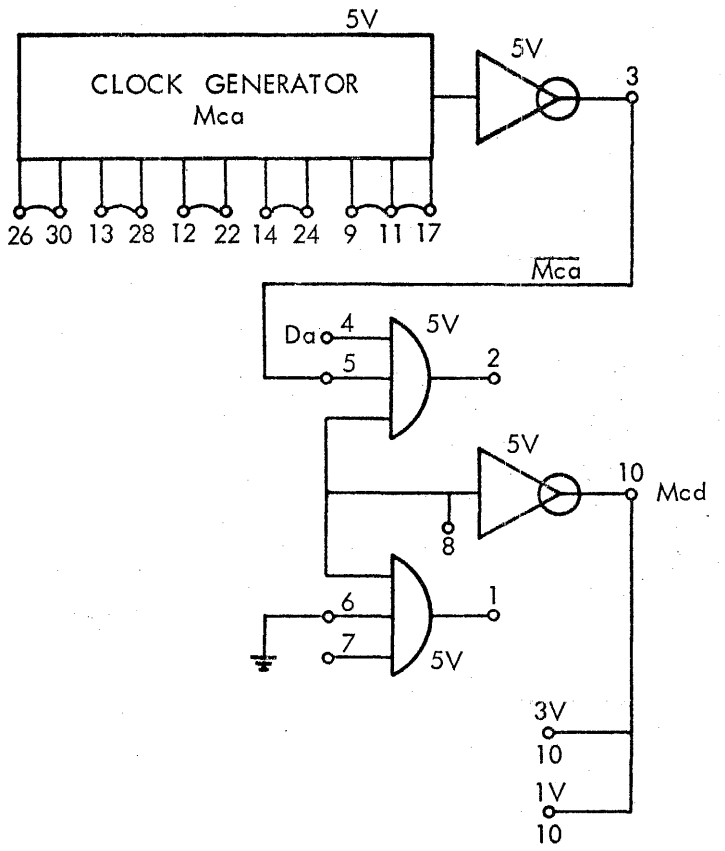
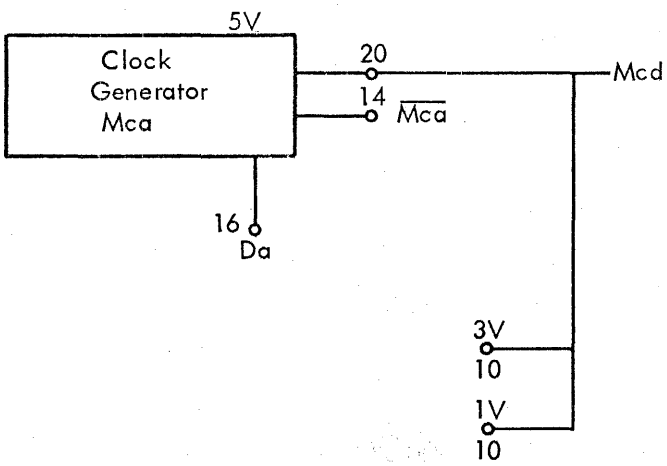
Signal	Logic Pages	
Rbt	9	
$\overline{\text{Rbt}}$	9	31
Rdm	18	22
$\overline{\text{Rdm}}$	18	22
Rfb	13	
$\overline{\text{Rfb}}$	13	4, 5, 6, 7, 29
Rfd	9	8, 22, 29
$\overline{\text{Rfd}}$	9	
$\overline{\text{Rfm}}$	21	14
Ri	29	16, 17, 22
Rpa	26	4, 18, 29
$\overline{(\text{Rpa})}$		26
Rp	21	19
(Rp)	37	27, 38
$\overline{\text{Rp}}$	27	19, 21
[$\overline{\text{Rp}}$ $\overline{\text{R2}}$]	19	
[Rp R2]	19	
Rpb	16	19, 22, 32
$\overline{\text{Rpb}}$	16	19, 21, 29
[Rpb $\overline{\text{R2b}}$]	19	
[$\overline{\text{Rpb}}$ $\overline{\text{R2b}}$]	19	
Rpc	21	22
Rpm	18	16, 23
$\overline{\text{Rpm}}$	18	16, 21, 23
Rpw	28	14, 20

Signal	Logic Pages	
[Rpw]		19, 20
$\overline{\text{Rpw}}$		14, 28
$\overline{(\text{Rpw})}$	20	38
Rse	9	22
$\overline{\text{Rse}}$	9	
Rsk	29	
$\overline{\text{RtM}}$	30	
Rtm	14	29, 30
$\overline{\text{Rtm}}$	14	
$\overline{\text{Rwe}}$	20	
Sio	28	36
$\overline{(\text{Sio})}$	36	37, 38
[$\overline{\text{Sio}}$]	30	28
(Siot)		26
$\overline{\text{Siot}}$	26	30
Wes	22	36
$\overline{(\text{Wes})}$	36	37, 38
(Whs)	36	32
[Whs]		27
$\overline{\text{Whs}}$	27	8, 28, 31, 36
$\overline{(\text{Whs})}$	32	
W0	25	11, 28, 31
(W0)	37	24, 28
$\overline{\text{W0}}$	24	13, 25
$\overline{\text{W0 Rbi}}$	28	32

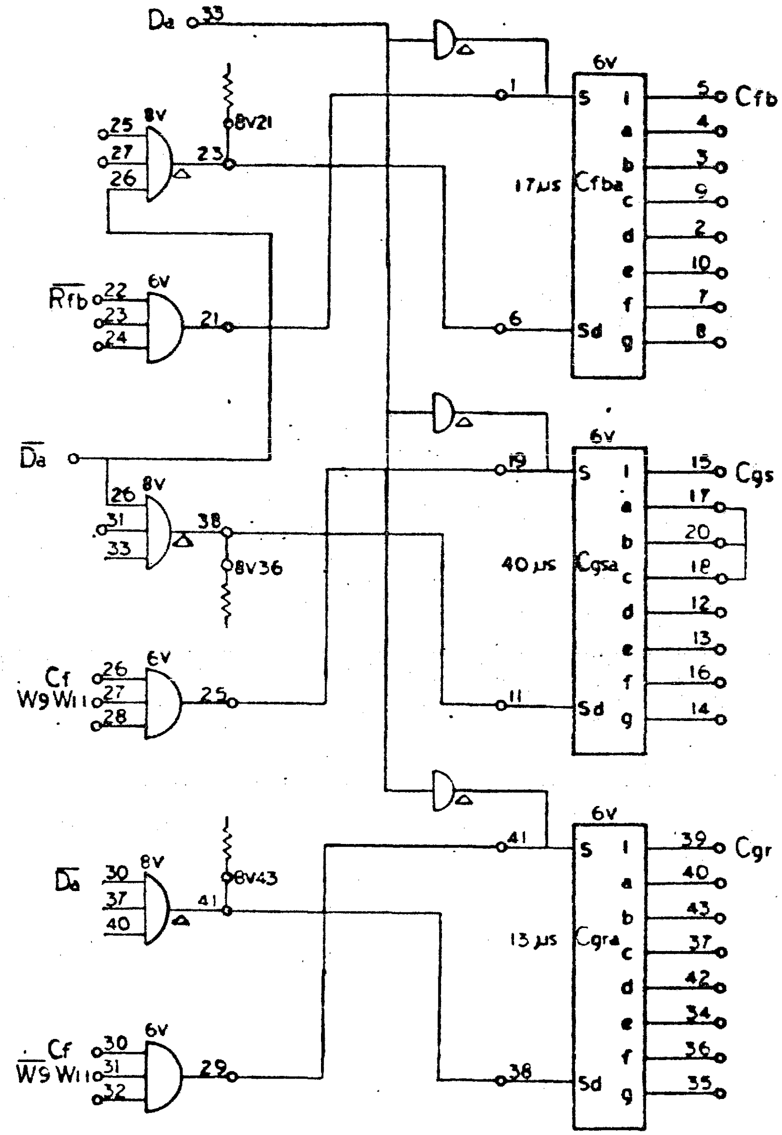
Signal	Logic Pages	
[W0 $\overline{\text{W9}}$ W11 $\overline{\text{DT}}$ → $\overline{\text{D2}}$ $\overline{\text{Ds}}$ Dt]	31	29
$\overline{\text{W0}}$ W5 $\overline{\text{W6}}$ W9 W11	11	16
$\overline{\text{W0 W5 W6 W9 W11}}$	11	
W5	28	11
(W5)	37	23, 38
$\overline{\text{W5}}$	28	5, 8, 9, 14, 29, 30, 32
($\overline{\text{W5}}$ $\overline{\text{W9}}$ W11 Rcd + W9 W11 Mc Rfd)	8	9
W6	25	5, 9, 30
(W6)	37	24, 38
$\overline{\text{W6}}$	24	11, 25, 32
W9	25	29
(W9)	37	24
$\overline{\text{W9}}$	24	10, 25, 29
W9 W11	29	4, 5, 6, 7, 8, 14, 19, 29, 30
W9 W11*	24	14, 15, 19, 22
W9 W11**	24	8, 9, 11, 13, 16, 21, 29, 32
$\overline{\text{W9}}$ W11	29	6, 7, 8, 31
$\overline{\text{W9}}$ W11*	25	14, 15, 16, 19
$\overline{\text{W9}}$ W11**		9, 11, 13, 16, 22, 32

Signal	Logic Pages	
$\overline{\text{W9 W11}}$	32	24, 33
W9 W11 Me	19	
W9 W11 $\overline{\text{Me}}$	19	
$\overline{\text{W9}}$ W11 Me	19	
$\overline{(\text{W9 W11})}$	32	
$\overline{\text{W9}}$ W11 $\overline{\text{Me}}$	19	
W10	25	21, 32
(W10)	37	24, 38
$\overline{\text{W10}}$	24	10, 25, 30
W11	24	29, 31
(W11)	37	24, 38
$\overline{\text{W11}}$	24	20, 25, 28, 32
W11 D1 D2 D3 → → $\overline{\text{Dt}}$ $\overline{\text{Rbt}}$ + D5	31	13, 18
[$\overline{\text{W11}}$ $\overline{\text{M Start}}$]		29
$\overline{\text{W11 M Start}}$	28	13
Xp, $\overline{\text{Xp}}$, Yp, $\overline{\text{Yp}}$	23	
Zp	23	22
$\overline{\text{Zp}}$		22
(W12), (W13), (W14)	37	
($\overline{\text{Zw1}}$) thru ($\overline{\text{Zw6}}$)	37	
($\overline{\text{Zwp}}$)	37	

First logic page listed is signal source

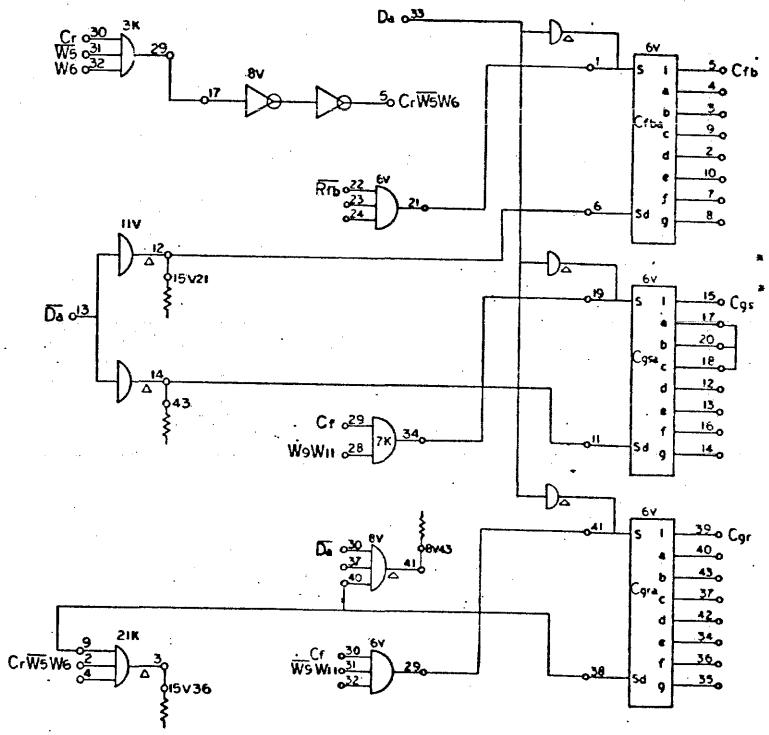
Change	Reason
103257A 5V is CX13  103257B 5V is CK52 	EO 103403B EO 103514B CX13 Clock Generator is not stable at 15KC. CX13 in location 5V was changed to a CK52. 9248 S/N 101 is only unit built with CX13.

Change	Reason
Major logic change from A to C logic revision level. Change D adds timing chart. See Page 5 A and D revision.	EO 103403F In earlier systems, characters were lost when reading high density (556 Bpi) tapes without Interlace. That is reading the remaining characters in a long block when the interlace count had reached "0". Cr and $\overline{W5}$ W6 Q2 were setting and resetting Rcd at the same time.
Relocation of Cf W9 W11 Gate on D Revision to E Revision. Location 6V to 7K. Also added new timing adjustment chart on the E revision logic level.	EO 103403S (for 92483) EO 107514H To insure compatibility between tape units at 800 Bpi operation. Change tightens the allowable write character skew.



9248
TAPE CONTROL
PAGE 5
A

REVISIONS			103257	E
REV	DESCRIPTION			
A	REL TO SPEC			
C	SEE REV. E.O.			
D	SEE REV EQ			
E	SEE REV EQ			



SIGNAL	12KC	15KC	24KC	33.3KC	41.7KC	66.7KC	48KC	60KC	96KC	
CHARACTER TIME	83.2us	67us	41.6us	30us	24us	15us	20.8us	16.7us	10.4us	
GAP DETECTOR	185us	150us	95us	67us	54us	34us	46us	37us	23us	7V14
DENSITY / SPEED	200/60	200/75	200/120	556/60	556/75	556/120	800/60	800/75	800/120	
Cfb	20us	17us	11us	8us	6us	4us	5us	4us	2us	
Cfb Cgs SUM	60us	51us	32us	23us	18us	11us	15us	12us	8us	
Cfb Cgr SUM	40us	34us	22us	16us	12us	8us	10us	8us	5us	
D5	425us	350us	250us	425us	350us	250us	425us	350us	250us	2K15
D1	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	2K5
D2	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	3K15
D3	20ms	20ms	8ms	20ms	20ms	8ms	20ms	20ms	8ms	3K39
Crl	0.5us	←							0.5us	9K39
D4	14ms	←							14ms	3K5
D6	10us	←							10us	2K39

* TIMES GIVEN FOR Cgs & Cgr ARE TIMED TO FALL OF Cgs OR Cgr FROM RISE OF Cfb

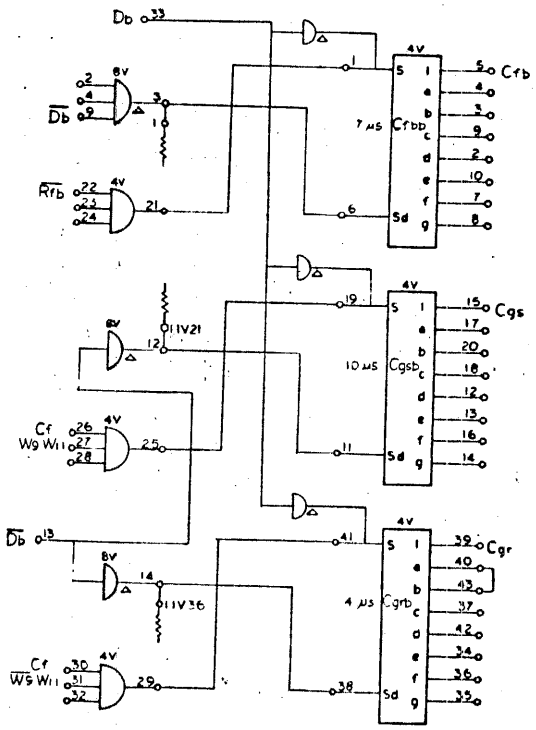
9348, 9248, 92481, 92482, 92483
TAPE CONTROL
PAGE 5
E

DRAWING NO	DESCRIPTION	MATERIAL DESIGNATIONS	
NOTES UNLESS SPECIFIED	DRAWN		SDS
	CHECK		
	APPR	7/14/63	
MODEL NO 9248			DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT
NEXT ASSY			SIZE D 103257 E
			SCALE

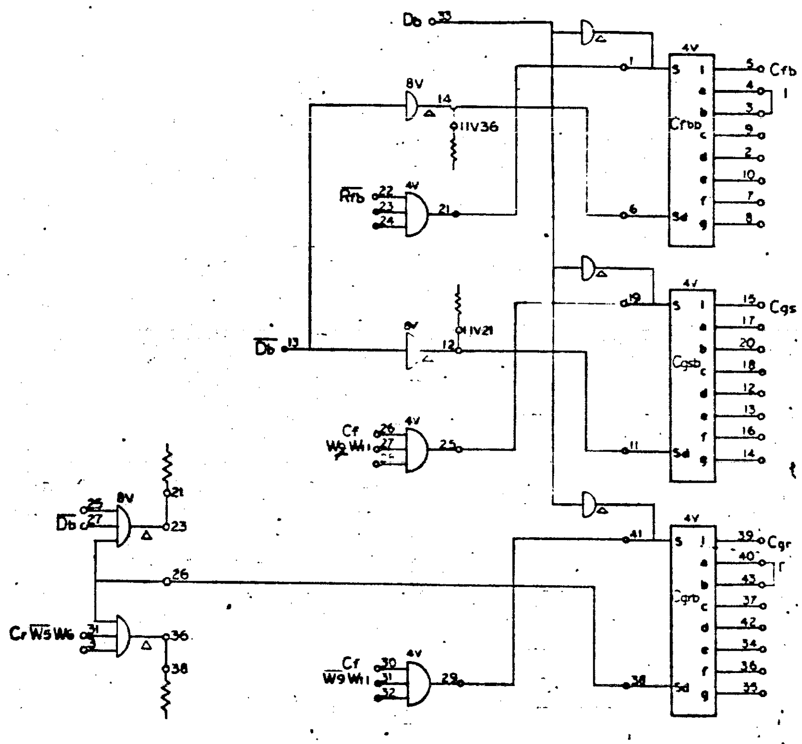
103257 E

Change	Reason
Major logic change from A to C logic revision. Change D adds timing chart. See Page 5 A & D revision.	EO 103403F See Page 5 addendum sheet Item 1 for reason.
Added jumper between 4V4 and 4V3 on D revision to E revision. Deleted jumper between 4V40 and 4V43 on D revision to E revision. Also added new timing adjustment chart on the E revision logic level.	EO 107514H for 92483 only allows adjustment of Cfbb to new range. EO 103403S for all but 92483 allows adjustment of Cgrb to new range. EO 103403S EO 107514H (92483 only). See Page 5 addendum sheet Item 2 for reason.

CX-11


Db
Rfb
Cf
W9 W11
Db
Cf
W9 W11
8V
4V
7 µs
Cfbd
10 µs
Cgsb
4 µs
Cgrb
Sd
Cfb
Cgs
Cgr
111V21
111V36

REV	DESCRIPTION
A	REL. TO MFG.
C	SEE REV. E.O.
D	SEE REV E.O.
E	SEE REV E.O.



SIGNAL	12KC	15KC	24KC	33.3KC	41.7KC	66.7KC	48KC	60KC	96KC	
CHARACTER TIME	63.2us	67us	41.6us	30us	24us	15us	20.3us	16.7us	10.4us	
GAP DETECTOR	185us	150us	95us	67us	54us	34us	46us	37us	23us	7V14
DENSITY / SPEED	200/60	200/75	200/120	556/60	556/75	556/120	800/60	800/75	800/120	
Cfb	20us	17us	11us	8us	6us	4us	5us	4us	2us	[illegible]
* Cfb + Cgs SUM	60us	51us	32us	23us	18us	11us	15us	12us	8us	[illegible]
* Cfb + Cgr SUM	40us	34us	22us	16us	12us	8us	10us	8us	5us	[illegible]
D5	425us	350us	250us	425us	350us	250us	425us	350us	250us	2K15
D1	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	2K5
D2	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	3K15
D3	20ms	20ms	8ms	20ms	20ms	8ms	20ms	20ms	8ms	3K39
Crt	0.5us	←						→	0.5us	9K39
D4	14ms	←						→	14ms	3K5
D6	10us	←						→	10us	2K39

* TIMES GIVEN FOR Cgs & Cgr ARE TIMED TO FALL OF Cgs OR Cgr FROM RISE OF Cfb

① 92483 ONLY

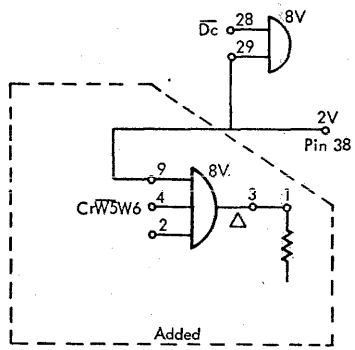
9348, 9248, 92482, 92483
TAPE CONTROL
PAGE 6
E

SDS

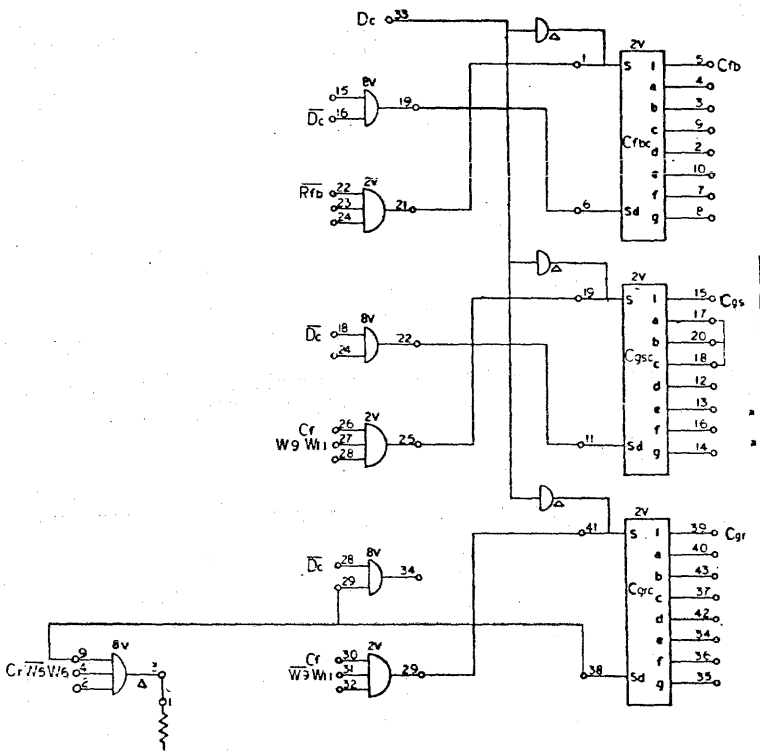
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

9248

D 103257 E

Change	Reason
From A to C logic revision level added OR function to DC set input of Cgrc. 	EO 103403F See Page 5 addendum sheet Item 1 for reason.
Added timing chart from C logic revision to D logic revision.	Refer to Page 5D logic revision.
From D to E revision, added jumpers between pins 17, 18 and 20 location 2V. Also added new timing adjustment chart on the E revision logic level. OX14 Module replaces OX13 Module in location 2V to meet new timing adjustment. Module not used in 9248 or 92481.	EO 103403S EO 107514H (92483 only) See Page 5 addendum sheet Item 2 for reason. EO 107536B - 92482 EO 107537B - 92483 EO 107538B - 9348

REV	DESCRIPTION	DATE	APPROVED
	103257		E
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		
E	SEE REV EO		



SIGNAL	12KC	15KC	24KC	33.3KC	41.7KC	66.7KC	48KC	60KC	96KC	
CHARACTER TIME	83.2us	67us	41.6us	30us	24us	15us	20.8us	16.7us	10.4us	
GAP DETECTOR	185us	150us	95us	67us	54us	34us	46us	37us	23us	7V14
DENSITY / SPEED	200/50	200/75	200/120	556/60	556/75	556/120	800/60	800/75	800/120	
Cfb	20us	17us	11us	8us	6us	4us	5us	4us	2us	
* Cfb, Cgs SUM	60us	51us	32us	23us	18us	11us	15us	12us	8us	
* Cfb, Cgr SUM	40us	34us	22us	16us	12us	8us	10us	8us	5us	
D5	425us	350us	250us	425us	350us	250us	425us	350us	250us	2K15
D1	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	6ms	4.7ms	3.8ms	2K5
D2	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	1.6ms	1.6ms	1.0ms	3K15
D3	20ms	20ms	8ms	20ms	20ms	8ms	20ms	20ms	8ms	3K39
Cri	0.5us ←								0.5us	9K39
D4	14ms ←								14ms	3K5
D6	10us ←								10us	2K39

* TIMES GIVEN FOR Cgs & Cgr ARE TIMED TO FALL OF Cgs OR Cgr FROM RISE OF Cfb

9348,
92482,92483
TAPE CONTROL
PAGE 7
E

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN | CHECK | APPR

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

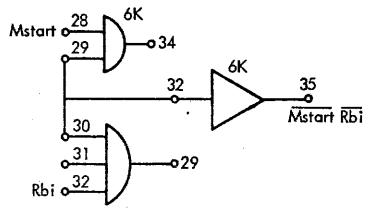
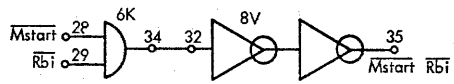
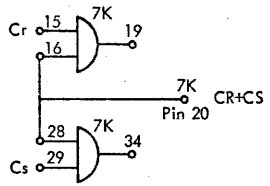
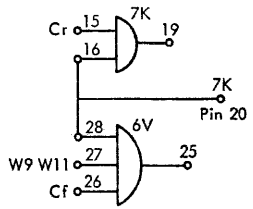
MODEL NO 9248

NEXT ASSY

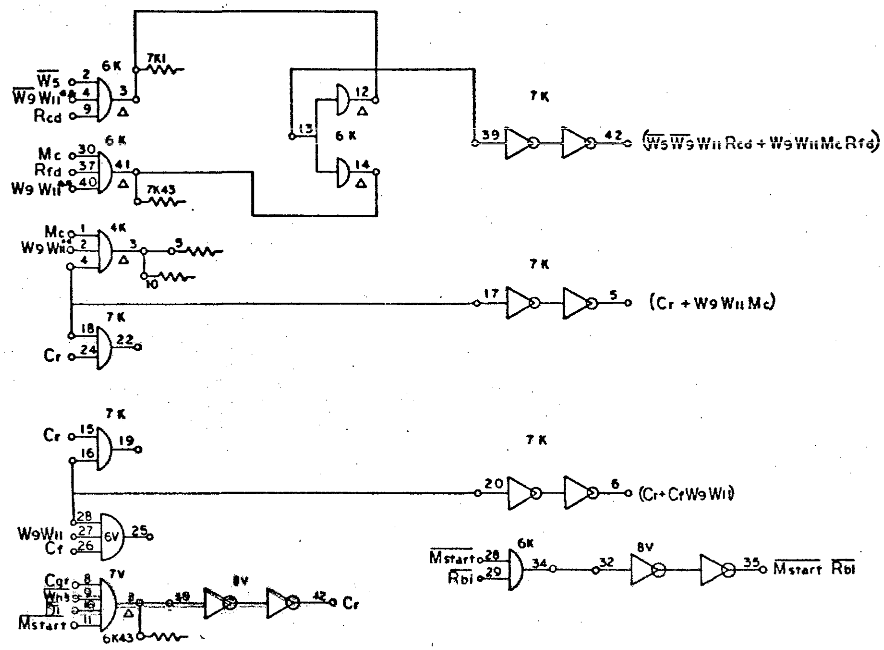
SIZE D | DWG NO 103257 | E

SCALE | DO NOT SCALE DRAWING | SHEET 7

103257 E

Change	Reason
103257A  103257C  	EO 103403F See page 5 Addendum Sheet Item 1 for reason.
103257C  103257E  	EO 103403S EO 107514H See page 5 Addendum Sheet Item 2 for reason

REV	DESCRIPTION	103257	E
A	REL. TO MFG.		
C	SEE REV. E.O.		
D	SEE REV E.O.		
E	SEE REV EO		



9348,
92483,9248,92481,92482

TAPE CONTROL

PAGE 8
E

103257 | E

MATERIAL LIST			
DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	

SDS SCIENTIFIC DATA SYSTEMS

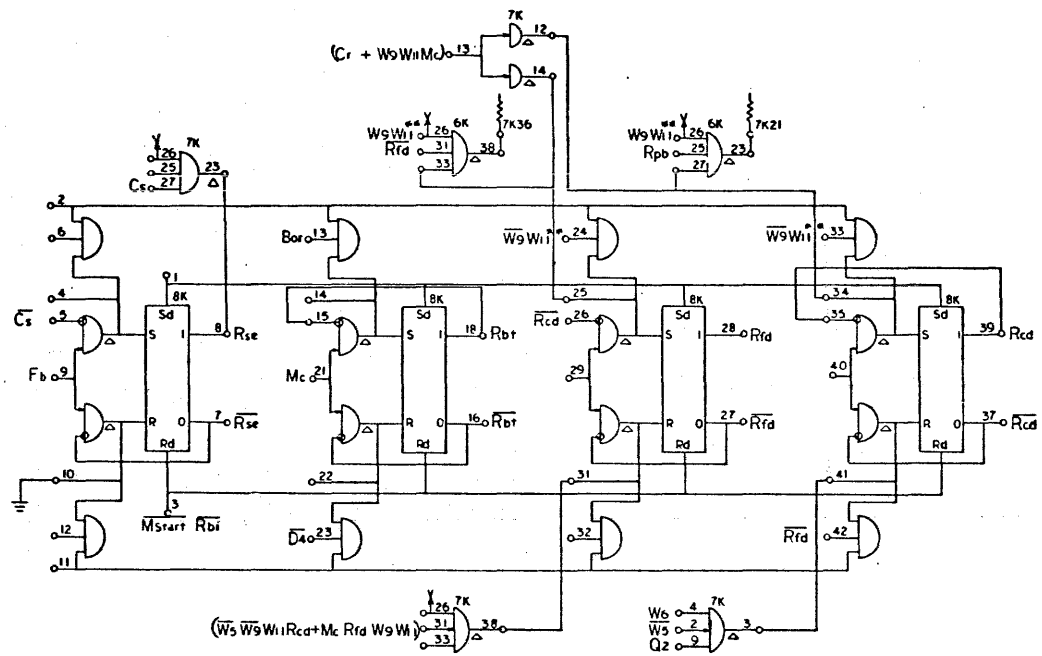
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO. 9248

D 103257 E

Change	Reason
No logic changes made from A revision thru D revision.	EO 1034035 EO 107514H (92483 only).
From D revision to E revision changed clock input signal to Rse flip-flop from Rsk to Fb.	See Page 5 addendum sheet Item 2 for reason.

REVISIONS			103257 E
REV	DESCRIPTION	CHK	DATE / APPROVED
A	REL. TO MFG.		
D	SEE REV E.O.		
E	SEE REV EO		



9348.
92483,9248,92481,92482
TAPE CONTROL
PAGE 9
E

103257 E

NO REQ	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPD

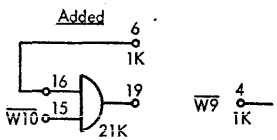
SDS SCIENTIFIC DATA SYSTEMS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

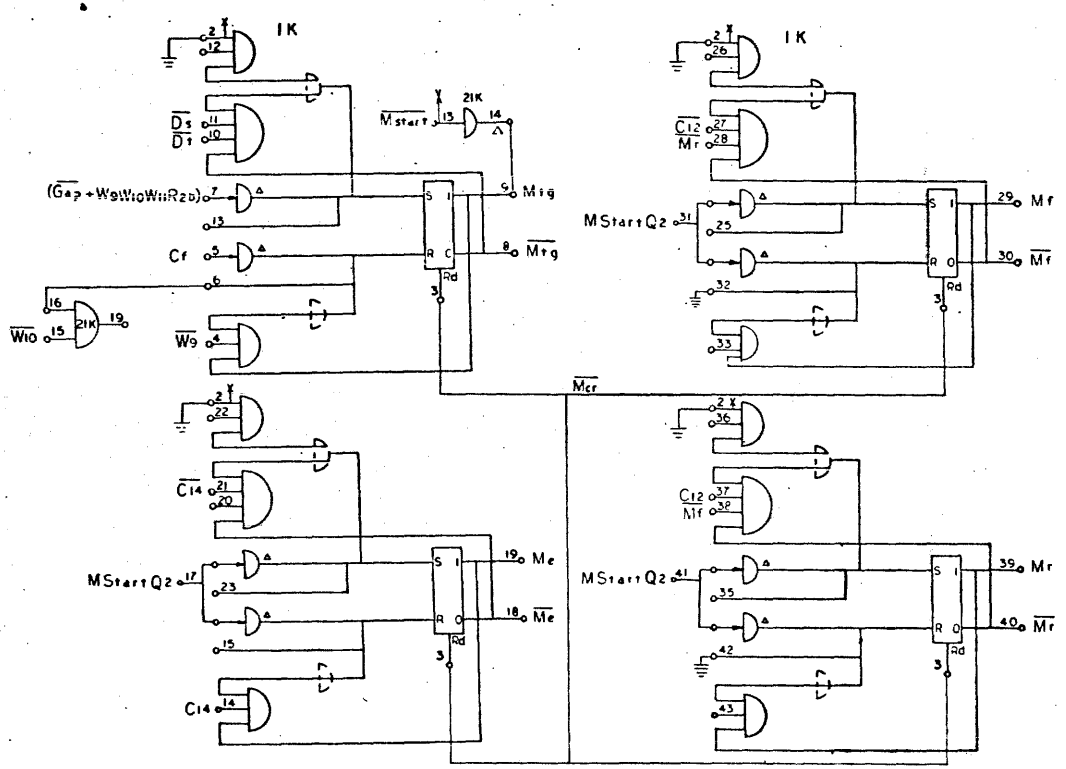
MODEL NO 9248
NEXT ASSY

SIZE D | DWG NO. 103257 | E

SCALE DO NOT SCALE DRAWING SHEET 9

Change	Reason
No logic changes made from A thru D revision. On E revision added $\overline{W10}$ or $\overline{W9}$ input to reset Mtg flip-flop. Added  	EO 103403M EO 107514D (92483 only). To correct logic timing error in erase reverse operation.

REV	DESCRIPTION	103257	E
A	RELEASED		
D	SEE REV EO		
E	SEE REV EO		



9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 10
E

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION
MATERIAL LIST		

NOTES UNLESS SPECIFIED

MODEL NO 9248

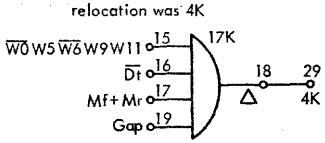
SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

SIZE D | DWG NO 103257 | E

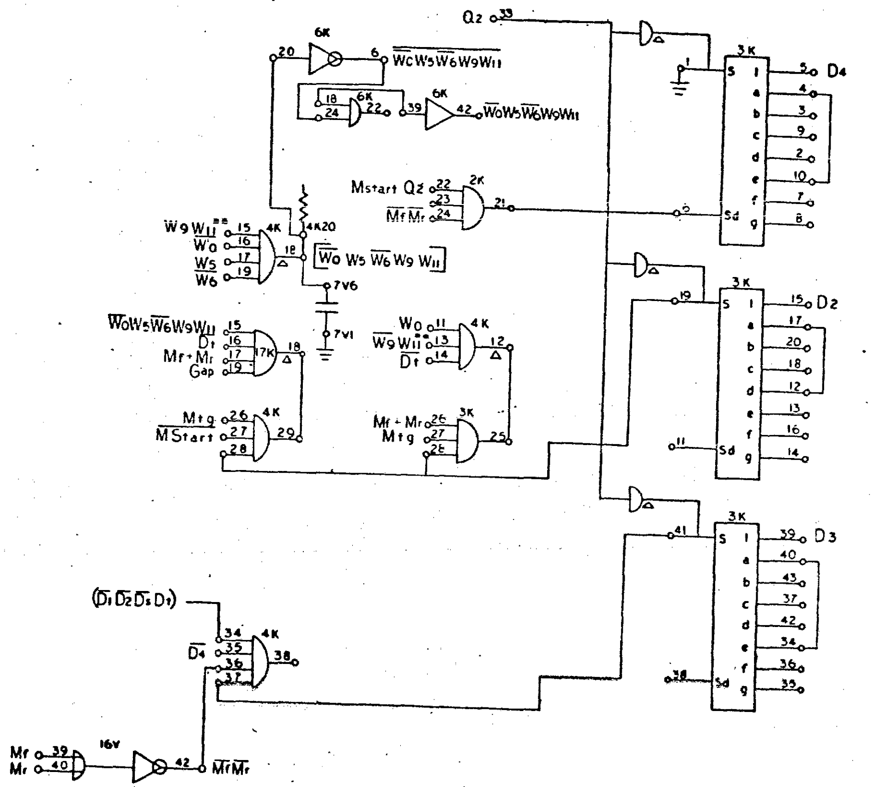
SCALE | DO NOT SCALE DRAWING | SHEET

103257 E

Change	Reason
From A to D logic change switched input to D4 onshot from auxiliary input (pin 1) to D.C. set input (pin 6). Added ground to pin 1 location 3K. From A to D logic change eliminated OR function to auxiliary set of D3 one-shot for model 92483 Also added timing chart for one shot settings. Refer to D Logic revision.	EO 103403E To trigger D4 on leading edge of M start Q2 avoiding timing race condition. EO 107514A Effective with first release and shipment of 92483 model Nos.
From D to E logic change. (A) Changed timing adjustment chart for D3 one shot. (B) Removed time select connection to 3K Pin 43 D3 one-shot. (C) Removed $\overline{W9}$ W11** $\overline{W0}$ and gate circuitry OR function circuit from setting D3 and deleted note 1. (D) Relocated AND gate to location 17K to pick up Gap. relocation was 4K  	EO 103403R EO 107514G (92483 only). On reverse erase, unit is stopping prematurely and leaving previously written information. This change keeps unit erasing until read head sees Gap and buffer clocking is finished. EO 103403P Not listed on left from D to E logic level, deletes circuitry covered by note (1) and transfers circuitry to Page 13.

REV	DESCRIPTION
A	REL. TO MFG
D	SEE REV E.O.
E	SEE REV EO

103257 E



ONE SHOT SETTING

MODEL	D4	D2	D3
9248	14ms	1.6ms	20ms
92481			20ms
92482		1.6ms	1*
92483		1.0ms	8ms
9348	14ms	1.6ms	20ms

1* 92482A—20ms
92482P—8ms

9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 11
E

SDS

DIAGRAM, LOGIC,
MAG. TAPE CONTROL UNIT

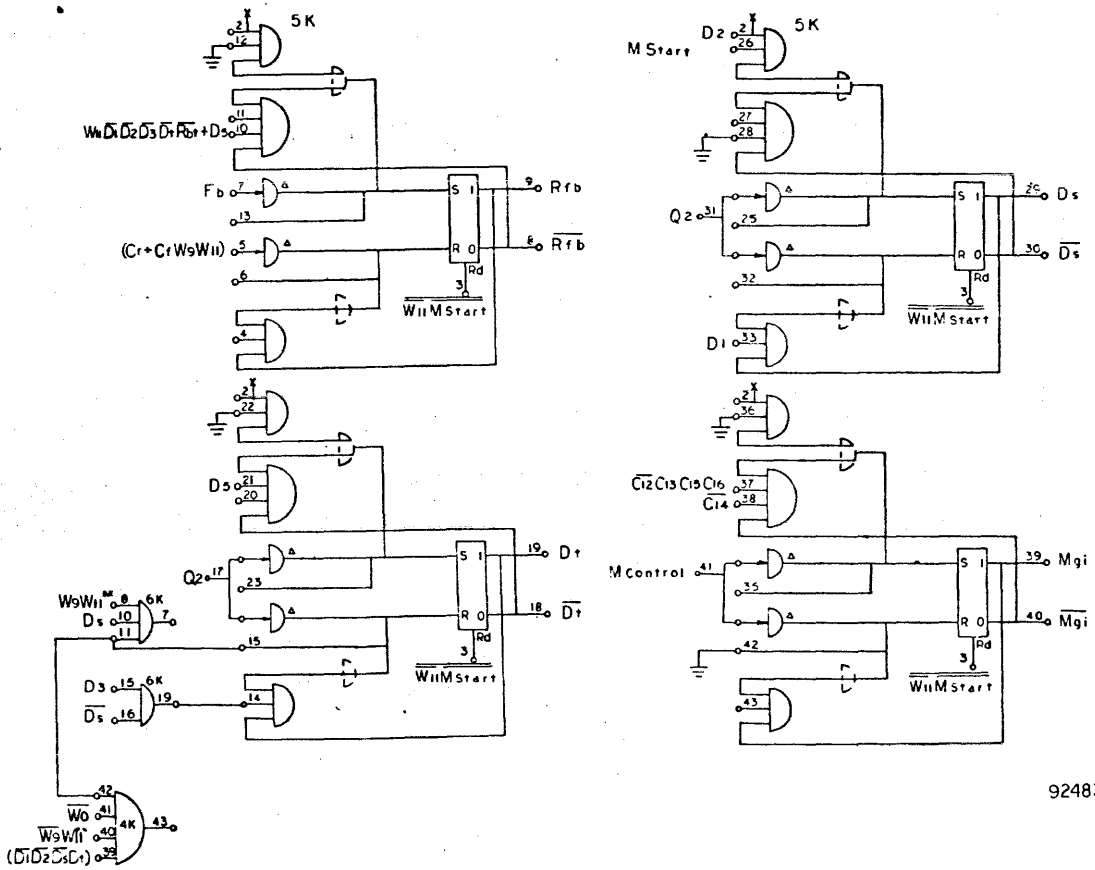
MODEL NO 9248

SIZE D | DWG NO 103257 | E

103257 E

Change	Reason
	EO 103403E
From A to C logic revision removed $\overline{W10}$ to Pin 15 location 21K. Reset term Dt flip-flop.	To trigger D4 or leading edge of M start Q2 avoiding timing race condition.
	EO 107514A
From C to D logic revision added additional OR function to reset term of Dt flip-flop for 92483 models only.	Effective with release and shipment of first 92483 model Nos. See D revision logic.
	EO 103403M
From D to E revision logic deleted 21K Pins 15, 16 & 19 and added W9 W11 term to 6K Pin 8.	Relocation of components only, no logical change.
	EO 103043P
Adds circuitry covered by note (11) D revision logic to all model Nos. on E revision.	Relocated from logic revision level D Page 11 for all models. To overcome tape creep problems.

REVISION NO.		103257	S
REV	DESCRIPTION	ECN	DATE	APPROVED
A	REL TO MFG			
C	SEE REV E.O.			
D	SEE REV E.O.			
E	SEE REV EO			



9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 13
E

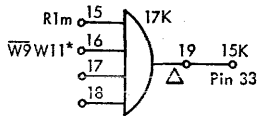
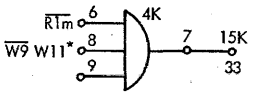
103257 E

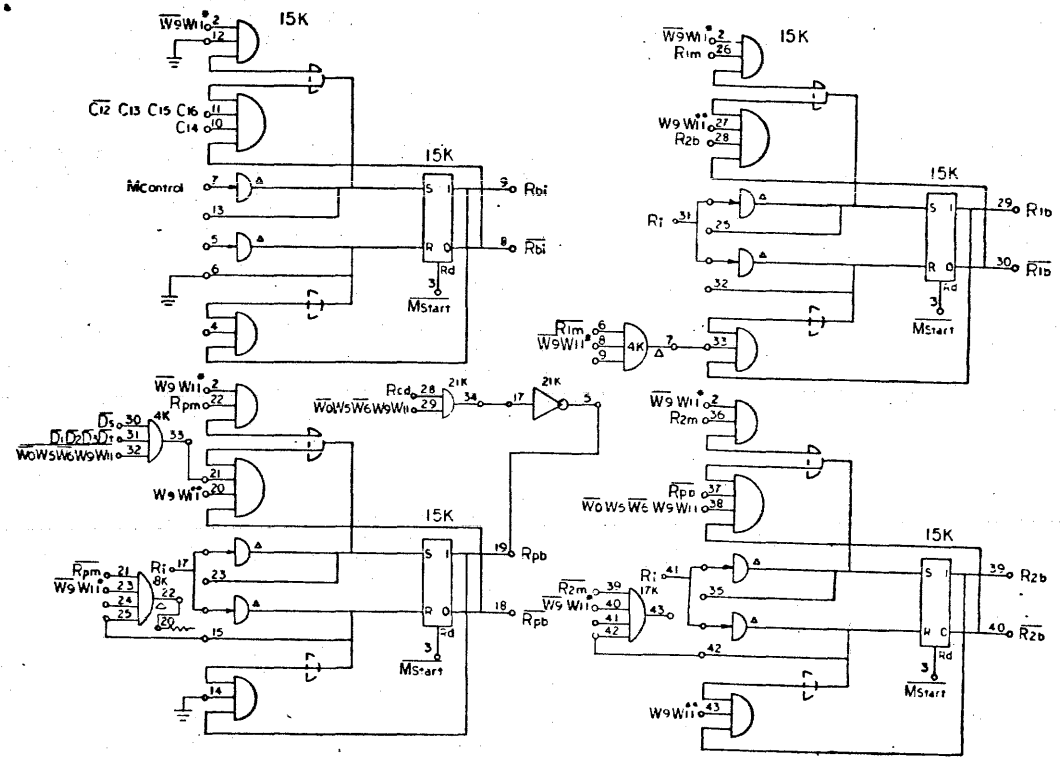
DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATIONS
NOTES UNLESS SPECIFIED	MATERIAL LIST	
	DRAWN	
	CHECK	
	APPR	

SDS

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO	SIZE	DWG NO	REV
9248	D	103257	E

Change	Reason
From A through D revision level of logic, no changes. From D to E revision level of logic: 103257D  103257E  	EO 103403R EO 107514G (92483 only) Rearrangement of components to pick up extra diode. No logic change. Part of reverse erase problem leaving previously written information.



9348
92483,9248,92481 92482
TAPE CONTROL
PAGE 16
E

REV	DESCRIPTION	DATE	APPROVED
C	SEE REV E.O.		
D	SEE REV E.O.		
E	SEE REV E.O.		

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATIONS
MATERIAL LIST			

NOTES UNLESS SPECIFIED

SDS

DIAGRAM, LOGIC,
MAG. TAPE CONTROL UNIT

MODEL NO 9248

NEXT ASSY

SIZE D | DWG NO 103257 | REV E

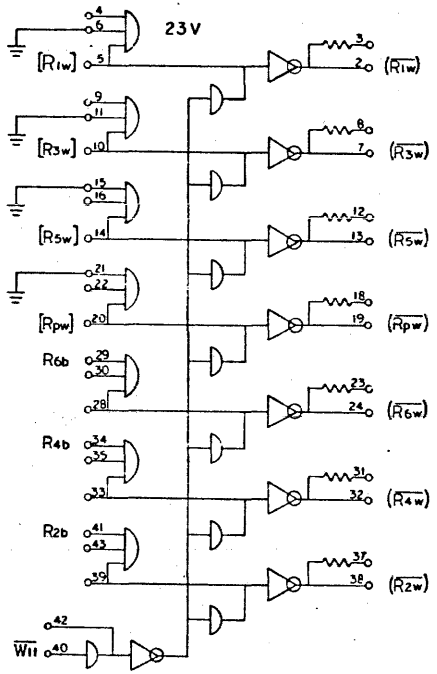
SCALE

SHEET

103257 F1

Change	Reason
From A thru D logic revisions, no changes. From D to E logic revision, major logic change in gating RW signals. Compare logic revisions D & E.	EO 103403M EO 107514D (92483 only) To correct logic timing error on erase reverse operation

REVISIONS			103257 E
REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
D	SEE REV E.O.		
E	SEE REV EO		



9348
92483,9248,92481,92482
TAPE CONTROL
PAGE 20
E

NO REQ	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

MODEL NO 9248

NEXT ASSY

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

SIZE D | DWG NO 103257 | E

SCALE | DO NOT SCALE DRAWING | SHEET

103257 E1

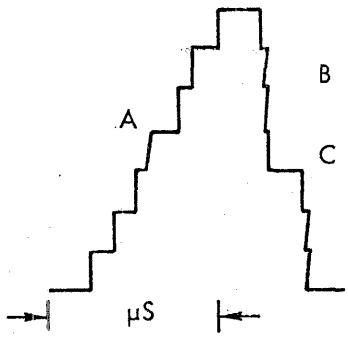
Change	Reason
From A to D logic change deleted 47KΩ resistor from 9K pin 40 to pin 47 (+25v).	EO 103140C EO 103403J EO 107514A
Added jumper from 9K pin 40 to 9K pin 43.	Uses 220K resistor in OX13 module instead of 47K external for timing increase change.
.5 µsec time change to 2.0 µs except for 92483 which uses OX14 module in 9K. With 92483 use .5 µsec.	OX14 module effective on first 92483 shipped.
From D to E logic change all models use OX14 in location 9K and hence all have Cri signal set at .5 µsec.	EO 103403L EO 103140D EO 103403S
Deleted jumper between 9K17 and 9K20. Added jumpers between 9K pins 3, 4 and 9.	OX13 module in location 9K changed to OX14.
	EO 107514H (92483 only)
	92483 has OX14 and is not affected.
	Cri now .5 µsec on all models.
From D to E	DONE 7 NOV 75 EO 103403L EO 107514C
Adds buffered signal to set Wes one-shot. Set side was DC input, is now auxiliary input.	One-shot (Wes) being triggered by noise causing false errors in multi unit systems.
Compare D and E logic.	

Change	Reason
No logic changes from A logic to D logic revision level.	
From D to E logic revision levels major changes were made. Compare D and E logic.	
Added additional OR gate input to Ri at pin 31 10v, removed ground to pin 31.	EO 103403M EO 107514D (92483 only) To correct timing error in erase reverse operation.
Eliminated Rsk signal and combined Rpa and R1a through R6a into an analog test gate. Resistor added from 10v pin 26 to ground is 220 Ω . An explanation of the test gate is offered on page 29 Addendum B.	EO 103043S EO 103140D EO 107514H EO 107512B 92483 only To insure interchangeability between tape units at 800 BPI. Write skew error detection was tightened to tighten allowable write character skew.

10V Pin 26 Analog to Staircase Converter

The "OR" gate which was once RSK, is now used to detect the quality of the electrical deskew. The driven logic has been replaced with a 220 ohm resistor load. The value has been adjusted such that each bit as it occurs will cause a step of about one volt in amplitude. In the case of an all "ones" frame the converter will generate a signal staircase with a maximum of seven volts.

The leading edge of the waveform reflects the head mechanical misalignment, (gap scatter and gap are differential), for both the read and write head. The trailing edge shows how well the electrical compensation for these characteristics was accomplished.



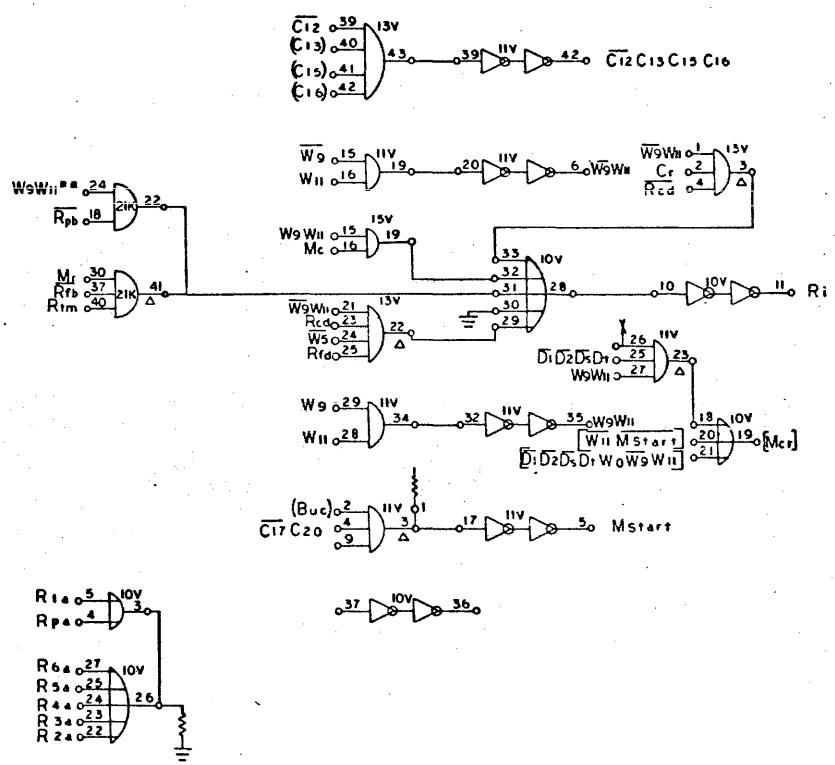
Staircase A, during the read pass of an "all ones" tape, is a measure of the skew in microseconds. This value will be in the order of up to 2 or 3 microseconds.

Sfaircase B exclusive of Point C would show how well the read deskew has been done. Point C would exist if one adjustment has been missed or incorrectly done. Although this differential is easily seen at the test point, readjustments are quite inaccurate and should not be attempted using only the test point. It is basically for qualitative checking.

If the tape unit is put in the "test mode" after read deskew, the write head scatter can be seen. This measurement would show if the misalignment is too bad to respond to any compensation.

After the alignment of write deskew, the test point will again show the quality of deskew. At 800 BPI this uncompensated deskew should be less than 1.5 µs when observing the signal developed by an exerciser pass.

REVISIONS				103257 E
REV	DESCRIPTION	CHG	DATE	APPROVED
A	REL TO MFG			
D	SEE REV ED			
E	SEE REV EC			



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92483,9248,92481,92482
TAPE CONTROL
PAGE 29
E

DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION

MATERIAL LIST

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPR

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO. 9248

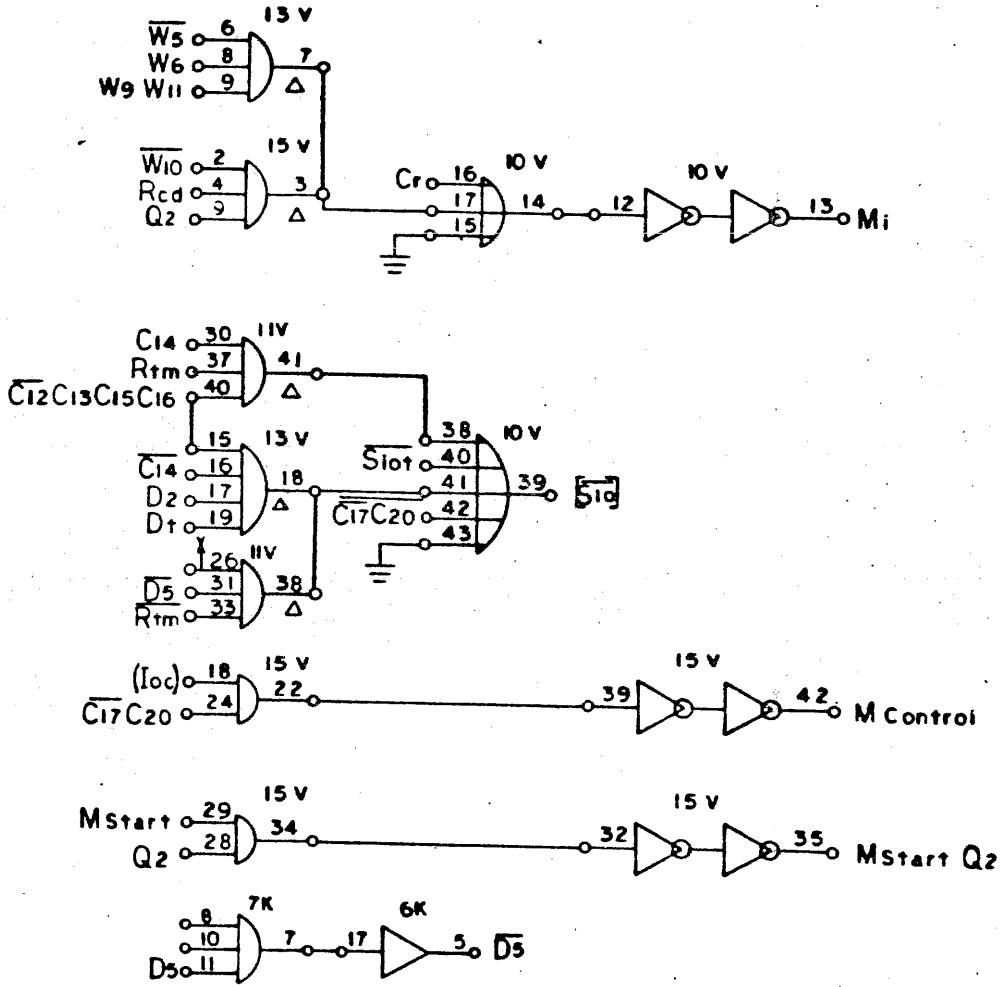
SIZE D | DWG NO. 103257 | E

NEXT ASSY.

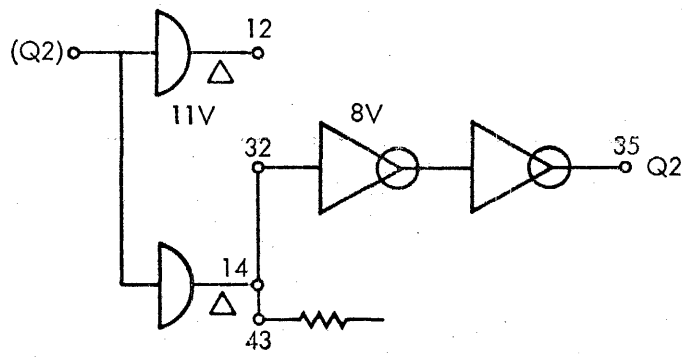
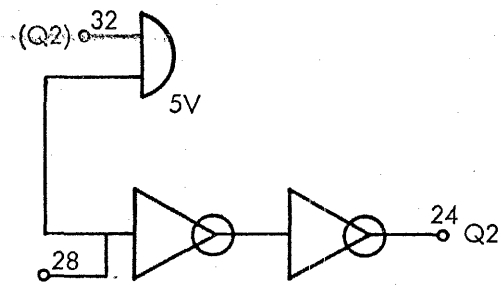
SCALE | DO NOT SCALE DRAWING | SHEET

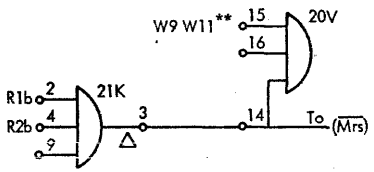
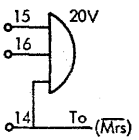
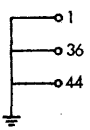
103257 E

Change	Reason
From A to C logic revision level major changes made to gating terms making up $[\overline{Sio}]$ Also $\overline{D5}$ signal eliminated and $\overline{D2} + \overline{Dt}$ added. Compare A and D logic revisions.	EO 103403D Forward search failures were noted when running 15KC system programs on 15KC/42.7KC tape systems. An EOM to convert a scan to a read could result in Rcd locking on due to the longitudinal check character. As a result, the I/O Buffer would receive an erroneous clock prior to the first data character of the ensuing block.

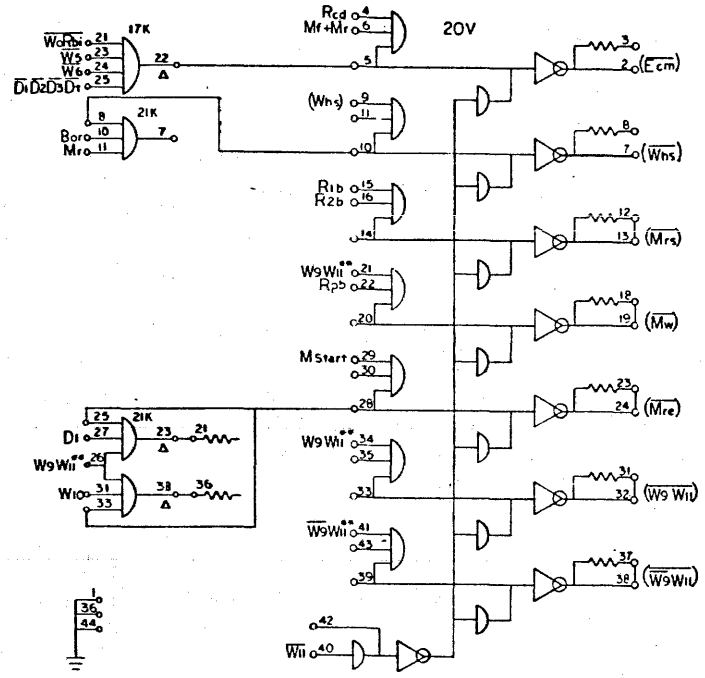


9248
TAPE CONTROL
PAGE 30
A

Change	Reason
From A to C logic revision level, Q2 buffer relocated 103257A  103257C & D  	EO 103403F Relocation of (Q2) to Q2 signal no logic change. Diode gates in 11V were required in revising gates to Cfba and Cgsa on C level logic change page 5.

Change	Reason
103257A  103257C & D  103257E  On Logic Pages 32 through 36	EO 103403F Eliminates W9 W11** term from gating to (Mrs) term. See Addendum Sheet page 5 Item 1 for reason. No logic change, only indicates that AX14 Module returns are tied to ground.

REVISIONS				103257
REV	DESCRIPTION		DATE	APPROVED
A	SEL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			
E	SEE REV EO			



9348,
92483 9248, 92481, 92482
TAPE CONTROL
PAGE 32
E

NO. REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN			SDS
CHECK			
APPR			

TITLE: DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

MODEL NO: 9248

NEXT ASSY

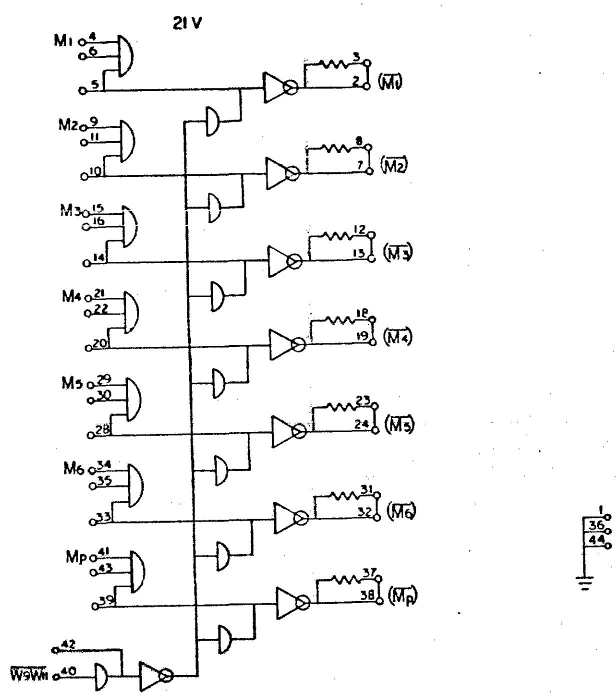
SIZE: D | DWG NO: 103257 | E

SCALE | DO NOT SCALE DRAWING | SHEET 32 OF 40

103257 E

REV	DESCRIPTION
A	REL TO MFG
D	SEE REV E.O.
E	SEE REV E.O.

103257 E



9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 33
E

SDS

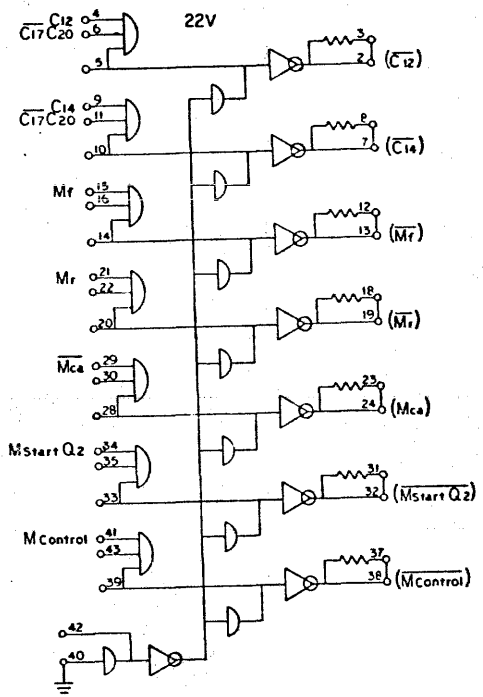
DIAGRAM LOGIC
MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D | DWG NO 103257 | E

Change	Reason
From A through D logic revision levels no changes were made.	
	EO 103403N EO 107514E (92483 only)
On E revision logic $\overline{C17}$ C20 was added to gate ($\overline{C12}$) and ($\overline{C14}$) signals.	To reduce noise between master control unit and slaves by keeping Cs quiet, except during Mag Tape EOM's and SKS's.

REV	DESCRIPTION	CHG	DATE	APPROVED
A	REL TO MFG			
D	SEE REV EO			
E	SEE REV EO			



9348
92483,9248,92481,92482
TAPE CONTROL
PAGE 34
E

REV	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION
		MATERIAL LIST	

NOTES UNLESS SPECIFIED

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248

NEXT ASSY

SIZE D | DWG NO 103257 | E

SCALE

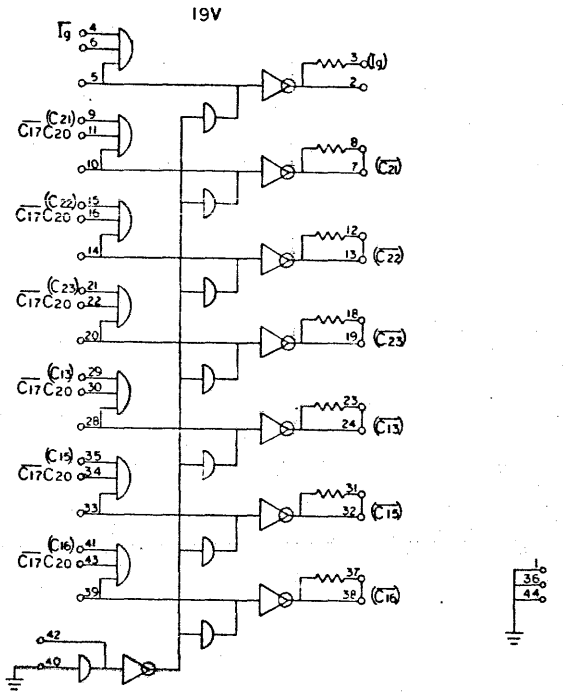
DO NOT SCALE DRAWING

SHEET 34 OF 44

103257 E

REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
D	SEE REV E.O.		
E	SEE REV EO		

103257 E



9348,
92483,9248,92481,92482
TAPE CONTROL
PAGE 35
E

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO

MATERIAL LIST

NOTES UNLESS SPECIFIED

DRAWN		7/11/63
CHECK		7/8/63
APPD		7/12/63

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

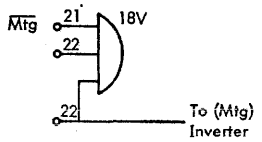
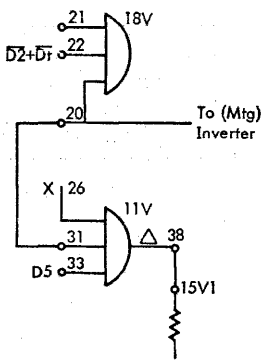
MODEL NO 9248

NEXT ASSY

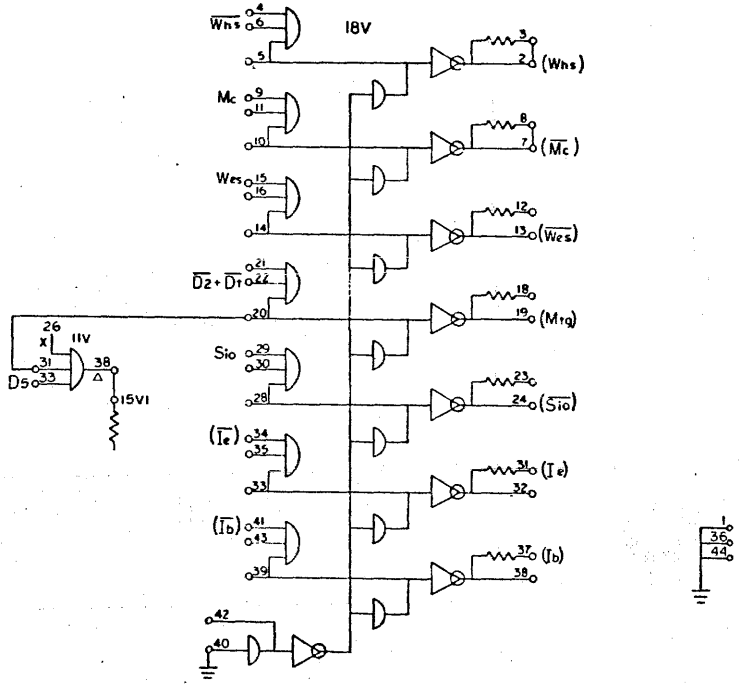
SIZE D | DWG NO 103257 | E

SCALE | DO NOT SCALE DRAWING | SHEET 35 OF 40

103257 E

Change	Reason
From A to C logic revision gating for (Mtg) signal changed. 103257A  103257C, D & E  	EO 103403D See page 30 Addendum Sheet for reason.

REVISIONS			103257	E
REV	DESCRIPTION	DATE	APPROVED	
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			
E	SEE REV EO			



9348,
92483.9248 92481, 92482
TAPE CONTROL
PAGE 36
E

NO. REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN		
CHECK		
APPD		

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

MODEL NO: 9248

NEXT ASSY

SIZE: D | DWG NO: 103257 | E

SCALE | DO NOT SCALE DRAWING | SHEET

103257 E

REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
D	SEE REV E.O.		
E	SEE REV EO		

103257 E

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
FH17	OX13	OX13	GC10	FH17	IC10	BH10	FH15	OX14	GH10	GH10	IC12	FH15	FH15	FH17	FC17	GH10	GH10	FH17	FH 7	IC10	GC10	GC10	GH11	IK52
CX13	OX14	CX13	OX13	CK52	DX13	SK59	PC10	IC12	EH11	EC10	IH12	GC10	IH12	BC10	IH12	IC12	AX14	AX14	AX14	AX14	AX14	AX14	P43	P41
[2][1]	[2][1]	[1]	[1]	[4]																				

K

V

K

V

9348, 92483, 92482, 92481, 9248

TAPE CONTROL PAGE 39 E

[1] NOT USED ON 92481 [2] NOT USED ON 9248.

[4] CK55 USED 9348 CK56 USED ON 92483.

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION

NOTES UNLESS SPECIFIED

MATERIAL LIST

DRAWN

CHECK

APPR

SDS

TITLE

DIAGRAM, LOGIC,
MAG TAPE CONTROL UNIT

MODEL NO 9248

NEXT ASSY

SIZE D

DWG NO 103257 E

SCALE

DO NOT SCALE DRAWING

SHEET 39

103257 E

			REVISIONS	103257	E
A	REL TO MFG				
D	SEE REV E.O.				
E	SEE REV E.O.				

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY 9248	92481	92482	92483	9348
1	CABLE DRIVER	AX14	6	6	6	6	6
2	AND/OR BUFFER AMP	BC10	3	3	3	3	3
3	AND/OR BUFFER AMP	BH10	1	1	1	1	1
4	OR GATE BUFFER AMP	BH11	1	1	1	1	1
5	CRYSTAL CLOCK GEN	CX13	1	–	2	2	2
6	COUNTER F.F.	FH15	3	3	3	3	3
7	UNIVERSAL F.F.	FH17	5	5	5	5	5
8	GATE EXPANDER	GH11	1	1	1	1	1
9	GATE EXPANDER	GC10	8	8	8	8	8
10	AND/OR INVERT.	IC10	2	2	2	2	2
11	AND INVERTER	IC12	4	4	4	4	4
12	AND INVERTER	IH12	2	2	2	2	2
13	ADDER MODULE	IK52	1	1	1	1	1
14	ONE SHOT MULT.	OX13	4	3	4	4	4
15	CLOCK & GAP DETECTER	SK59	1	1	1	1	1
16	UNIVERSAL F.F.	FC17	1	1	1	1	1
17	ONE SHOT MULT.	OX14	1	1	2	2	2
18	CLOCK GEN	CK52	1	1	1	–	–
19	CLOCK GEN	CK55	–	–	–	–	1
20	CLOCK GEN	CK56	–	–	–	1	–

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY	SUPPLIER CODE (SEE INDEX)
1	RESISTOR, 470 Ω ± 2%	(P40)R27 THRU R38	12	16, 17
2	INDUCTOR, MOLDED 220μH ±5%	(P40)L1 THRU L26 (P41)L1 THRU L14	40	42, 90, 91
3	DIODE, SILICON SWITCHING IN514A	(P40)CR1 THRU CR11	11	4, 12, 13, 14
4	CONNECTOR, SOLDERTAIL 47 CONTACT #7008-47	J(1K) THRU J(25K) J(1Y) THRU J(25Y)	50	82

ITEM	DESCRIPTION	CABLE LENGTH 11'	20'	30'	40'	DESIGNATION	QTY	SUPPLIER CODE (SEE INDEX)
5	RESISTOR	390Ω ± 2%	330Ω ± 2%	270Ω ± 2%	220Ω ± 2%	(P40)R1 THRU R26 (P41)R1 THRU R14	40	16, 17

9348,
92483, 9248, 92481, 92482
MAG TAPE CONTROL UNIT
PAGE 40
E

103257 E

DRAWN			SDS
CHECK			TITLE: DIAGRAM, LOGIC MAG TAPE CONTROL UNIT
APPD			
MODEL NO. 9248		SIZE D	DWG NO. 103257 E

REV	DESCRIPTION
A	REL TO MFG
B	SEE REV E.O.
C	SEE REV E.O.
D	SEE SEE E.O.

PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG
1	C								
2	C								
3	C								
4	C								
5	C								
6	C								
7	C								
8	C								
9	C								
10	C								
11	C								
12	C								
13	C								
14	C								
15	C								
16	C								
17	C								
18	C								
19	C								
20	C								
21	C								
22	C								
23	C								
24	C								
25	C								
26	C								
27	C								
28	C								
29	C								
30	C								
31	C								
32	C								
33	C								
34	C								
35	C								
36	C								
37	D								
38	C								
39	D								

NOTES:

1. REV LETTERS LISTED INDICATE STATUS OF EACH SHEET OF THIS MULTIPLE SHEET DRAWING.
2. CHECK INDIVIDUAL SHEETS FOR REVISION LETTER AGAINST THIS SHEET BEFORE USING THIS DRAWING.

REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 16B)

NOTE:

THIS DWG APPLIES TO BOTH THE AMPEX (A) & POTTER (P) MAG TAPE UNITS. FOR SIMPLICITY ONLY 9246A AND/OR 9246P DESIGNATIONS ARE SHOWN ON INDIVIDUAL PAGES. 9246A IMPLIES 9246A, 92461A, 92462A, & 9346A. 9246P IMPLIES 9246P, 92461P, 92462P & 92463P. THE FOLLOWING CHART INDICATES THE EFFECTIVITY OF INDIVIDUAL PAGES.

PAGE NO.	AMPEX ONLY	POTTER ONLY	BOTH	92463P VARIATIONS
1			X	
2	X			
3			X	
4			X	
5			X	
6			X	
7			X	
8			X	
9			X	
10			X	
1			X	
12			X	
13			X	X
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	
26			X	X
27	X			
28	X			
29	X			
30	X			
31			X	
32			X	
33			X	
34	X			
35	X			
36		X		X
37		X		
38		X		
39		X		

9246A, 9246P

MAG TAPE UNIT

PAGE 1

D

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC MAG TAPE UNIT

MODEL NO. 9246

SIZE D DWG NO. 103258 D

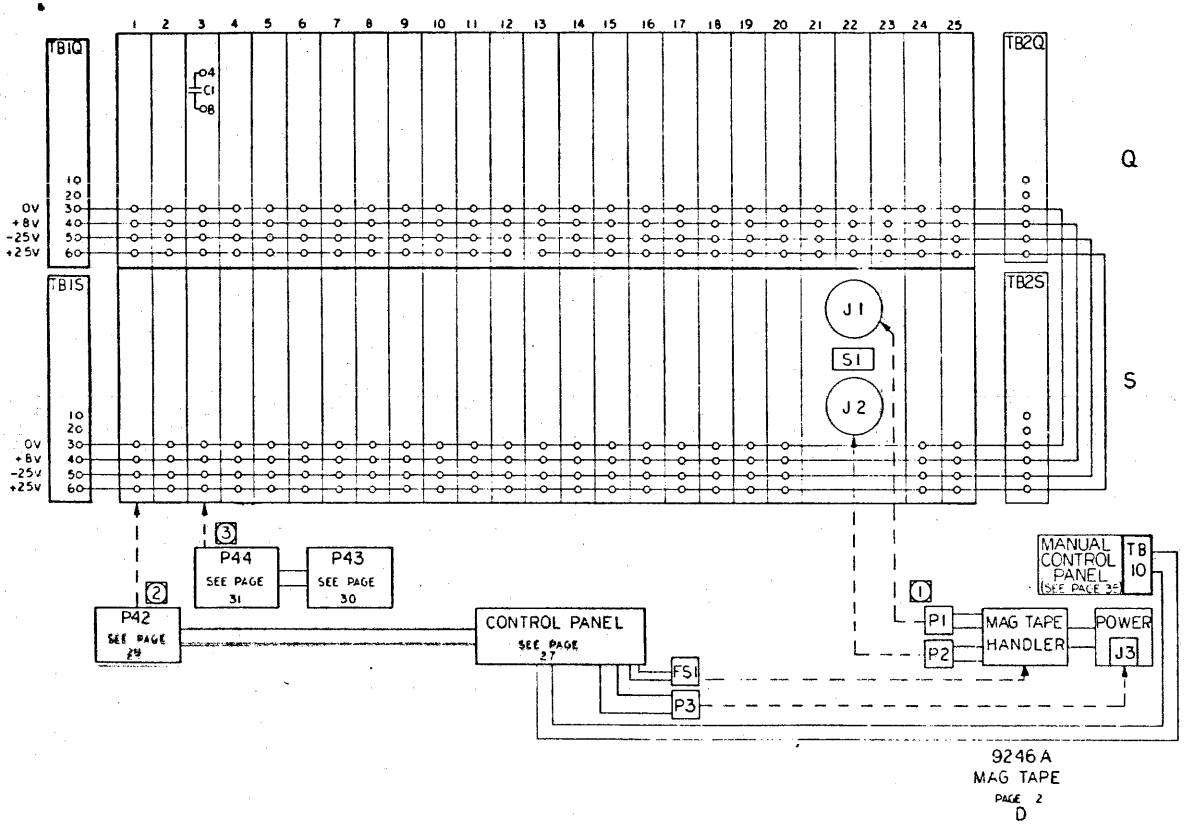
NOTES: UNLESS OTHERWISE SPECIFIED

[3] RECEPTACLE J(3S) IS PROVIDED FOR THE P44 TO P43 CABLE. P43 CONNECTS TO RECEPTACLE J(24V) OF THE MODEL 9248 CONTROL UNIT OR TO J(2S) OF A SECOND MODEL 9246.

[1] RECEPTACLES J1 & J2 ARE PROVIDED FOR CONNECTION TO THE READ & WRITE HEADS OF THE MAG TAPE UNIT.

[2] RECEPTACLE J(1S) IS PROVIDED FOR P42 FROM CONTROL PANEL.

REVISIONS				103258
REV	DESCRIPTION	CHG	DATE	APPROVED
A	REL TO MFG			
-	SEE REV E.O.			
D	SEE REV E.O.			



9246 A
MAG TAPE
PAGE 2
D

NO. REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN Jack 7/13/67
CHECK 7/21/67
APPR 7/14/67

SDS SCIENTIFIC DATA SYSTEMS

TITLE
DIAGRAM, LOGIC
MAG TAPE

MODEL NO 9246
NEXT ASSY

SIZE D DWG NO 103258 D
SCALE DO NOT SCALE DRAWING SHEET

103258 D1

REV	DESCRIPTION	DATE	APPROVED
A	REL. TO MFG.		
C	SEE REV. E.O.		
D	SEE REV E.O.		

103258 D

9246 DIRECTORY

Ao	18
($\overline{\text{Ao}}$)	24
Aoo	6
$\overline{\text{Aoo}}$	26
Aux. Contr. Panel	27
(Bor)	28
Bor	6
$\overline{\text{Bor}}$	22
Bot	4
Bot Indicate	8
Ch1 Read	26
Ch2 Read	26
Ch3 Read	26
Ch4 Read	26
Ch5 Read	26
Ch6 Read	26
Ch7 Read	26
Ch1 Write	13
Ch2 Write	13
Ch3 Write	13
Ch4 Write	13
Ch5 Write	13
Ch6 Write	13
Ch7 Write	13
C12	20
C13	20
C14	20
$\overline{\text{C14}}$	20
C15	20
$\overline{\text{C15}}$	20
C16	20
$\overline{\text{C16}}$	20
C21	22
$\overline{\text{C21}}$	22
C22	22
$\overline{\text{C22}}$	22
C23	22
$\overline{\text{C23}}$	22
($\overline{\text{Da}}$)	24
($\overline{\text{Db}}$)	24
($\overline{\text{Dc}}$)	24
Debt	6
Dr	5
$\overline{\text{Dr}}$	6

(Eor)	28
Eor	22
$\overline{\text{Eor}}$	22
Eor + Bor	22
$\overline{\text{Eor}}$ $\overline{\text{Bor}}$	19
Eot	4
Eot Indicate	6
File Protect Indicate	8
Forward Activate	13
($\overline{\text{Ib}}$)	23
($\overline{\text{Ie}}$)	23
K1 Set	8
K2 Set	6
Ma	4
Mad	22
$\overline{\text{Mad}}$	22
($\overline{\text{Mad}}$)	24
Ma Mf	19
Ma Mr	19
Ma Mr + Mb	19
Ma Test	19
Ma Test	19
Ma $\overline{\text{Test}}$	19
Mb	4
Mc	6
$\overline{\text{Mca}}$	21
M Control	20
Mf	21
Mp	21
Mpe	5
Mpt	11
Mpx	13
Mr	21
$\overline{\text{Mre}}$	11
Mre	6
M Start Of	20
Mu	6
M1	21
M2	21
M3	21
M4	21
M5	21
M6	21

M1e	9
M2e	9
M3e	9
M4e	10
M5e	10
M6e	10
M1t	11
M2t	11
M3t	12
M4t	12
M5t	12
M6t	12
M1a	13
M2a	13
M3a	13
M4a	13
M5a	13
M6a	13
Read;	6
(Read;)	6
Read; Indicate	8
Reverse Activate	13
R_pa	18, 19
($\overline{\text{Rpa}}$)	25
(Rpa)	26
Rpaf	18
Rpar	18
Rpy	26
Rpz	26
R1a	16, 17, 19
R2a	16, 17, 19
R3a	16, 17, 19
R4a	14, 15, 19
R5a	14, 15, 19
R6a	14, 15, 19
($\overline{\text{R1a}}$)	25
($\overline{\text{R2a}}$)	25
($\overline{\text{R3a}}$)	25
($\overline{\text{R4a}}$)	25
($\overline{\text{R5a}}$)	25
($\overline{\text{R6a}}$)	25
(R1a)	21
(R2a)	21
(R3a)	21
(R4a)	21

(R5a)	26
(R6a)	26
R1af	16
R2af	16
R3af	16
R4af	14
R5af	14
R6af	14
R1ar	17
R2ar	17
R3ar	17
R4ar	17
R5ar	17
R6ar	17
R1y	26
R2y	26
R3y	26
R4y	26
R5y	26
R6y	26
R1z	26
R2z	26
R3z	26
R4z	26
R5z	26
R6z	26
(Slot)	23
[$\overline{\text{Slot}}$]	7
Test	13
$\overline{\text{Test}}$	13
Tha	26
Thd	26
Unit Select	6
Write Activate	13
W1 W11	21
$\overline{\text{W1}}$ W11	21

9246A
9246P
MAG TAPE UNIT
PAGE 3
D

SDS SCIENTIFIC DATA SYSTEMS

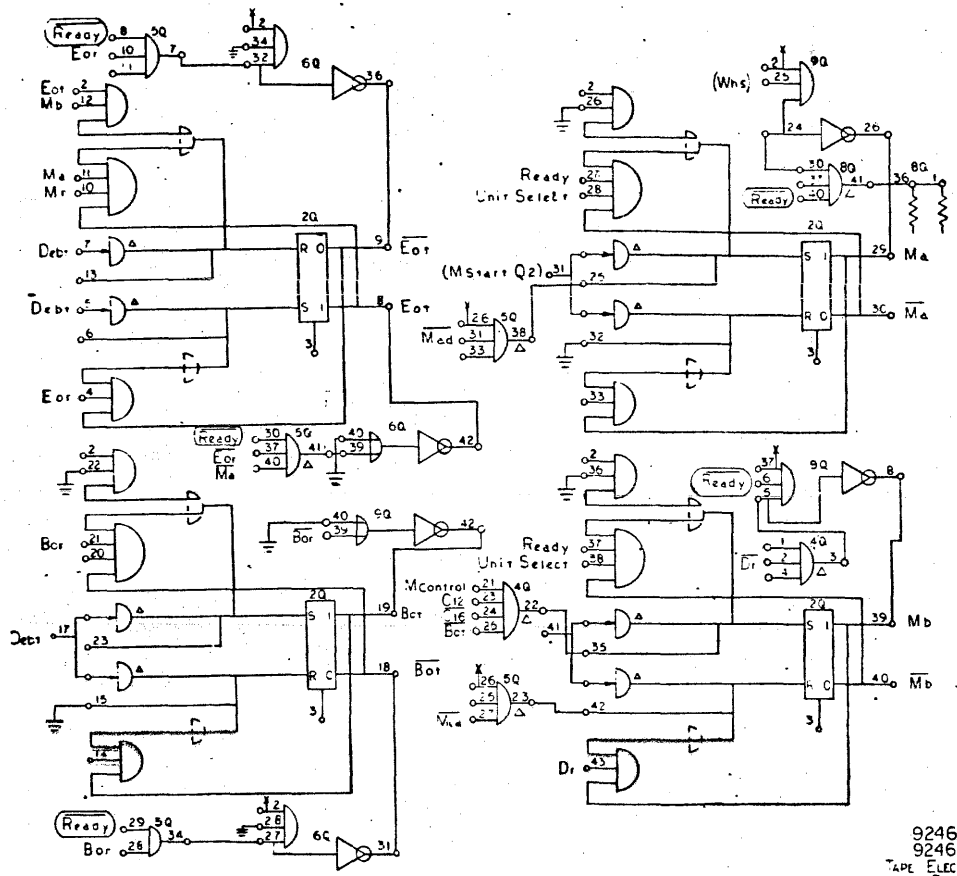
DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

SIZE D DWG NO 103258 D

SHEET 3

103258 D



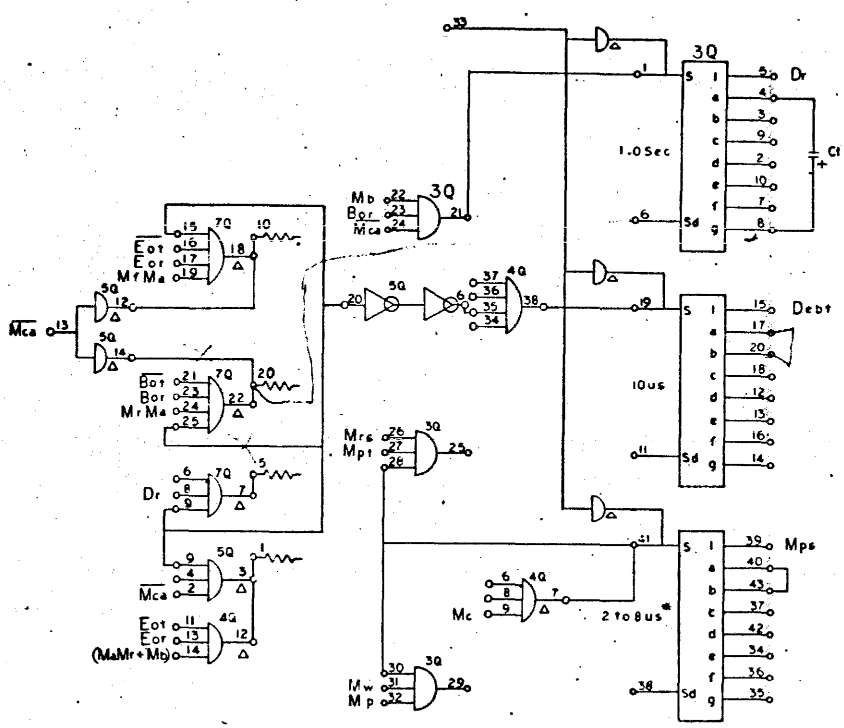
REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
B	SEE REV E.O.			
C	SEE REV. E.O.			
D	SEE REV E.O.			

103256 D

DRAWING NO	DESCRIPTION
9246	DIAGRAM, LOGIC, MAG TAPE UNIT
	D 103258 D

REV	DESCRIPTION
A	REL. TO MFG.
C	SEE REV. E.O.
D	SEE REV E.O.

103258 D



* SEE CALIBRATION PROCEDURE

9246A
9246P
TAPE ELECTRONICS
PAGE 5
D

SDS

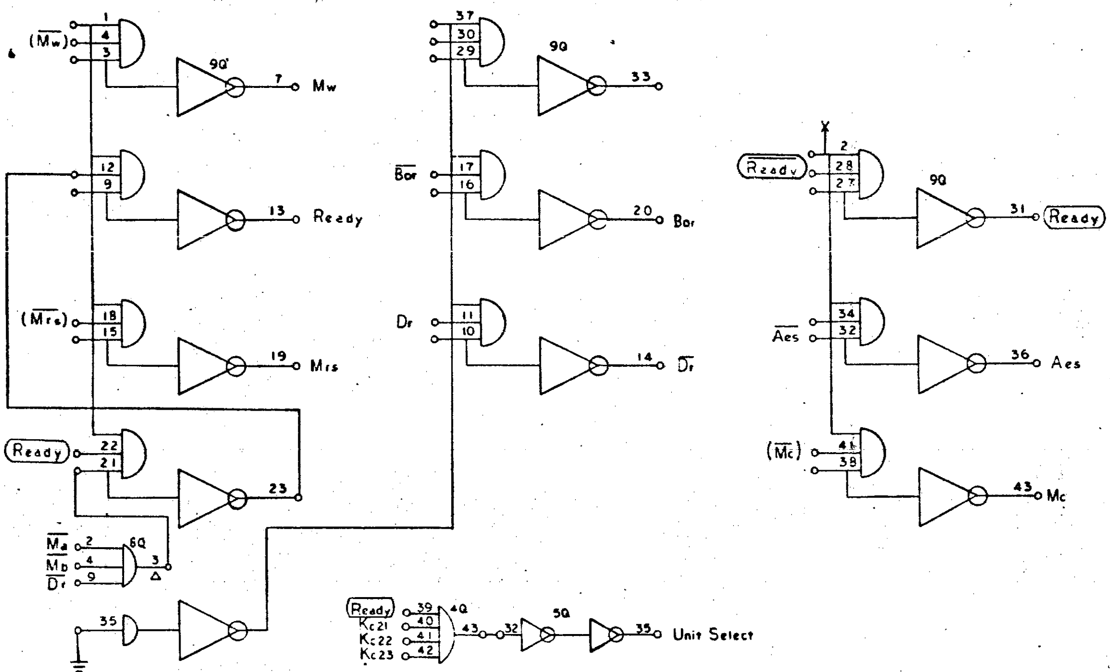
DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO. 9246

D 103258 D

REV.	DESCRIPTION		
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		

103258 D



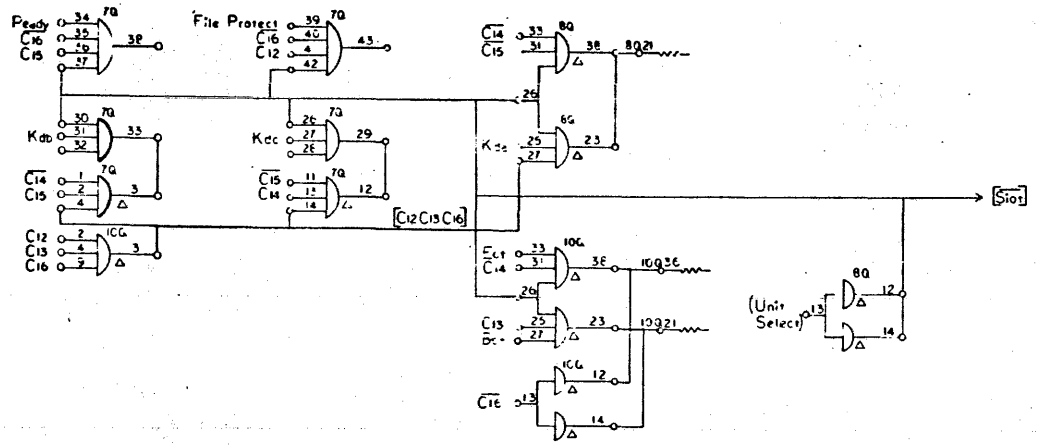
9246A
9246P
TAPE ELECTRONICS
PAGE 6
D

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO	SIZE	DWG NO	REV
9246	D	103258	D

REVISIONS				103258 D
REV	DESCRIPTION		DATE	APPROVED
A	REL TO MFG.			
B	SEE 2EV. E.O.			
C	SEE 3EV E.O.			



9.16A
9246P
TAPE ELECTRONICS
PAGE 7
D

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

SDS SCIENTIFIC DATA SYSTEMS

DRAWN
CHECK
APPR

TITLE: DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

NEXT ASSY

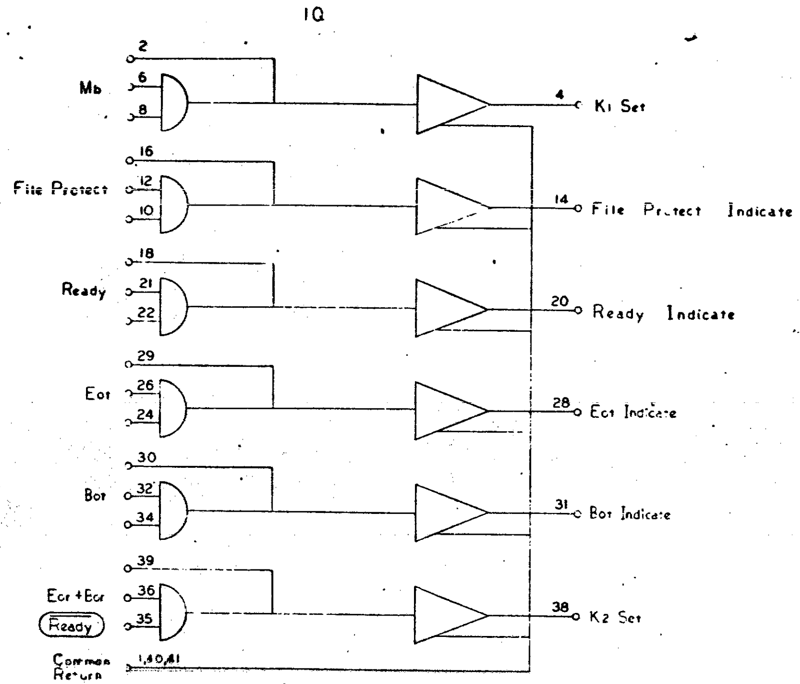
SIZE D | DRAWING NO 103258 | D

SCALE | DO NOT SCALE DRAWING | SHEET

103258 D1

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV E.O.
D	SEE REV E.O.

C3258 D



9246A
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TAPE ELECTRONICS
PAGE 8
D

SDS

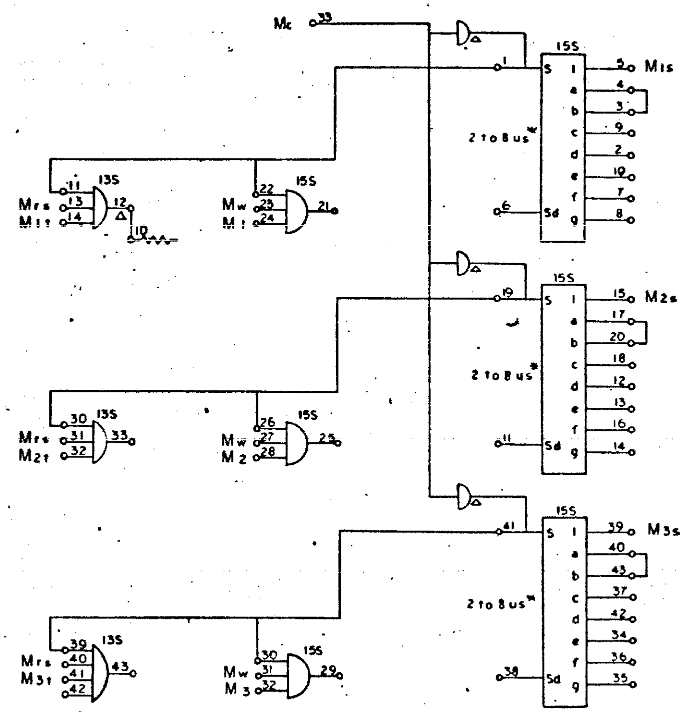
DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

D 103258 D

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV. E.O.
D	SEE REV E.O.

103258 D



* SEE CALIBRATION PROCEDURE

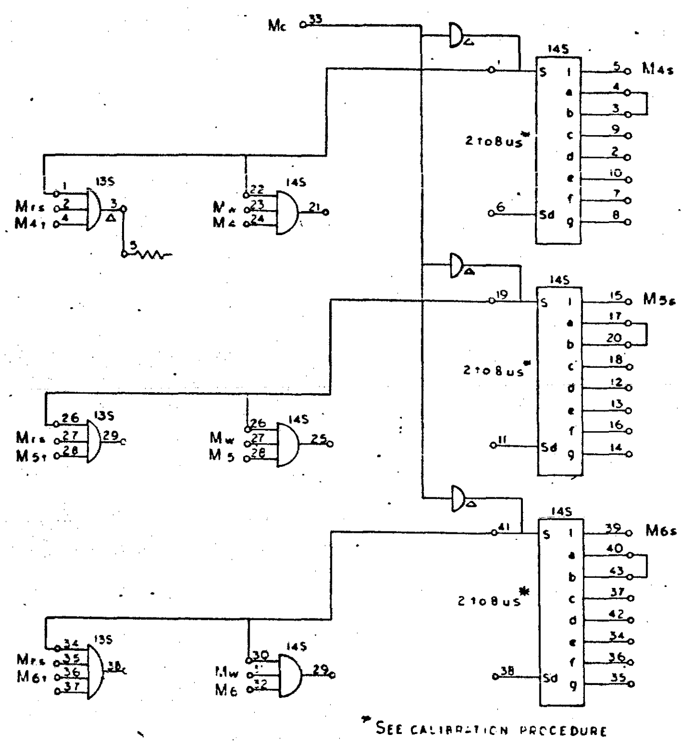
9246A
9246P
TAPE ELECTRONICS
PAGE 9
D

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

DWG NO D 103258 C



REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			

9246A
9246P
Tape Electronics
Page 10
D

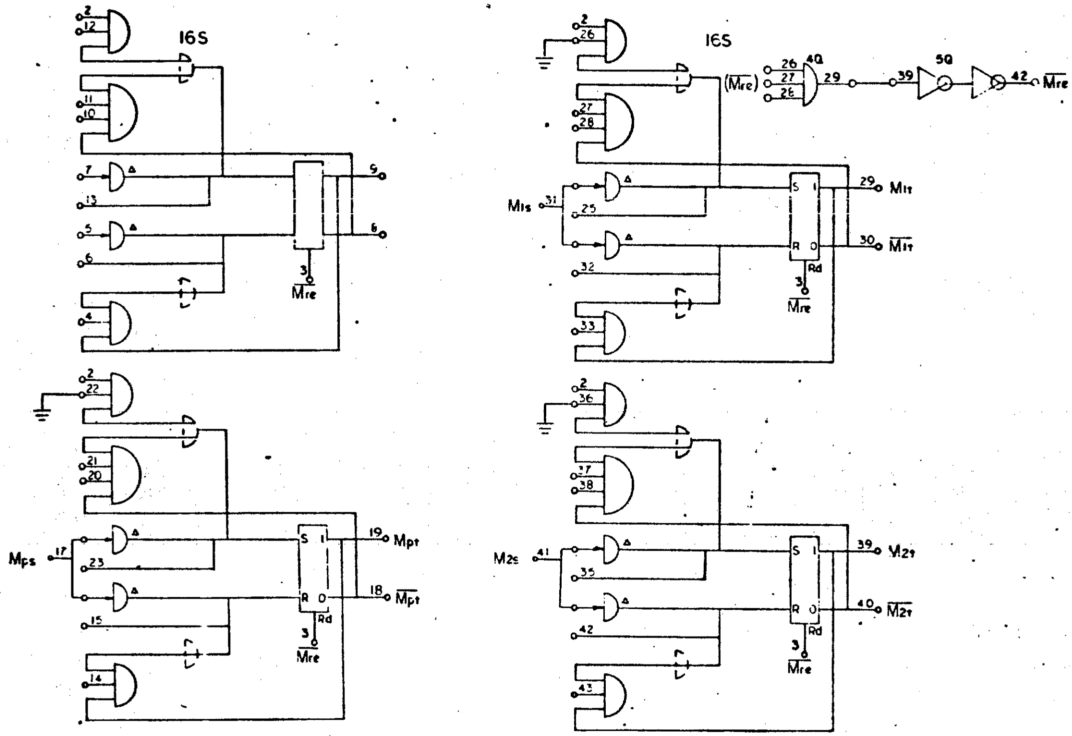
SDS

DIAGRAM, LOGIC, MAG TAPE UNIT

Model No. 9246

Size D — Dwg No. 103258 — D

REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			



9246A
9246P
TAPE ELECTRONICS
PAGE 11
D

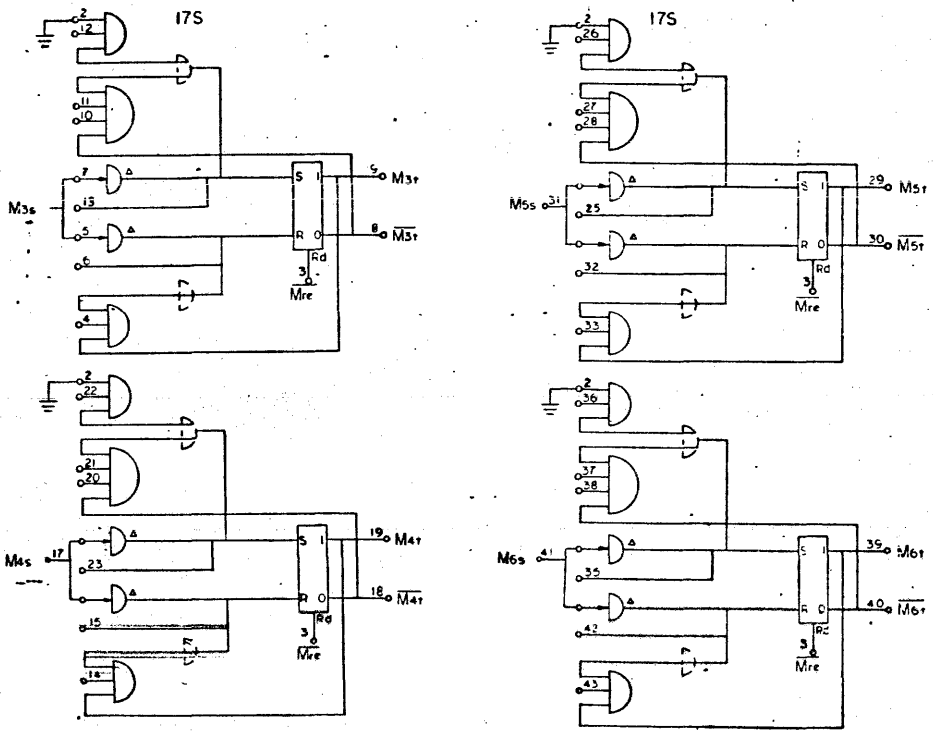
SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO. 9246

SIZE D DWG NO. 103258 D

REVISIONS			103258
REV.	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		



9246A
9246P
TAPE ELECTRONICS
PAGE 12
D

NEXT ASSY	USED ON	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
		MATERIAL LIST			

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPR

SDS
SCIENTIFIC DATA SYSTEMS

TITLE
DIAGRAM, LOGIC,
MAG TAPE UNIT

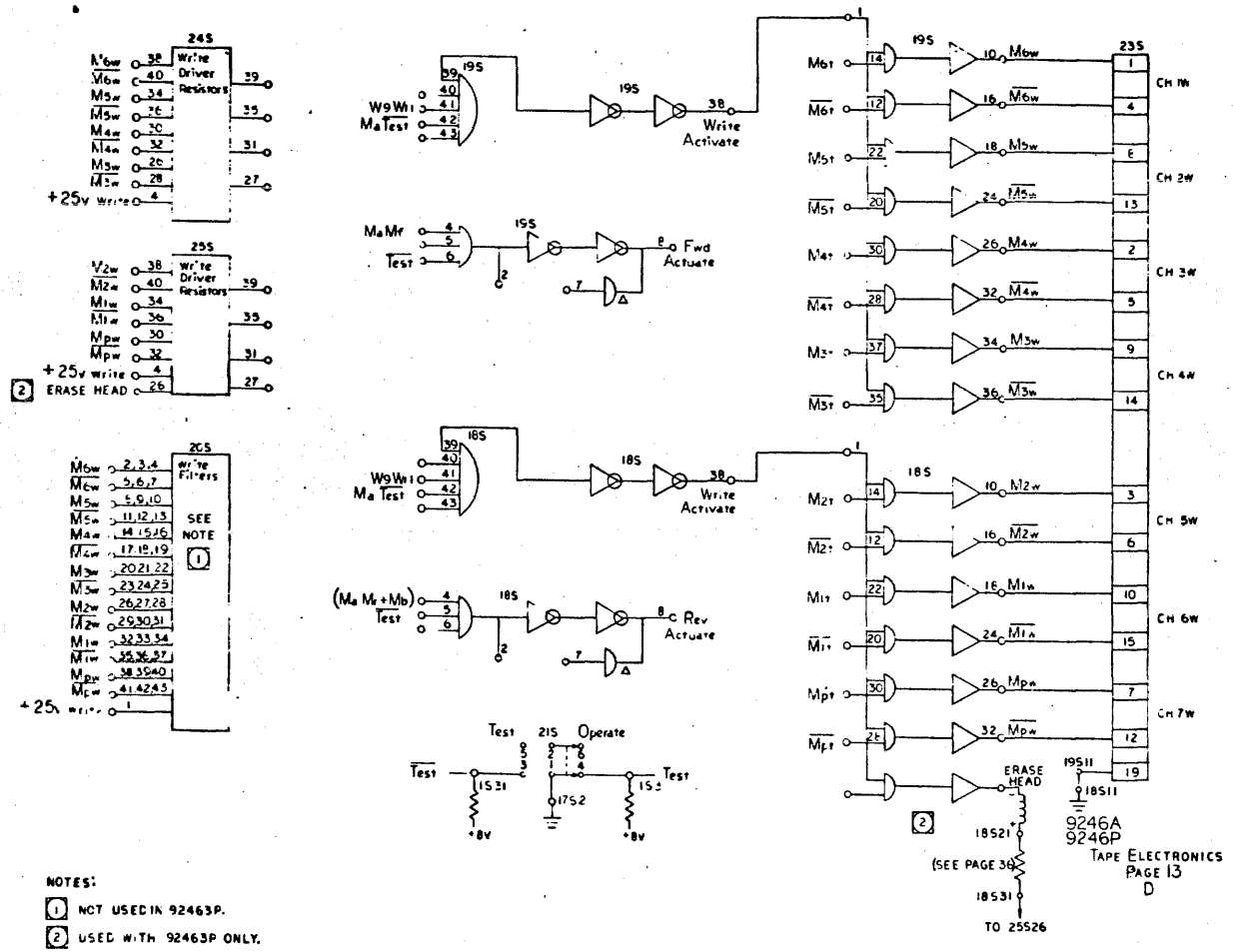
MODEL NO 9246

SIZE D | DWG NO 103258 | D

SCALE | DO NOT SCALE DRAWING | SHEET 12

103258 D

REVISIONS			103258 D
REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
C	SEE REV E.O.		
D	SEE REV E.O.		



NOTES:

1. NOT USED IN 92463P.
2. USED WITH 92463P ONLY.

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPR.

SDS

TITLE: DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO: 9246

NEXT ASSY

SIZE: D

DWG NO: 103258

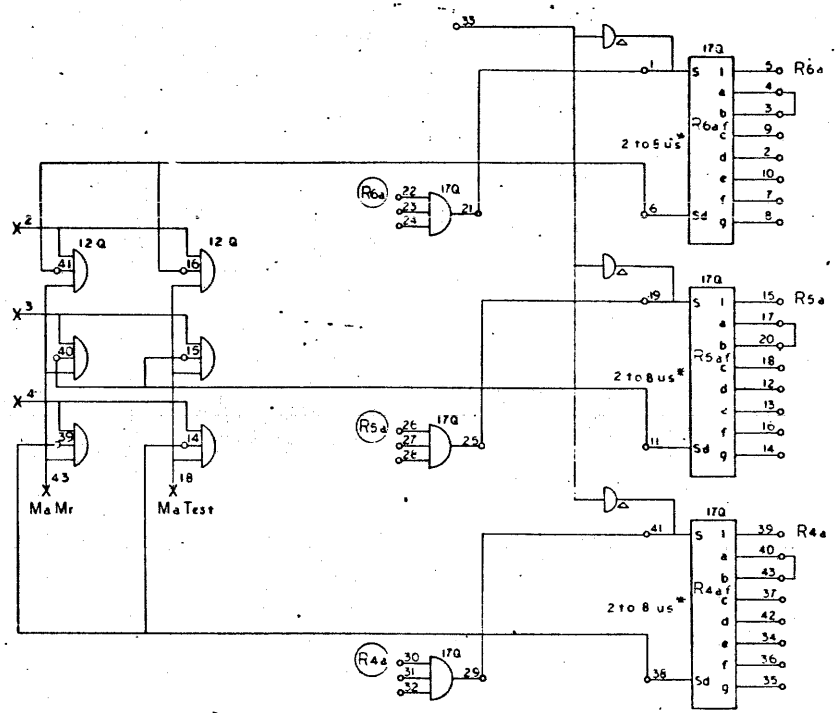
REV: D

SCALE: DO NOT SCALE DRAWING

SHEET 13

103258 D

REVISIONS		C3258
REV	DESCRIPTION	
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	



*SEE CALIBRATION PROCEDURE

9246A
9246P
TAPE ELECTRONICS
PAGE 14
D

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO

MATERIAL LIST

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPD

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC, MAG TAPE UNIT

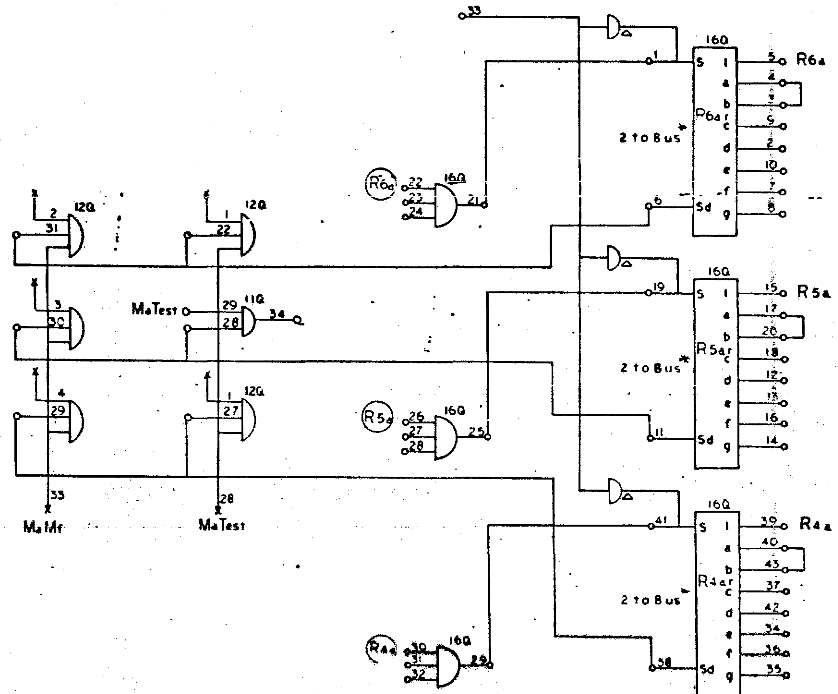
MODEL NO: 9246
NEXT ASSY

SIZE: D
DWG NO: 103258
REV: D

SCALE
DO NOT SCALE DRAWING
SHEET 4

103258 D

REV	DESCRIPTION	103258 D
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	



* SEE CALIBRATION PROCEDURE

9246A
9246P
TAPE ELECTRONICS
PAGE 15
D

SDS

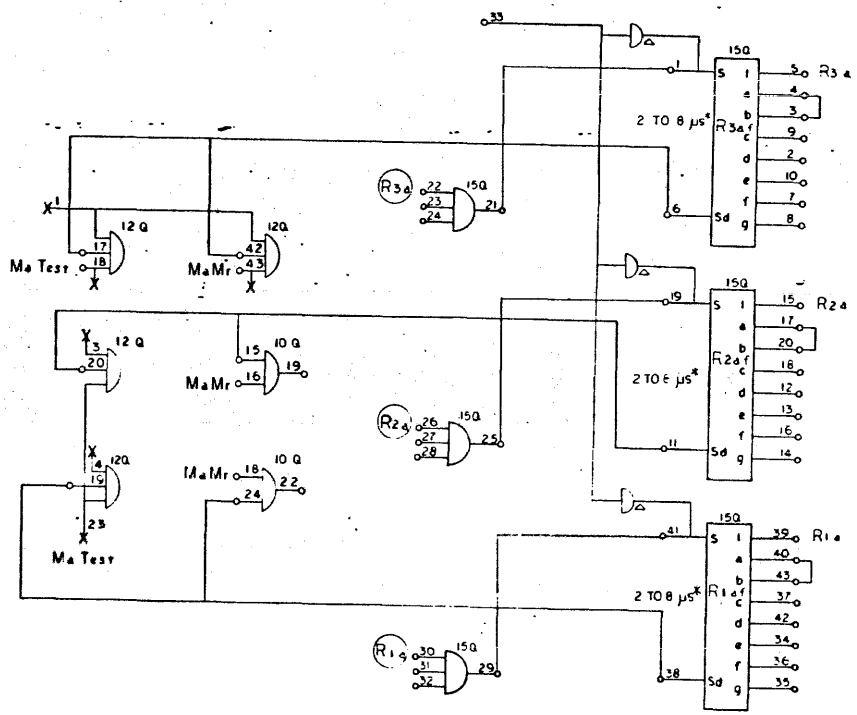
DIAGRAM, LOGIC,
MAG TAPE UNIT

9246

D 103258 D

103258 D

REVISIONS			C3258 D
REV	DESCRIPTION	CHK	DATE APPROVED
A	REL TO MFG.		
C	SEE REV. E.O.		
D	SEE REV E.O.		



*SEE CALIBRATION PROCEDURE

9246A
9246P
TAPE ELECTRONICS
PAGE 16
D

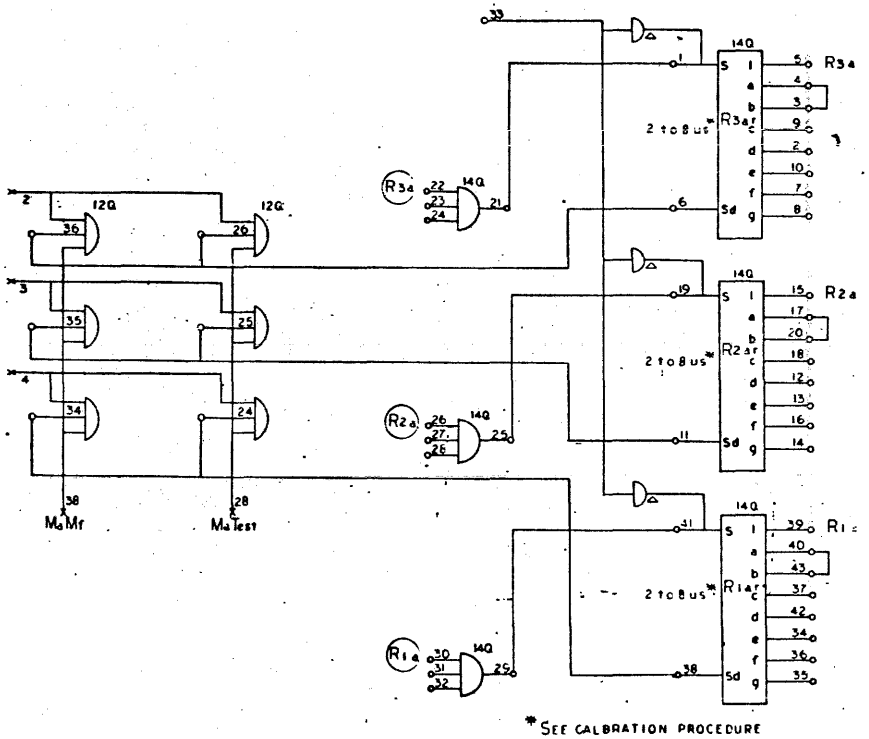
SDS

DIAGRAM, LOGIC,
MAG. TAPE UNIT

9246

D 103258 D

REVISIONS			103258
REV	DESCRIPTION	DATE	APPROVED
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		



*SEE CALBRATION PROCEDURE

9246A
9246P
TAPE ELECTRONICS
PAGE 17
D

DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION

MATERIAL LIST

NOTES UNLESS SPECIFIED

SDS

DRAWN

CHECK

APPR

TITLE

DIAGRAM, LOGIC,
MAG TAPE UNIT

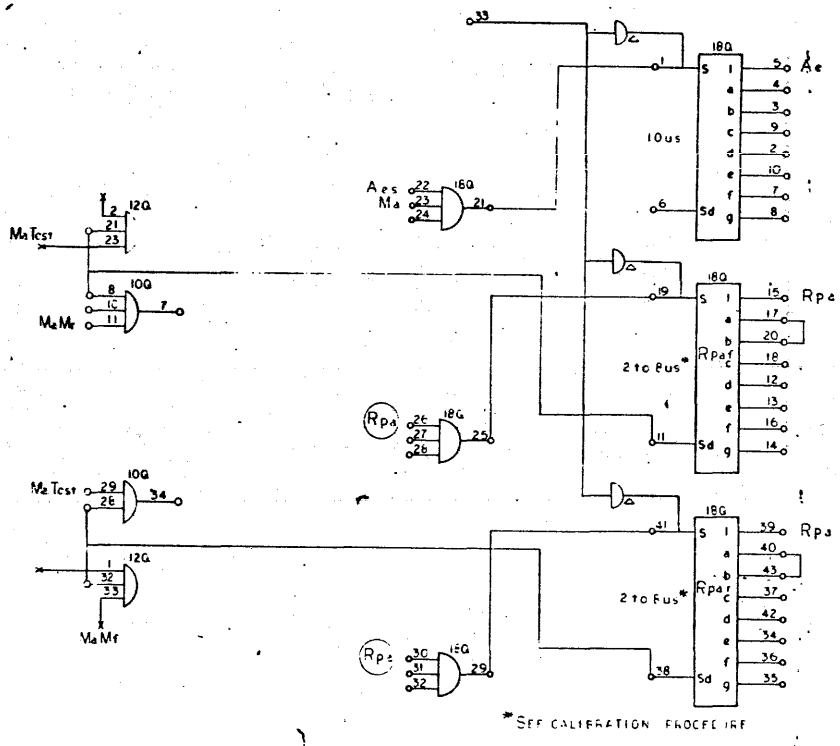
9246

D 103258 D

SCALE — DO NOT SCALE DRAWING — SHEET 17

103258 01

REV	DESCRIPTION	C3258 D
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	

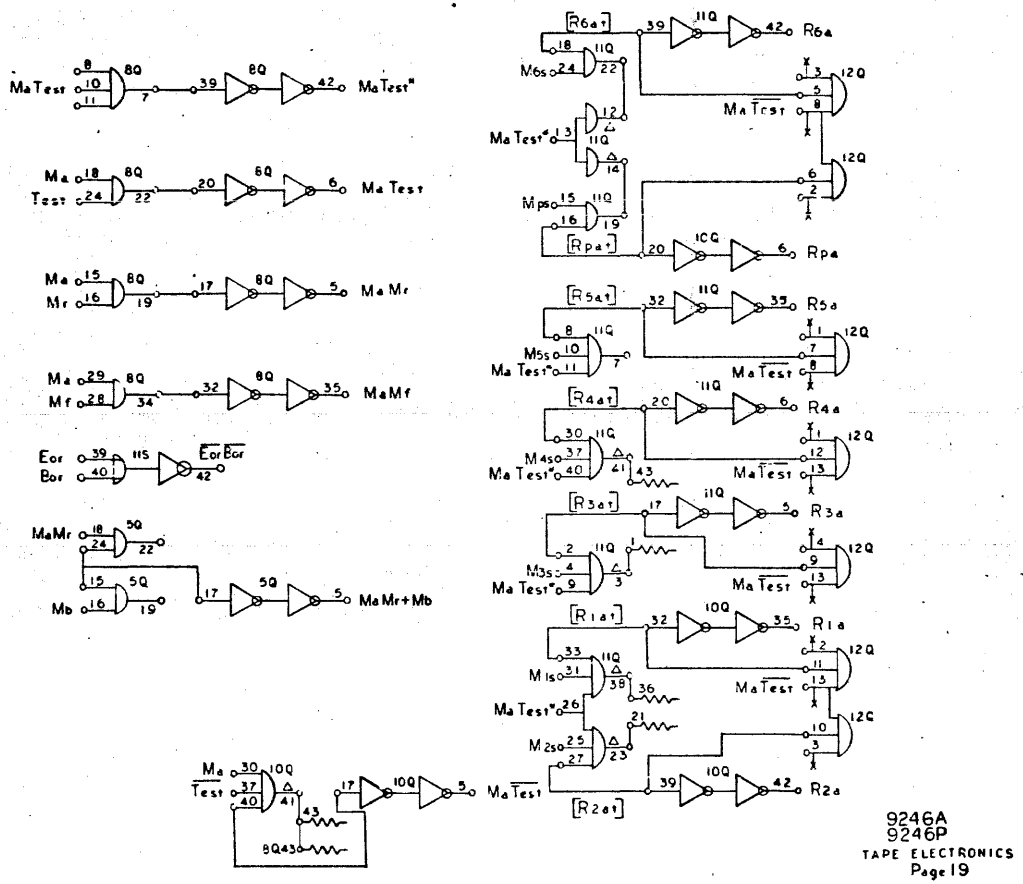


9246A
9246P
TAPE ELECTRONICS
PAGE 18
D

DRAWING NO	DESCRIPTION	
MODEL NO 9246		SDS DIAGRAM, LOGIC, MAG. TAPE UNIT
NEXT ASSY		D 103258 D

C3258 D

REVISIONS			103258	D
REV	DESCRIPTION	CHG	DATE	APPROVED
A	REL. TO MFG.			
C	SEE REV. E.O.			
D	SEE REV E.O.			



9246A
9246P
TAPE ELECTRONICS
Page 19
D

DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN	[illegible]	7/9/63
CHECK	CAB	7/17/63
APPD	[illegible]	7/19/63

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

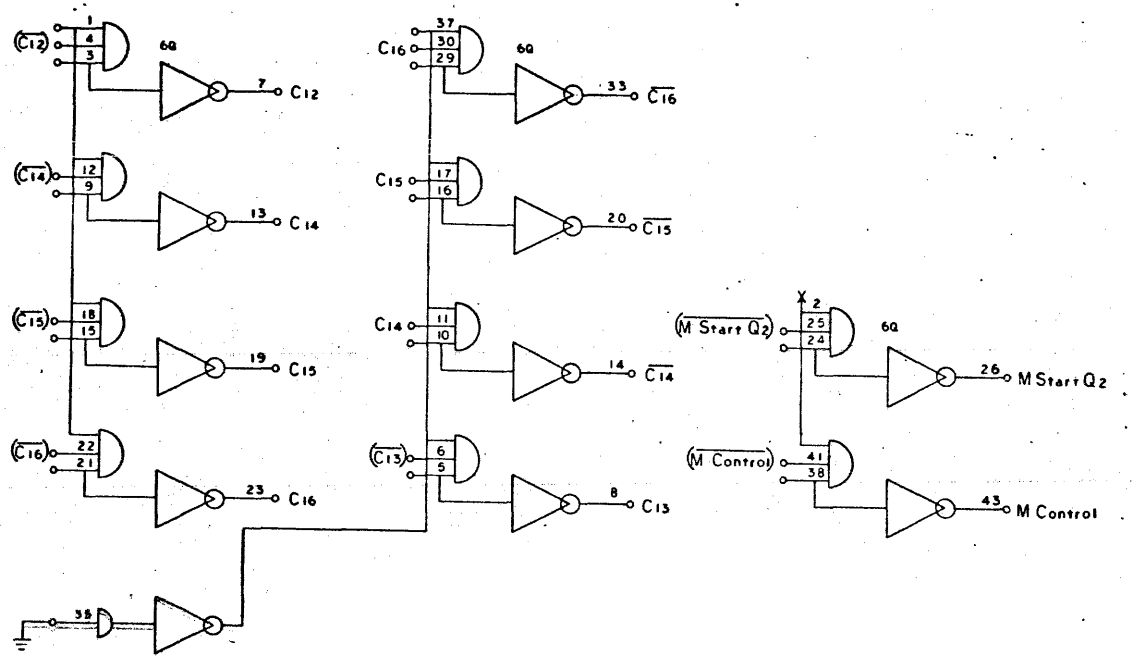
9246

D 103258 D

SCALE — DO NOT SCALE DRAWING — SHEET 19

103258 01

REVISIONS			IC3258	D
REV	DESCRIPTION		DATE	APPROVED
A	REL. TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			



9246A
9246P

TAPE ELECTRONICS

PAGE 20
D

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	STOCK NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN		
CHECK	[illegible]	7/17/63
APPR	[illegible]	7/17/63

SDS SCIENTIFIC DATA SYSTEMS

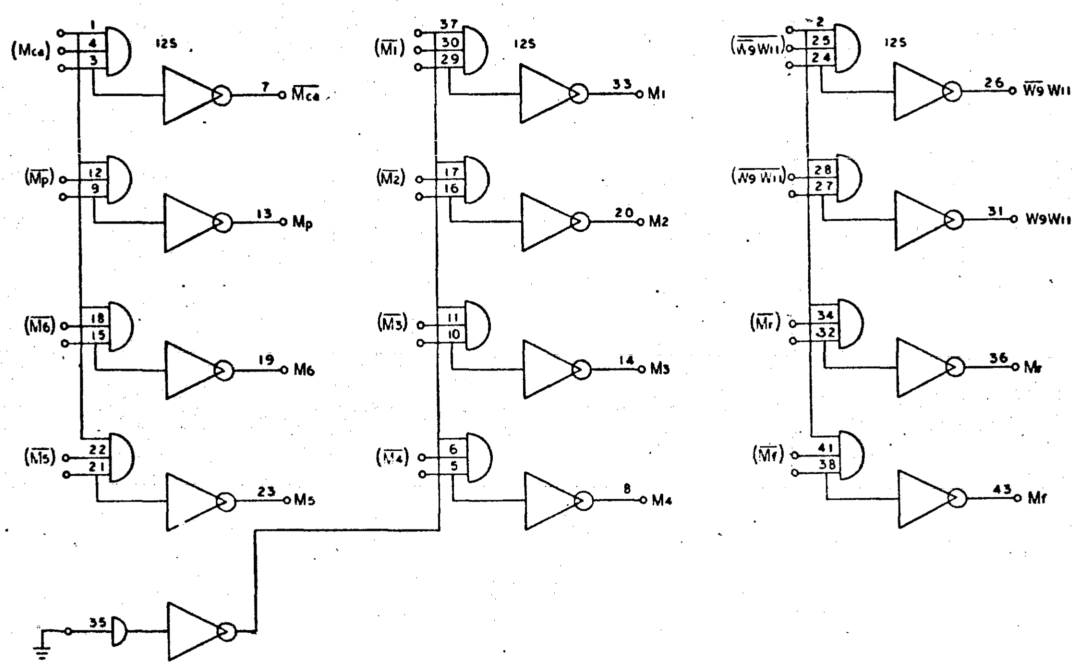
TITLE: DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

SIZE D | DWG NO 103258 | D

SCALE | DO NOT SCALE DRAWING | SHEET 20

103258 D

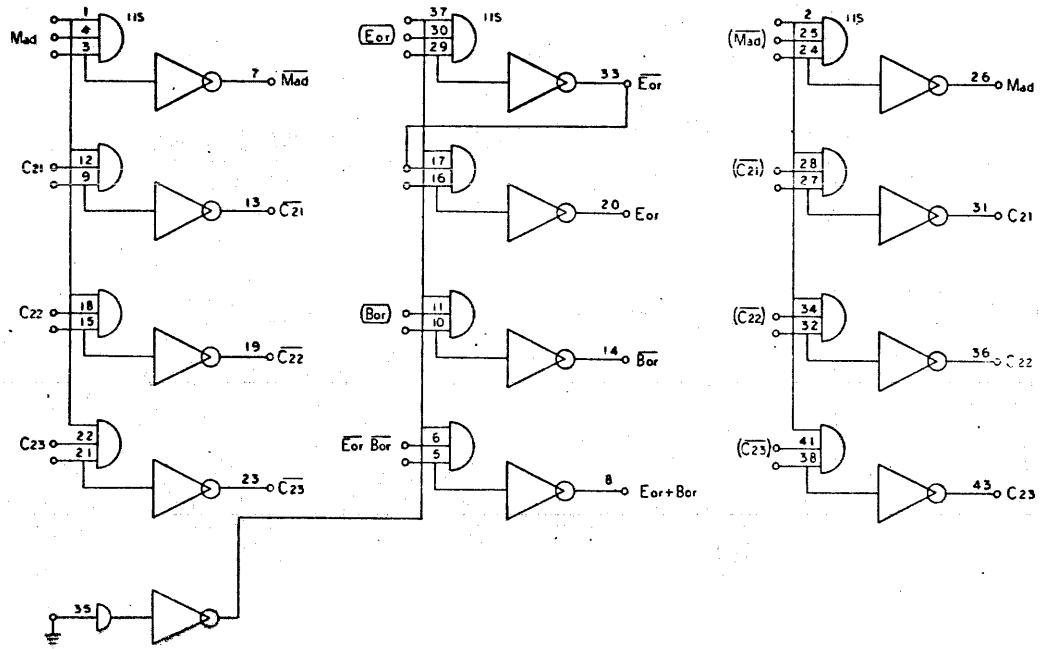


REV	DESCRIPTION
A	REL TO MFG
C	SEE REV. E.O.
D	SEE REV E.O.

9246A
9246P
TAPE ELECTRONICS
PAGE 21
D

SDS
DIAGRAM, LOGIC, MAG TAPE UNIT
Model No. 9246
Size D Dwg No. 103258 D

REVISIONS				C3258 D
REV	DESCRIPTION	LTR	DATE	APPROVED
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			



9246A
9246P
TAPE ELECTRONICS
PAGE 22
D

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM REV
NOTES UNLESS SPECIFIED	MATERIAL	DRAWN		
		CHECK		
		APPR		
MODEL NO 9246	NEXT ASSY			

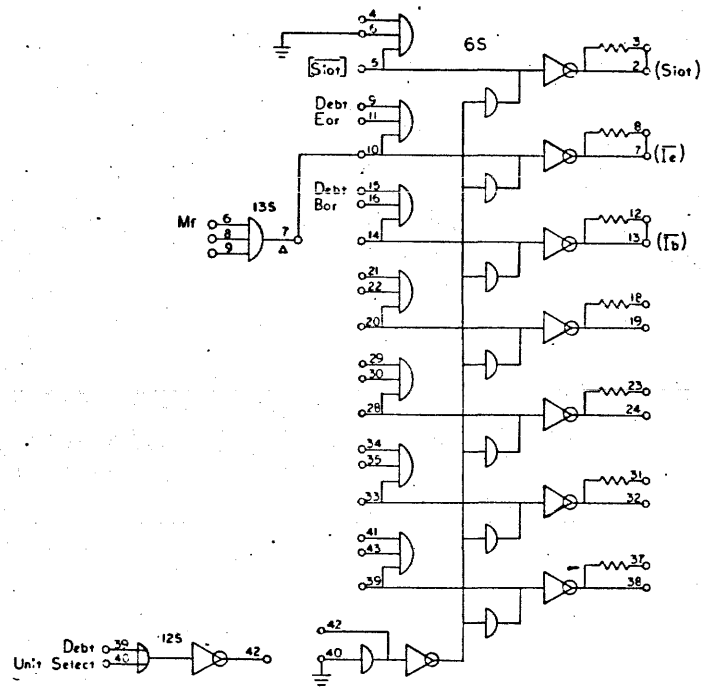
SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

SIZE D | 103258 | D

C3258 D

REVISIONS			103258 D
REV	DESCRIPTION	CHG	DATE APPROVED
A	REL. TO MFG.		
B	SEE REV E.O.		
C	SEE REV. E.O.		
D	SEE REV E.O.		



9246A
9246P
TAPE ELECTRONICS
PAGE 23
D

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION
MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN [illegible] 7/7/63
CHECK [illegible] 7/7/63
APPD [illegible] 7/8/63

SDS

TITLE
DIAGRAM, LOGIC,
MAG TAPE UNIT

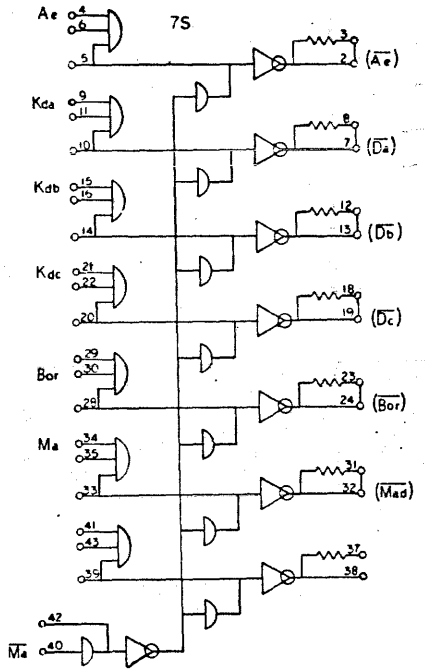
MODEL NO 9246
NEXT ASSY

SIZE D | DWG NO 103258 | D

SCALE | DO NOT SCALE DRAWING | SHEET 23

103256 D

REVISIONS			103258	
REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			



9246A
9246P
TAPE ELECTRONICS
PAGE 24
D

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPR

SDS SCIENTIFIC DATA SYSTEMS

TITLE
DIAGRAM, LOGIC,
MAG TAPE UNIT

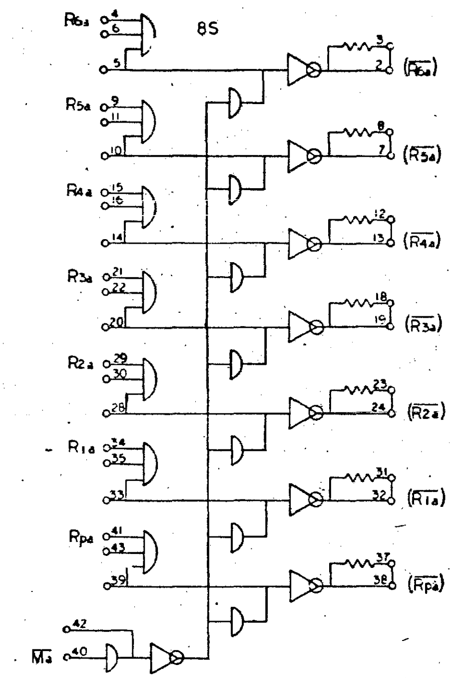
MODEL NO 9246

SIZE D | DWG NO 103258 | D

SCALE | DO NOT SCALE DRAWING | SHEET

103258 [D]

REV	DESCRIPTION	
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	



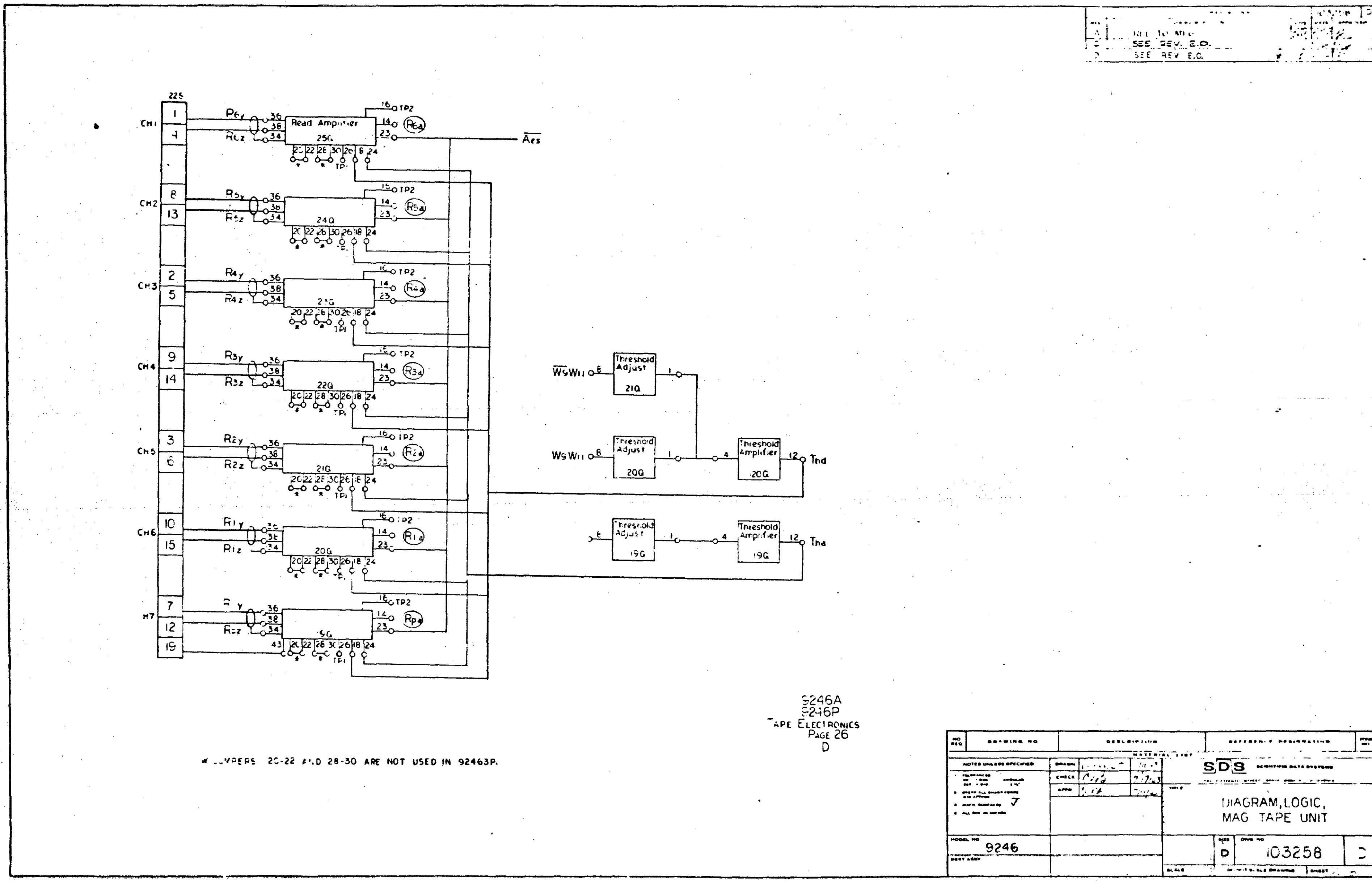
9246A
9246P
TAPE ELECTRONICS
PAGE 25
D

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

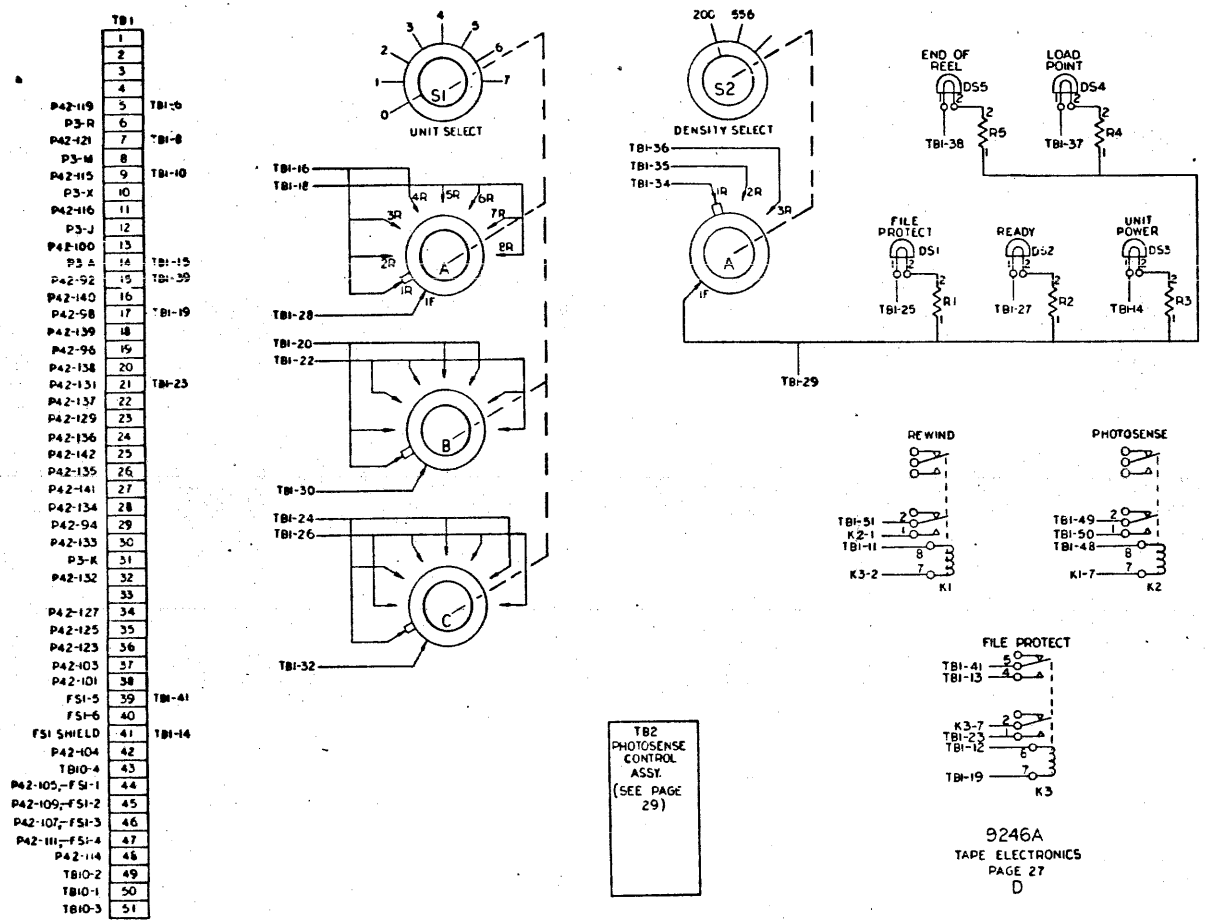
MODEL NO 9246

SIZE D | DWG NO 103258 | D



* JUMPERS 20-22 AND 28-30 ARE NOT USED IN 92463P.

REVISIONS			103258 D
REV	DESCRIPTION	CHG	DATE / APPROVED
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		



TB2
PHOTOSENSE
CONTROL
ASSY.
(SEE PAGE
29)

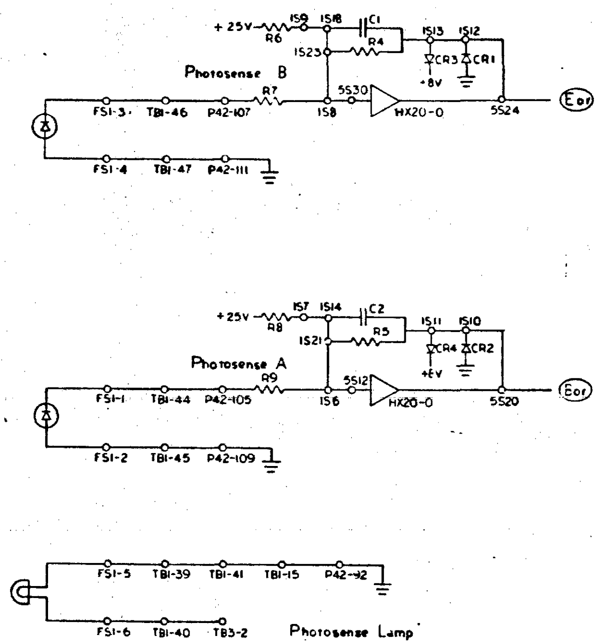
9246A
TAPE ELECTRONICS
PAGE 27
D

			SDS
			DIAGRAM, LOGIC, MAG TAPE UNIT
9246		D	103258 D

103258 D

REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG.			
C	SEE REV. E.O.			
D	SEE REV E.C.			

103258 D



9246A
TAPE ELECTRONICS
PAGE 28
D

103258 D

SDS SCIENTIFIC DATA SYSTEMS

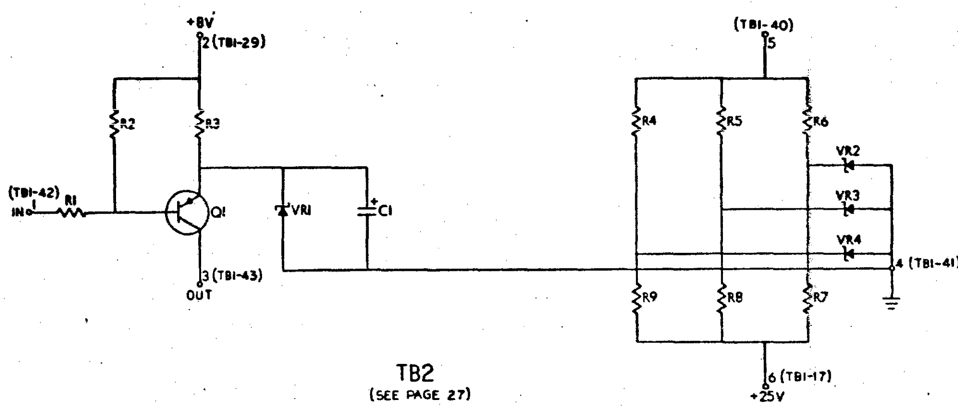
DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

SIZE D DWG NO 103258 D

SHEET 28

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV. E.O.
D	SEE REV E.O.



9246A,
MAG TAPE UNIT
PAGE 29
D

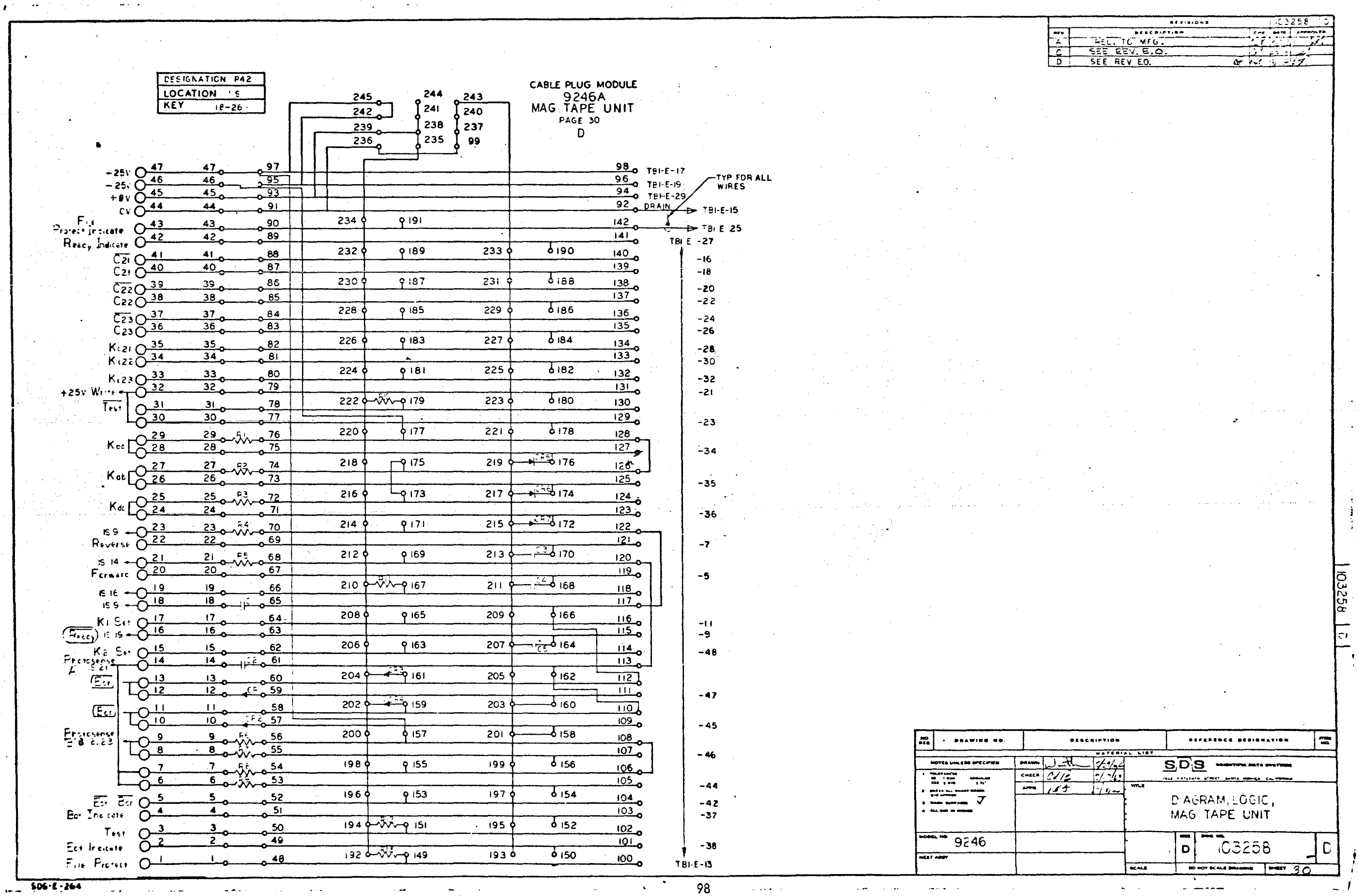
SDS

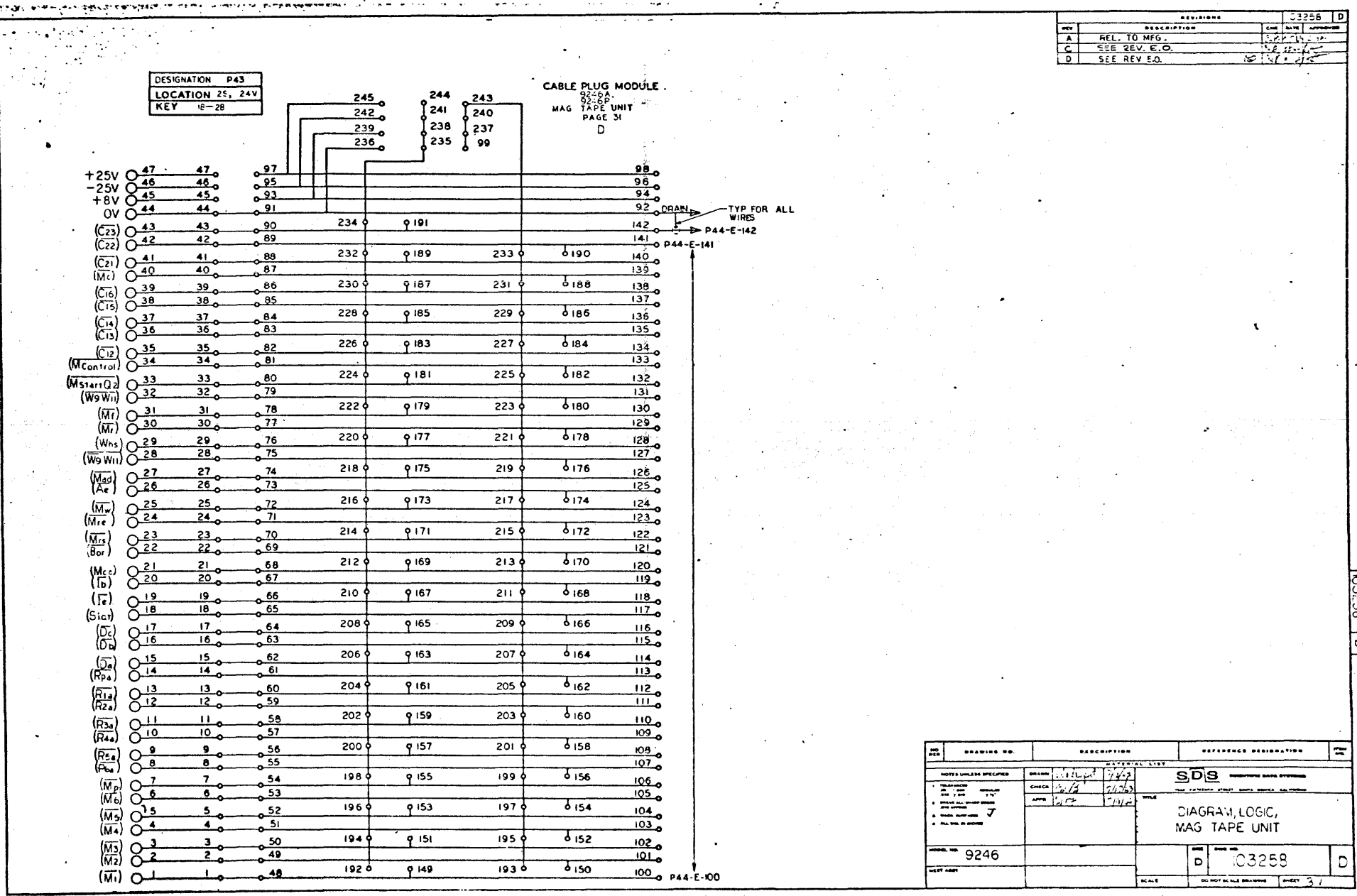
DIAGRAM, LOGIC
MAG TAPE UNIT

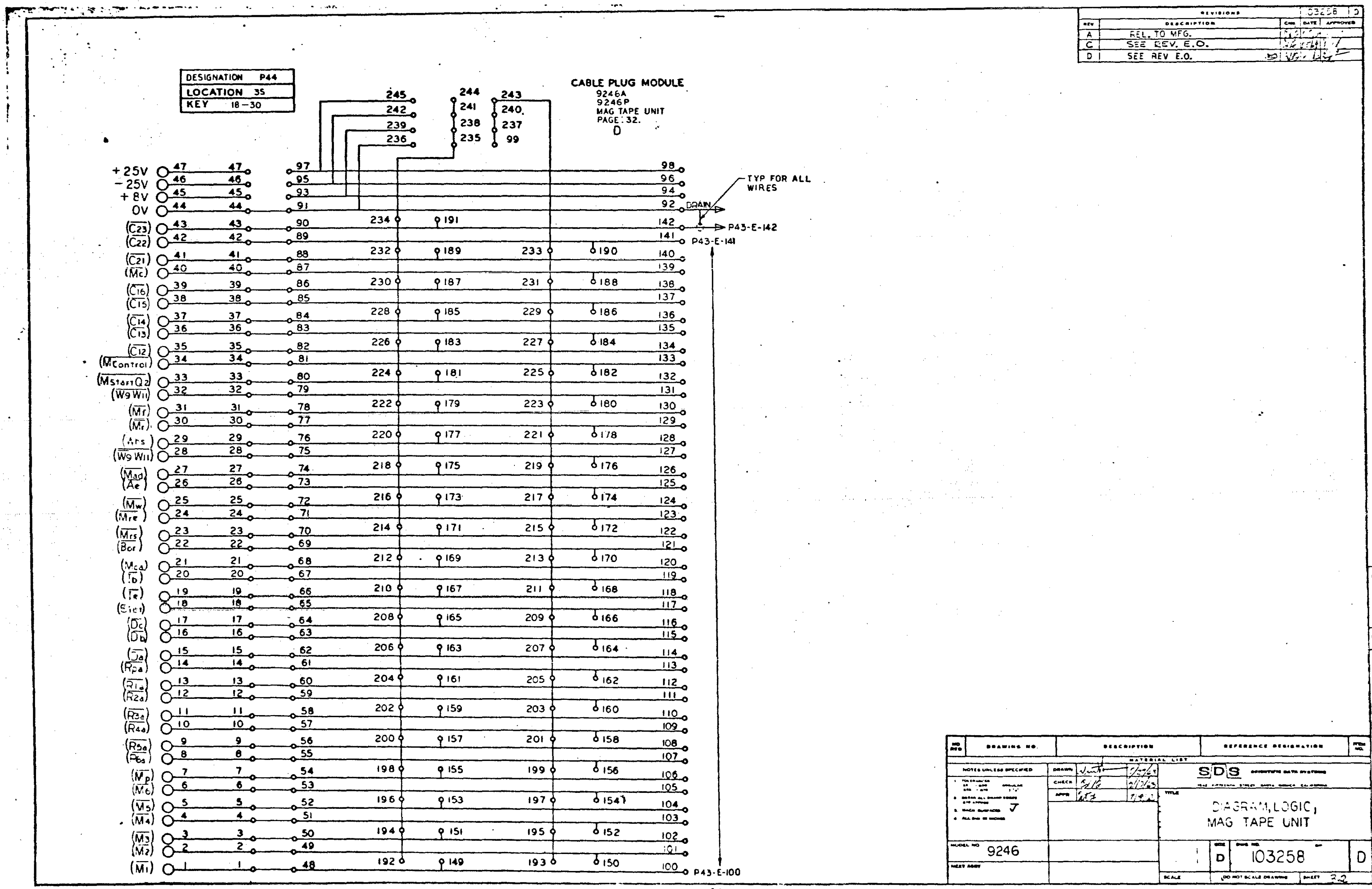
MODEL NO. 9246

SIZE D DWG NO. 103258 D

103258 D


CABLE PLUG MODULE
9246A
MAG TAPE UNIT
PAGE 30
D
DESIGNATION P42
LOCATION
KEY 18-26
TYP FOR ALL WIRES
DRAIN
REL. TO MFG.
SEE REV. E.O.
SEE REV EO.
SDS
DIAGRAM, LOGIC,
MAG TAPE UNIT
9246
103258
D
SDS-E-264


DESIGNATION P43
LOCATION 25, 24V
KEY 18-28
CABLE PLUG MODULE
92-6A
92-6P
MAG TAPE UNIT
PAGE 31
D
245
242
239
236
244
241
238
235
243
240
237
99
+25V
-25V
+8V
0V
(C23)
(C22)
(C21)
(Mc)
(C16)
(C15)
(C14)
(C13)
(C12)
(MControl)
(MStartQ2)
(W9W11)
(Mr)
(Mr)
(Whs)
(W9W11)
(Mad)
(Ae)
(Mw)
(Mre)
(Mrs)
(Bor)
(Mcc)
(Ib)
(Ie)
(Sict)
(Dc)
(Db)
(Da)
(Rpa)
(R1a)
(R2a)
(R3a)
(R4a)
(R5a)
(Pba)
(Mp)
(M6)
(M5)
(M4)
(M3)
(M2)
(M1)
DRAIN
TYP FOR ALL WIRES
P44-E-142
P44-E-141
P44-E-100
REVISIONS
03258 D
REL. TO MFG.
SEE REV. E.O.
SEE REV E.O.
DRAWING NO.
DESCRIPTION
REFERENCE DESIGNATION
MATERIAL LIST
SDS
DIAGRAM, LOGIC,
MAG TAPE UNIT
9246
03258
D
SCALE
DO NOT SCALE DRAWING
SHEET 31



REVISIONS
103258 D
A REL. TO MFG.
C SEE REV. E.O.
D SEE REV E.O.
DESIGNATION P44
LOCATION 35
KEY 18–30
CABLE PLUG MODULE
9246A
9246P
MAG TAPE UNIT
PAGE 32.
D
TYP FOR ALL WIRES
DRAIN
P43-E-142
P43-E-141
P43-E-100
+25V
−25V
+8V
0V
SDS
DIAGRAM, LOGIC,
MAG TAPE UNIT
9246
D
103258
D

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Q	RX 10	FH 17	OX 13	GC 10	BC 10	IH 12	GC 10	BC 10	IC 12	BC 10	BC 10	GC 11		OX 13	OX 13	OX 13	OX 13	OX 13	HK60	HK60	HK60	HK60	HK60	HK60	HK60
S	P42 ('A' UNITS) P70 ('P' UNITS)	P43 ZK57	P44	ZK 58	HX20 (NOT USED ON 'P' UNITS)	AX 14	AX 14	AX 14			IC 12	IC 12	GC 10	OX 13	OX 13	FC 17	FC 17	AK 52	AK 52	ZK56 NOT USED ON 92463A				ZK 51	ZK 51

9246A
9246P

TAPE ELECTRONICS
PAGE 33
D

REVISIONS		103258 D
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

D 103258 D

SHEET 33

REVISIONS		103258	D
REV	DESCRIPTION		
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY.
1	WRITE DRIVER	AK52	2
2	CABLE DRIVER	AX14	3
3	AND/OR BUFFER AMP	BC10	4
4	UNIVERSAL F.F.	FC17	2
5	GATE EXPANDER	GC10	3
6	GATE EXPANDER	GC11	1
7	OPERATIONAL AMP	HX20-C	1
8	READ AMP	HK60	7
9	AND INVERTER	IC12	3
10	ONE SHOT MULT.	OX13	8
11	RELAY DRIVER	RX10	1
12	RESISTOR	ZK51	2
13	TERM. MODULE	ZK56	1
14	TERM. MODULE	ZK57	1
15	TERM. MODULE	ZK58	1
16	AND INVERTER	IH12	1
17	UNIVERSAL F.F.	FH17	1

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY.	SUPPLIER CODE (SEE INDEX)
1	RESISTOR, 3.3K ± 2%	(P42) R1, R2, R3	3	16,17
2	1 MEGΩ	(P42) R4, R5, R6, R8	4	16,17
3	1K	(P42) R7, R9	2	16,17
4	RESISTOR, 8.2K ± 2%	(P42) R10, R11, R12, R13	4	16,17
5	CAPACITOR, MYLAR .0033 μF ± 10%	(P42) C1, C2	2	26,27,74
6	CAPACITOR, MYLAR .0068 μF ± 10%	(P42) C3, C4	2	26,27,74
7	CAPACITOR, TANTALUM .47 μF ± 20% 50V	(P42) C5	1	23,77
8	DIODE, SILICON SWITCHING 1N914A	(P42) CR1 THRU CR7	7	4,12,13,14
9	CONNECTOR, SOLDERTAIL 47 CONTACT # 7005-47	J(1Q) THRU J(25Q) J(1S) THRU J(20S) J(24S), J(25S)	47	82
10	RESISTOR, 1.8K ± 2%	(TB2) R1	1	16,17
11	15K	(TB2) R2	1	
12	180 Ω	(TB2) R3	1	
13	390 Ω	(TB2) R4, R5, R6	3	
14	RESISTOR, 470 Ω ± 2%	(TB2) R7, R8, R9	3	16,17
15	DIODE, VOLTAGE REGULATOR 1N752	(TB2) VR1	1	2,12,13,14
16	DIODE, VOLTAGE REGULATOR 1N964A	(TB2) VR2, VR3, VR4	3	2,6,14,65
17	CAPACITOR, TANTALUM 4.7 μF ± 20%, 50V	(TB2) C1	1	23,77
18	TRANSISTOR, SILICON SWITCHING 2N1132	(TB2) Q1	1	3,10,11
19	RECEPTACLE, 19 PIN # RSK 19-31SL	J1	1	134
20	PLUG, 19 PIN # SK19-32S	J2	1	134
21	SWITCH, ROTARY # 102163	S1, S2	2	SDS
22	LAMP, INCANDESCENT # 47	DS1 THRU DS5	5	84
23	RESISTOR, WW 10 Ω ± 5%	R1 THRU R5	5	99,100
24	RELAY, DPDT # DOSX-7T # BO-6A/115 VAC	K1 THRU K4	4	78 79
25	SWITCH, TOGGLE DPDT # 63054-SE	S1(S)	1	106
26	CAPACITOR, TANTALUM 4.7 μF ± 20% 50V	C1(Q)	1	23,77

9246A,
MAG TAPE UNIT
PAGE 34
D

SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC
MAG TAPE UNIT

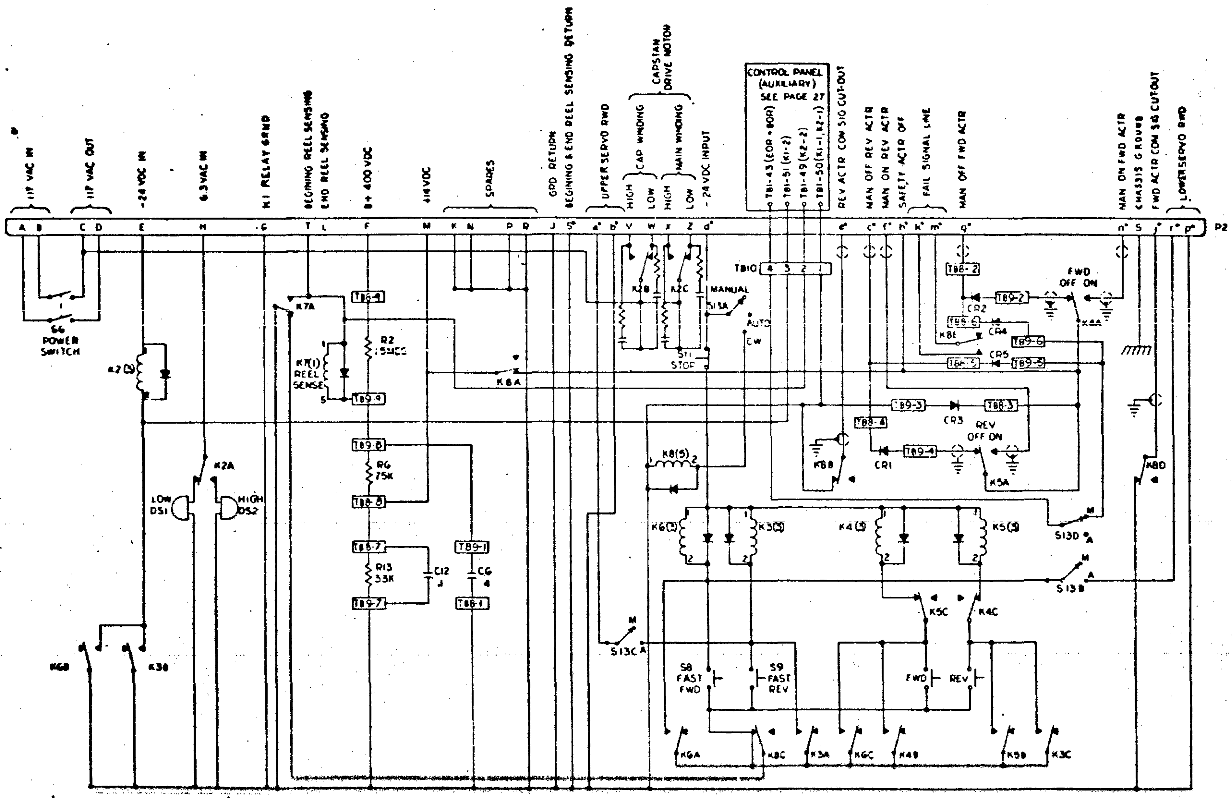
MODEL NO. 9246

SIZE D DWG NO. 103258 D

103258 D

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV. E.O.
D	SEE REV E.O.

103258 D



7. SIGNIFIES CHASSIS GRND ; SIGNIFIES COMMON GROUND
6 USED WITH ASSY NO 310843710
5 S13 D-E NOT USED
4 ALL DIODES ARE IN2069
3 ALL RELAYS SHOWN IN DEENERGIZED POSITION
2 ALL RESISTORS IN OHMS
1 ALL CAPACITORS IN MICROFARADS
NOTES: UNLESS OTHERWISE SPECIFIED

MANUAL CONTROL PANEL

9246A,
MAG TAPE UNIT
PAGE 35
D

SDS

DIAGRAM, LOGIC
MAG TAPE UNIT

MODEL NO 9246

SIZE D | DWG NO. 103258 | D

SHEET 35

REVISIONS				103258
REV	DESCRIPTION	CHK	DATE	APPROVED
C	SEE REV. E.O.			
D	SEE REV E.O.			

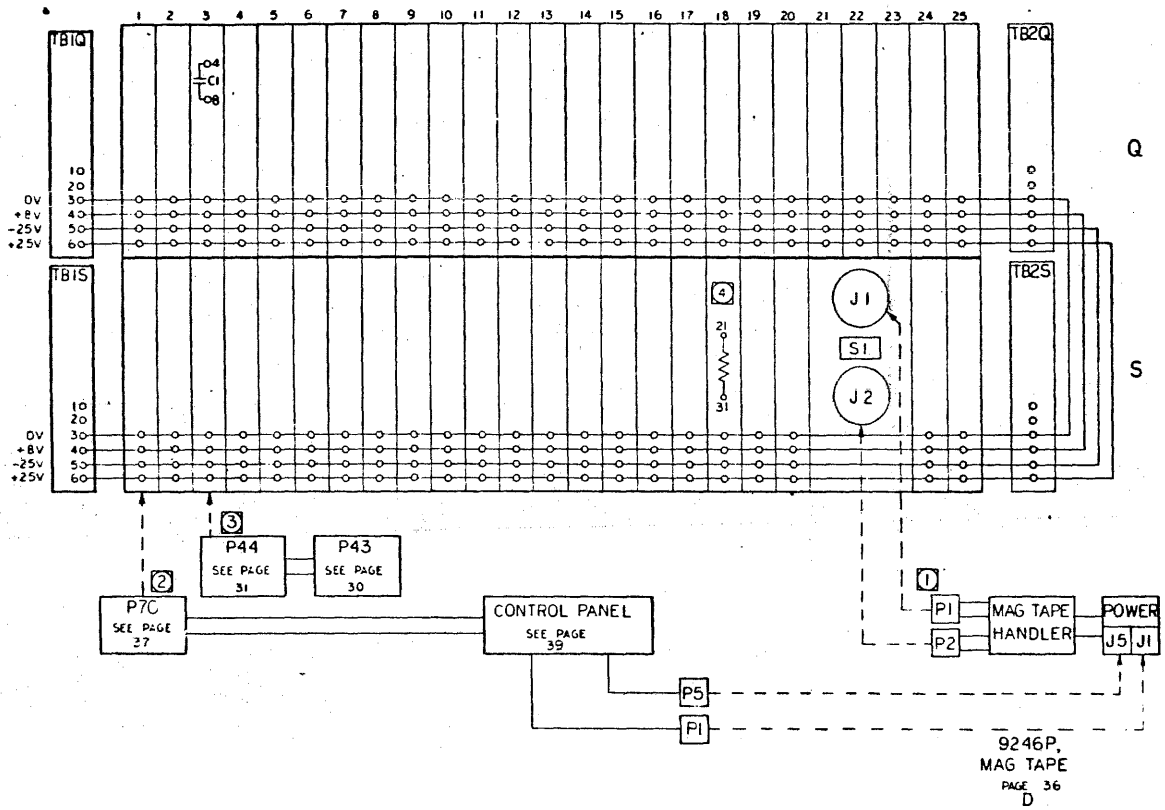
NOTES: UNLESS OTHERWISE SPECIFIED

[3] RECEPTACLE J(3S) IS PROVIDED FOR THE P44 TO P43 CABLE. P43 CONNECTS TO RECEPTACLE J(24V) OF THE MODEL 9248 CONTROL UNIT OR TO J(2S) OF A SECOND MODEL 9246.

[4] USED ON 92463P ONLY, RESISTOR 100680-750.

[1] RECEPTACLES J1&J2 ARE PROVIDED FOR CONNECTION TO THE READ & WRITE HEADS O THE MAG TAPE UNIT.

[2] RECEPTACLE J(1S) IS PROVIDED FOR P7O FROM CONTROL PANEL.



DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.

NOTES UNLESS SPECIFIED

MATERIAL LIST

DRAWN

CHECK

APPD

SDS

TITLE: DIAGRAM, LOGIC MAG TAPE

MODEL NO. 9246

SIZE D

DWG NO. 103258

D

SCALE

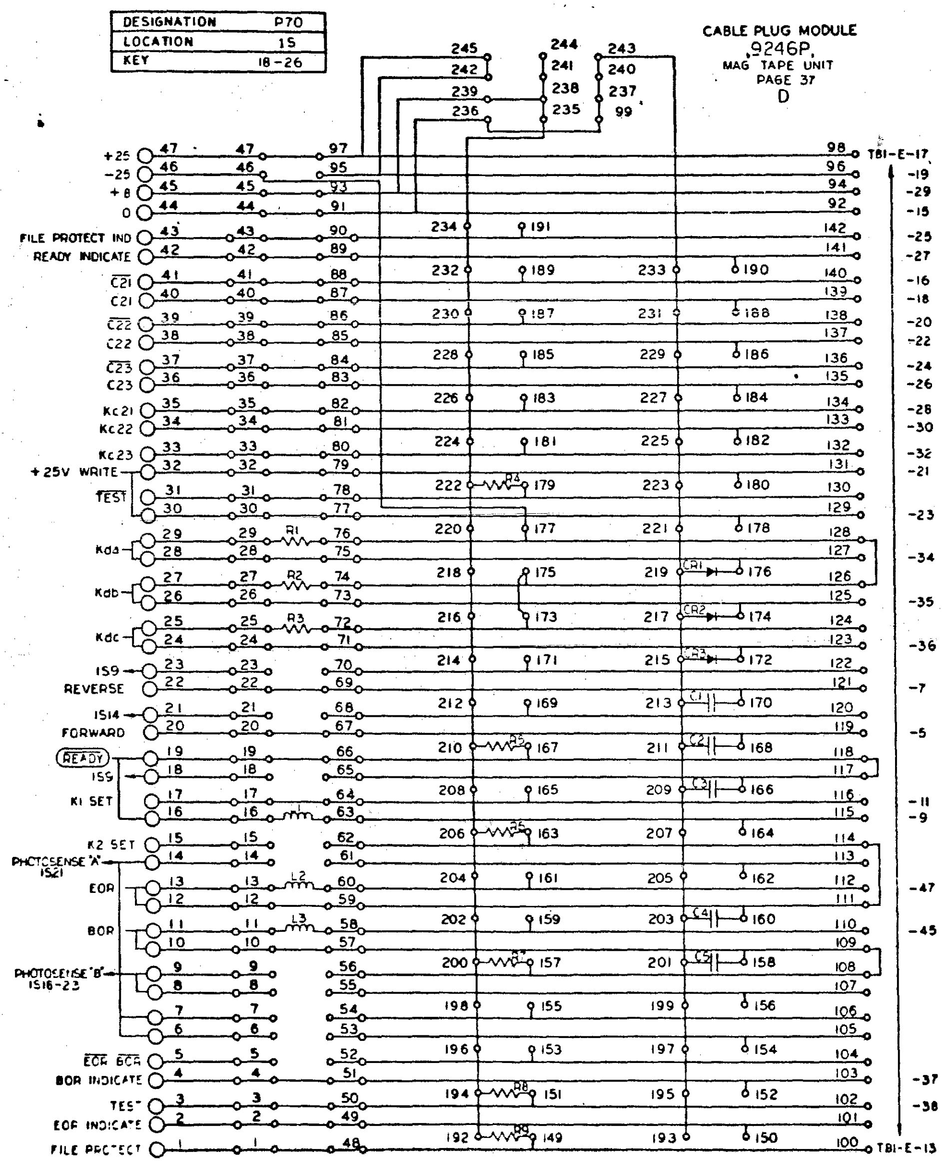
DO NOT SCALE DRAWING

SHEET

103258 D1

REV	DESCRIPTION
C	SEE REV. E.O.
D	SEE REV E.O.

103258 D



SDS-E-204

NOTES UNLESS SPECIFIED	DRAWN	CHECK	APPD

SDS

DIAGRAM, LOGIC
MAG TAPE UNIT

MODEL NO. 9246

SIZE D DWG NO. 103258 D

SHEET 37

REV	DESCRIPTION	CHK	DATE	APPROVED
C	SEE REV. E.O.			
D	SEE REV E.O.			

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY
1	WRITE DRIVER	AK52	2
2	CABLE DRIVER	AX14	3
3	AND/OR BUFFER AMP	BC10	4
4	UNIVERSAL F.F.	FC17	2
5	GATE EXPANDER	GC10	3
6	GATE EXPANDER	GC11	1
7	READ AMP	HK60	7
8	AND INVERTER	IC12	3
9	ONE SHOT MULT.	OX13	8
10	RELAY DRIVER	RX10	1
11	RESISTOR	ZK51	2
12	TERM. MODULE	ZK56	1
13	TERM. MODULE	ZK57	1
14	TERM. MODULE	ZK58	1
15	AND INVERTER	IH12	1
16	UNIVERSAL F.F.	FH17	1

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY.	SUPPLIERS CODE (SEE INDEX)
1	RESISTOR, 3.3 K ± 2%	(P70) R1, R2, R3	3	16,17
2	RESISTOR, 1.8 K ± 2%	(P70) R6, R7	2	16,17
3	RESISTOR, 8.2 K ± 2%	(P70) R4, R8, R9	3	16,17
4	CAPACITOR, MYLAR .0068 μF ± 10%	(P70) C1, C2	2	26,27,74
5	CAPACITOR, MYLAR .0033 μF ± 10%	(P70) C4, C5	2	26,27,74
6	DIODE, SILICON SWITCHING 1N914A	(P70) CR1 THRU CR3	3	4,12,13,14
7	INDUCTOR, MOLDED 10000 μH ± 5%	(P70) L2, L3	2	42,90,91
8	RECEPTACLE, 19 PIN #RSK 19-315L	J1	1	134
9	PLUG, 19 PIN #SK19-326	J2	1	134
10	SWITCH, ROTARY #102163	S101, S102	2	SDS
11	RESISTOR, WW 10 Ω ± 5%	R1 THRU R5	5	99,100
12	RELAY, DPDT #DOSX-7T #80-6A/115 VAC	K1, K3	2	78 79
13	SWITCH, TOGGLE DPDT #83054-SE	S1 (S)	1	106
14	CAPACITOR, TANTALUM 4.7 μF ± 20% 50V	C1 (Q)	1	23,77
15	CONNECTOR, SOLDERTAIL 47 CONTACT #7008-47	J(1Q) THRU J(26Q) J(1S) THRU J(20S) J(24S), J(25S)	47	82
16	LAMP, MINIATURE #328	DS101 THRU DS105	20	83,84
17	INDUCTOR, MOLDED 330 μH ± 5%	(P70) L1	1	42,90,91
18	RESISTOR, 560 Ω ± 2%	(P70) R5	1	16,17
19	CAPACITOR, MYLAR, .0010 μF ± 10%	(P70) C3	1	26,27,74

9246P,
MAG TAPE UNIT
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D

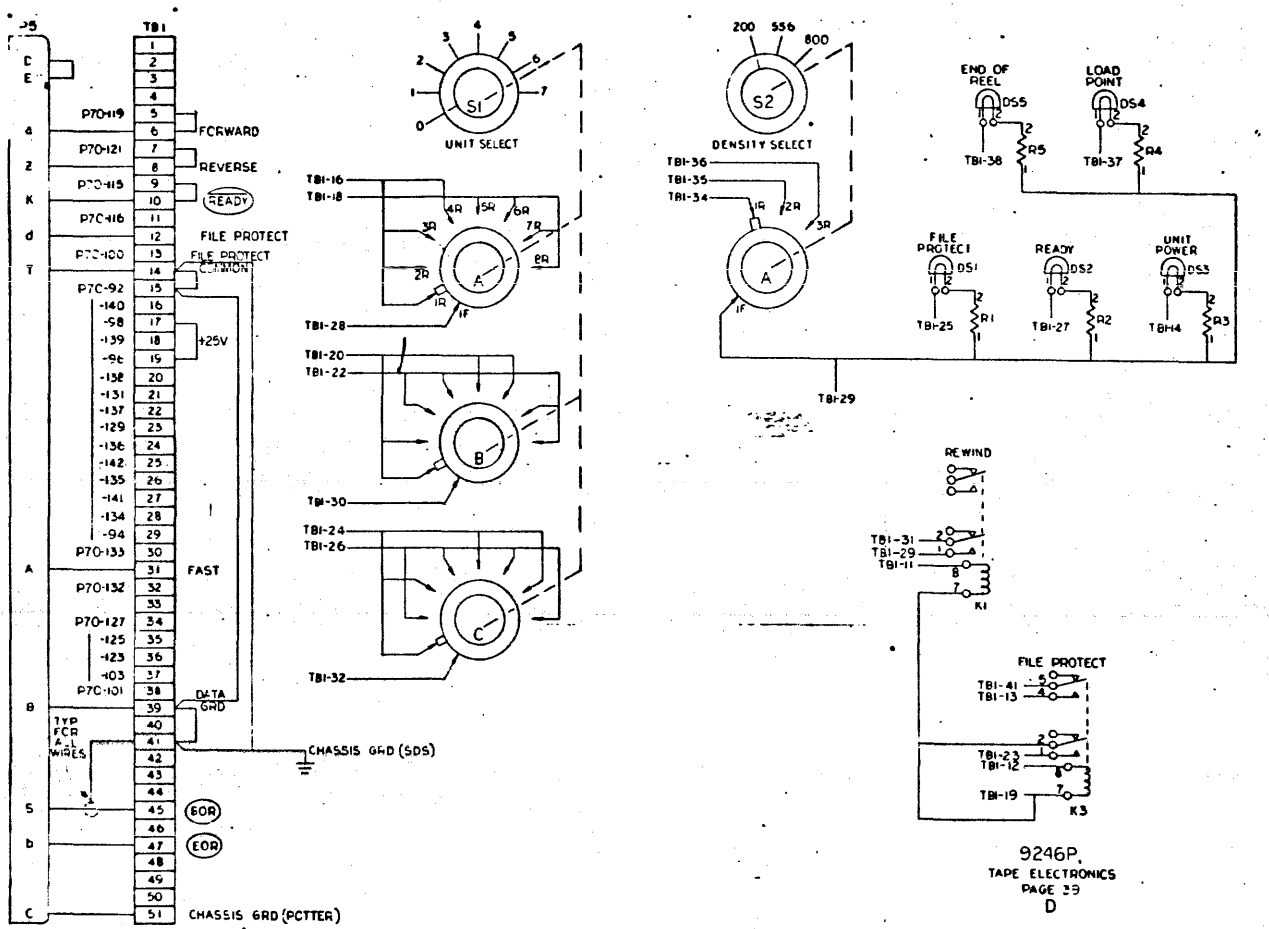
✱ NOT USED ON 92463P

103258 D

SDS
SCIENTIFIC DATA SYSTEMS
SANTA MONICA, CALIFORNIA

DIAGRAM, LOGIC,
MAG TAPE UNIT

SIZE D DWG. NO. 103258 CHANGE LETTER D



9246P,
TAPE ELECTRONICS
PAGE 39
D

REVISIONS			103258	D
LTR	DESCRIPTION	DATE	APPROVED	
C	SEE REV. E.O.			
D	SEE REV E.O.			

DRAWN	WINTHER	7/14/67	
CHECKED			
APPROVED			

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

9246

D 103258 D

SHEET 39

103258 D

CONTENTS

Module Changes

9248	92481	92482	92483	9348	Coordinate With EO	Module Change		
EO 103514	EO 107535	EO 107536	EO 107537	EO 107538		From	To	Loca.
B					EO 103403B	OX13	CK52	5V
D					NONE	OX11	OX13	2K
D					NONE	OX11	OX13	3K
D					NONE	OX11	OX13	9K
D					NONE	OX11	OX13	4V
D					NONE	OX11	OX13	6V
E					EO 103403S	FC17	FH17	1K
E					EO 107514H	FC17	FH17	15K
E						FC17	FH17	19K
E						FC17	FH17	20K
F	B	B	B	B		GC10	GH10	10K
F	B	B	B	B		GC10	GH10	11K
G	B	B	C	B		GC10	GH10	17K
G	B	B	C	B		GC10	GH10	18K
G	B	B	C	B		IC12	IH12	16V
H	C				EO 107514H	OX13	OX14	9K
		C	A	C	EO 103043S	OX13	OX14	2V
		C	A	C	EO 107514H	OX13	OX14	9K

REV	DESCRIPTION
A	REL TO MFG
B	SEE REV E.O.
C	SEE REV E.O.
D	SEE SEE E.O.
E	SEE REV E.O.

NOTE:
THIS DWG APPLIES TO BOTH THE AMPEX (A) & POTTER (P) MAG TAPE UNITS. FOR SIMPLICITY ONLY 9246A AND/OR 9246P DESIGNATIONS ARE SHOWN ON INDIVIDUAL PAGES. 9246A IMPLIES 9246A, 92461A, 92462A, & 9346A. 9246P IMPLIES 9246P, 92461P, 92462P & 92463P. THE FOLLOWING CHART INDICATES THE EFFECTIVITY OF INDIVIDUAL PAGES.

PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG
1	E								
2	C								
3	C								
4	E								
5	E								
6	C								
7	E								
8	E								
9	C								
10	C								
11	C								
12	C								
13	E								
14	C								
15	C								
16	C								
17	C								
18	C								
19	C								
20	C								
21	C								
22	E								
23	E								
24	E								
25	E								
26	E								
27	C								
28	D								
29	D								
30	E								
31	E								
32	E								
33	E								
34	E								
35	D								
36	E								
37	E								
38	E								
39	D								

NOTES:
1. REV LETTERS LISTED INDICATE STATUS OF EACH SHEET OF THIS MULTIPLE SHEET DRAWING.
2. CHECK INDIVIDUAL SHEETS FOR REVISION LETTER AGAINST THIS SHEET BEFORE USING THIS DRAWING.

REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 16B)

PAGE NO	AMPEX ONLY	POTTER ONLY	BOTH	92462P/3P VARIATIONS
1			X	
2	X			
3			X	
4			X	
5			X	
6			X	
7			X	
8			X	
9			X	
10			X	
11			X	
12			X	
13			X	X
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	
26			X	X
27	X			
28	X			
29	X			
30	X			
31			X	
32			X	
33			X	
34	X			
35	X			
36		X		X
37		X		
38		X		
39		X		

LOGIC	WIRE LIST
103258 E	103404 M

9246A, 9246P
MAG TAPE UNIT
PAGE 1
E

103258 E

SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC
MAG TAPE UNIT

MODEL NO 9246

SIZE D DWG NO 103258 E

EO 103062 REVISION CHASSIS ASSEMBLY

Adds C1 capacitor to chassis Q J3. Capacitor part No. 100311-475. See logic diagram Page 5.

Reason: To fire 1 second delay (Dr) and hold off ready until delay runs out.

Tape units without capacitor added when performing a reverse scan and reaching load point (Bor) become immediately ready. Forward command can be issued before unit is capable of accepting it and will hang up.

Signal	Logic Pages
Ae	18, 24
$\overline{Ae}$	24, 31
Aes	6, 18
$\overline{Aes}$	6, 26
(Bor)	22, 28, 31, 37
Bor	4, 5, 6, 7, 19, 23, 24
$\overline{Bor}$	4, 22, 30
$(\overline{Bor})$	24
Bot	4, 8
$\overline{Bot}$	4, 5
Bot Indicate	8, 37, 30
Ch 1 Read	26
Ch 2 Read	26
Ch 3 Read	26
Ch 4 Read	26
Ch 5 Read	26
Ch 6 Read	26
Ch 7 Read	26
Ch 1 Write	13
Ch 2 Write	13
Ch 3 Write	13
Ch 4 Write	13
Ch 5 Write	13
Ch 6 Write	13
Ch 7 Write	13
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C13	20, 7
$\overline{C13}$	30, 20
C14	20, 7
$\overline{C14}$	30, 20, 7
C15	20, 7
$\overline{C15}$	30, 20, 7
C16	20, 7
$\overline{C16}$	30, 20, 7, 4
C21	22, 27, 30, 37, 39
$\overline{C21}$	31, 27, 37, 39, 22, 30
C22	22, 27, 37, 30, 39
$\overline{C22}$	31, 37, 30, 39, 27, 22
C23	22, 27, 37, 30, 39
$\overline{C23}$	31, 30, 37, 39, 27, 22
$(\overline{Da})$	24, 31
$(\overline{Db})$	24, 31
$(\overline{Dc})$	24, 31
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$\overline{Dr}$	6, 4
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$\overline{Eor}$	22
Eor + Bor	22, 8
EOR + BOR	29, 35 A only
$\overline{Eor}$ $\overline{Bor}$	19, 22, 29, 30, 37
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$\overline{Eot}$	4, 5
Eot Indicate	8, 30, 37
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File Protect Indicate	8, 30, 37
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$(\overline{Ie})$	23, 31
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Kc22	27, 39, 6, 30, 37
Kc23	27, 39, 6, 30, 37
Kda	27, 24, 30, 37, 7, 39
Kdb	27, 24, 30, 37, 7, 39
Kdc	27, 24, 30, 37, 7, 39
K1 Set	8, 30, 37
K2 Set	8, 30, 37
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$\overline{Mad}$	22, 4
$(\overline{Mad})$	24
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Ma Mr	19, 14, 16, 18, 5
Ma Mr + Mb	19, 5, 13
Ma Test	19, 14, 15, 16, 17, 18
Ma Test*	19
Ma $\overline{Test}$	19, 13
Mb	4, 5, 8, 19
$\overline{Mb}$	4, 6
Mc	6, 5, 9, 10
$\overline{Mc}$	6
(Mca)	30, 21
$\overline{Mca}$	4, 5, 21
M Control	20, 4
$\overline{M\ Control}$	31, 20
Mf	30, 21, 23
$(\overline{Mf})$	30, 21
Mp	31, 21, 5
$(\overline{Mp})$	31, 21
Mps	5, 11, 19
Mpt	11, 5, 13
Mpw	13
Mr	30, 4, 19, 21
$(\overline{Mr})$	31, 21
$\overline{Mre}$	31, 11, 12
Mrs	5, 6, 9, 10
$\overline{Mrs}$	6, 31
M Start Q2	20, 4
$(\overline{M\ Start\ Q2})$	31, 20
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$(\overline{Mw})$	31, 6
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$(\overline{M1})$	31, 21
M2	21, 9
$(\overline{M2})$	31, 21
M3	21, 9
$(\overline{M3})$	31, 21
M4	21, 10
$(\overline{M4})$	31, 21
M5	21, 10
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M3s	9, 12, 19
M4s	10, 12, 19
M5s	10, 12, 19
M6s	10, 12, 19
M1t	11, 9, 13
M2t	11, 9, 13
M3t	12, 9, 13
M4t	12, 10, 13
M5	12, 10, 13
M6t	12, 10, 13
M1w	13
M2w	13
M3w	13
M4w	13
M5w	13
M6w	13
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(Ready)	6
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Reverse Actuate	13, 30, 37
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Rpar	18
Rpy	26
Rpz	26
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R3a	16, 17, 19, 25
R4a	14, 15, 19, 25
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$\overline{R1a}$	25, 31
$\overline{R2a}$	25, 31
$\overline{R3a}$	25, 31
$\overline{R4a}$	25, 31
$\overline{R5a}$	25, 31
$\overline{R6a}$	25, 31
(R1a)	26, 16, 17
(R2a)	26, 16, 17
(R3a)	26, 16, 17
(R4a)	26, 14, 15
(R5a)	26, 14, 15
(R6a)	26, 14, 15
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R2af	16
R3af	16
R4af	14
R5af	14
R6af	14
R1ar	17
R2ar	17
R3ar	17
R4ar	15
R5ar	15
R6ar	15
R1y	26
R2y	26
R3y	26
R4y	26
R5y	26
R6y	26
R1z	26
R2z	26
R3z	26
R4z	26
R5z	26
R6z	26
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$\boxed{\overline{Siot}}$	7, 23
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$\overline{Test}$	13, 19, 30, 37
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Thd	26
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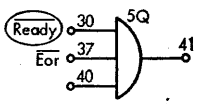
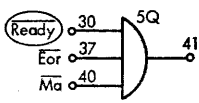
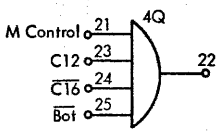
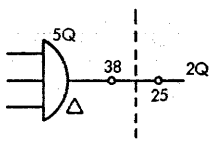
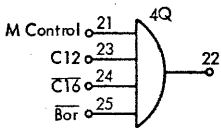
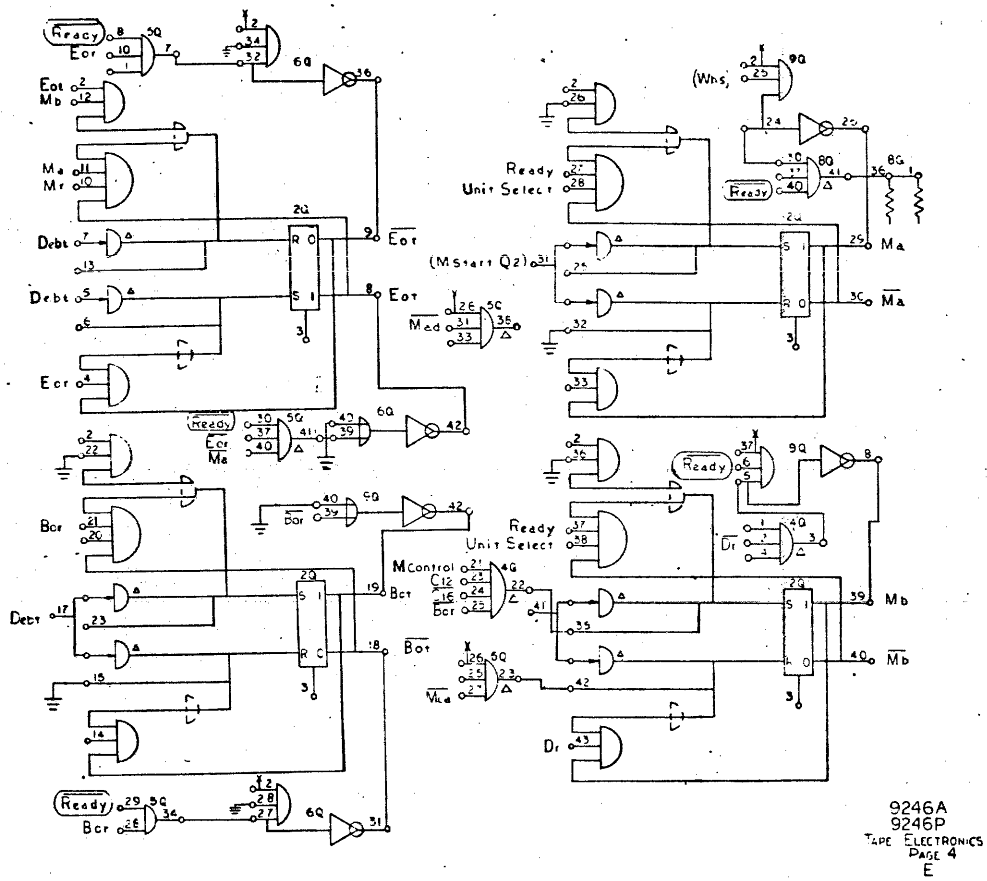
$\overline{W9}$ W11	21, 26
$(\overline{W9\ W11})$	31, 21
Whs	32, 4, 31

9246A
9246P

PAGE 3
E

From	To	Reason
103258A 	103758B 	Wire list EO 103404B Adds $\overline{Ma}$ term to eliminate resetting Eot Flip-Flop due to noise on ready line.
103258D  	103258E  Remove connection 5Q 38 to 2Q 25	Wire list EO 103404H Changes $\overline{Bot}$ term to $\overline{Bor}$ driving set side of Mb Flip-Flop. For reverse scan and rewind problems at beginning of tape. Noise on the $\overline{Mad}$ line setting Ma. Also $\overline{Mad}$ is redundant. EOM's can only legally select one unit at a time.



REV	DESCRIPTION
A	REL TO MFG
B	SEE REV EO
C	SEE REV. E.O.
D	SEE REV E.O.
E	SEE REV EO

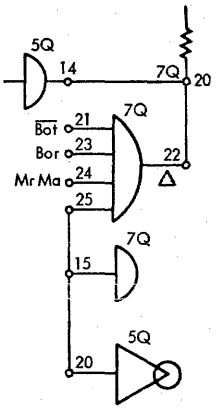
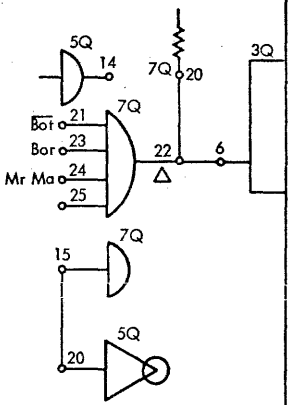
SDS

DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

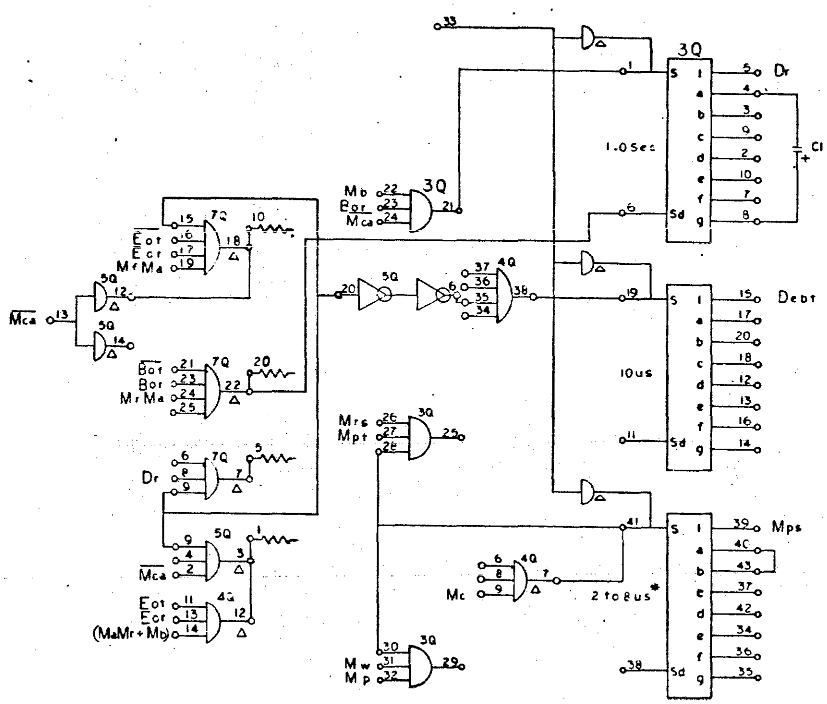
D 103258 E

103258 E

From	To	Reason
103258D 	103258E 	103404H $\overline{\text{BOT}}$ sets 1 sec delay for reverse scan and rewind problems at beginning of tape.

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV E.O.
D	SEE REV EO
E	SEE REV EO

C3258



* SEE CALIBRATION PROCEDURE
IN TECHNICAL MANUAL

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9246P
TAPE ELECTRONICS
PAGE 5
E

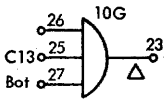
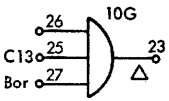
SDS

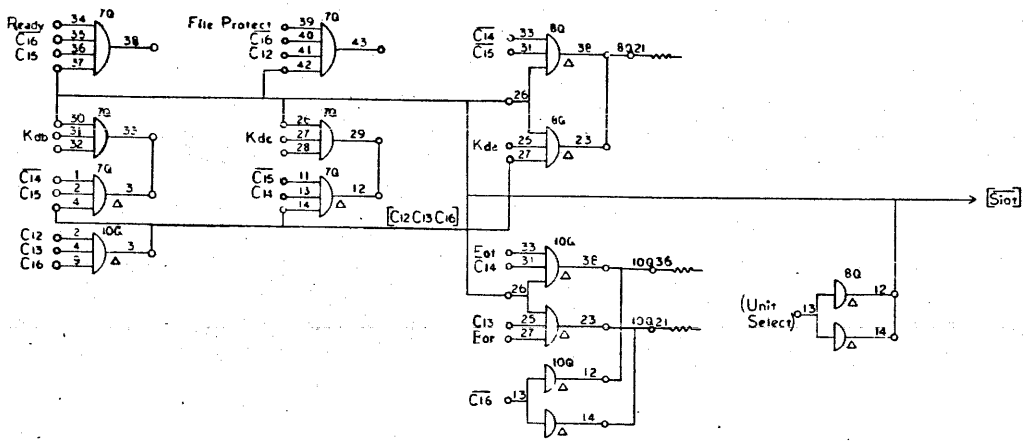
DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

D 103258 E

1C3258 E

From	To	Reason
103258D  	103258E  	EO 103404L Bot term replaced by Bor term for early indication of load point.



9246A
9246P
TAPE ELECTRONICS
PAGE 7
E

REV	DESCRIPTION	C3258
A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.C.	
E		

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION
NOTES UNLESS SPECIFIED	MATERIAL LIST	

SDS

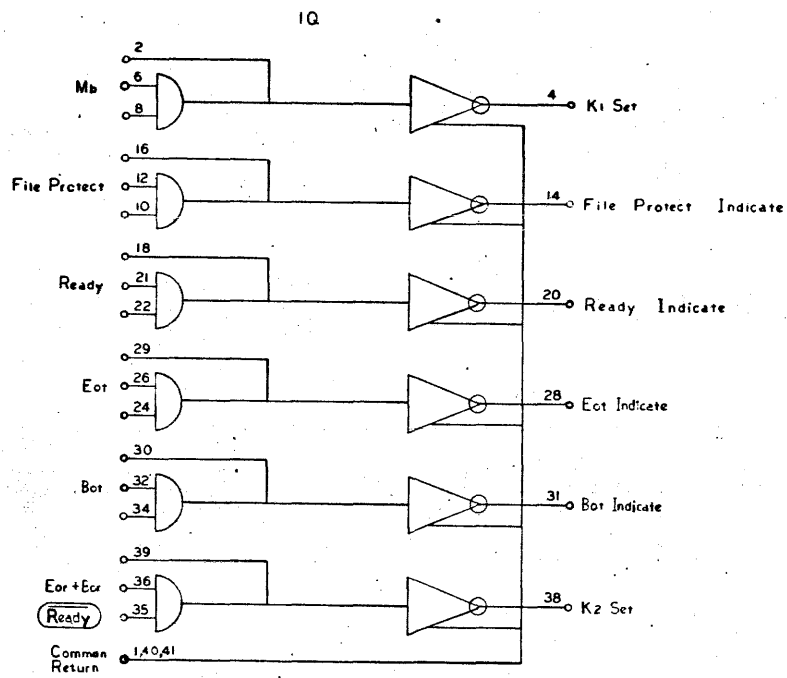
DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

SIZE D | DWG NO 103258 | E

SHEET 7

103258 F



A	REL TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	
E	SEE REV E.O.	

C3258 E

9246A
9246P
TAPE ELECTRONICS
PAGE 8
E

SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

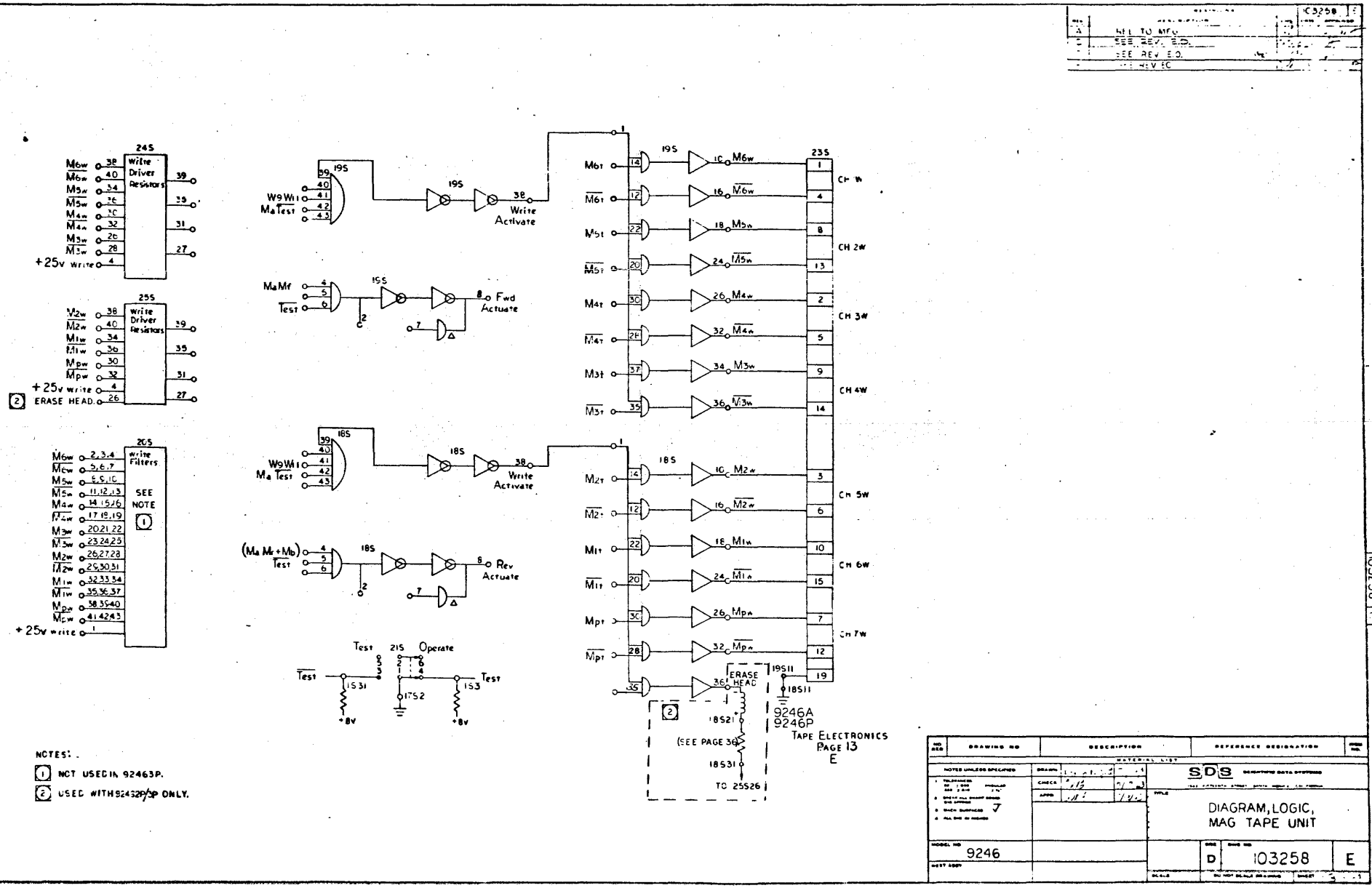
MODEL NO 9246

D 103258 E

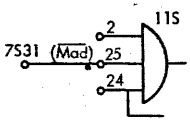
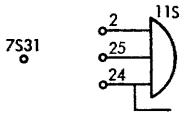
The following chart shows the pin numbers for the head wiring on a Potter unit.

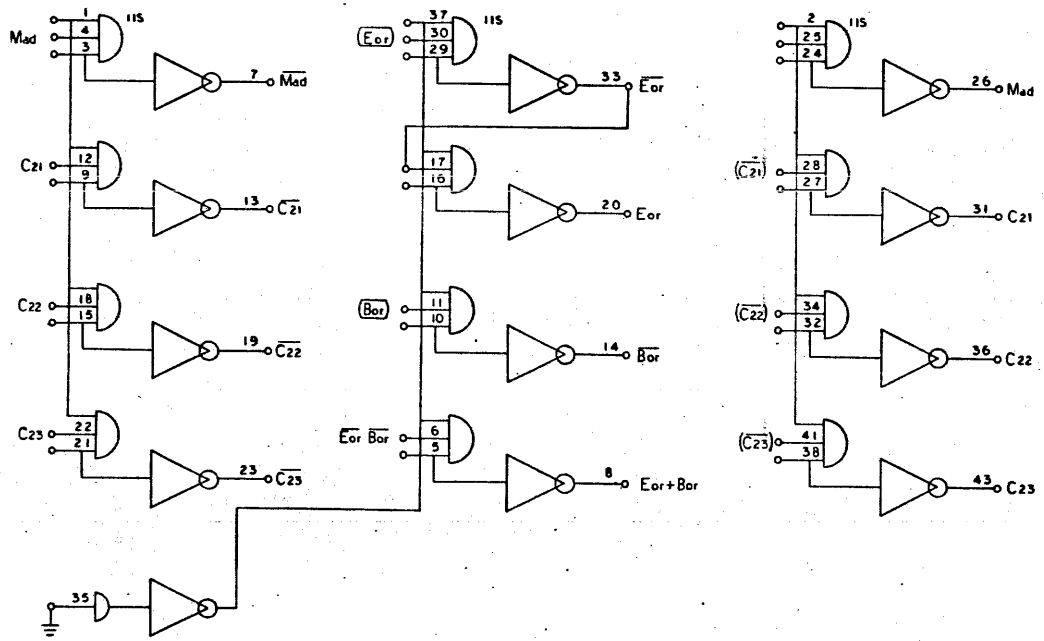
(PICO = Potter Instrument Co.)

PICO Channel	PICO Connector	SDS Connector	SDS Channel
1	A - C	7 - 12	7
2	B - D	10 - 15	6
3	E - F	3 - 6	5
4	J - K	9 - 14	4
5	L - M	2 - 5	3
6	R - S	8 - 13	2
7	Y - Z	1 - 4	1
	Blk | Wht	Blk | Wht	


24S
Write Driver Resistors
+25v write
25S
Write Driver Resistors
+25v write
ERASE HEAD
20S
Write Filters
SEE NOTE 1
+25v write
19S
18S
Write Activate
Fwd Actuate
Rev Actuate
Test
Operate
153I
175Z
153
+8v
23S
CH 1W
CH 2W
CH 3W
CH 4W
CH 5W
CH 6W
CH 7W
ERASE HEAD
18S11
18S21
(SEE PAGE 36)
18S31
TO 25S26
9246A
9246P
TAPE ELECTRONICS
PAGE 13
E
NOTES:
1 NOT USED IN 92463P.
2 USED WITH 92432P/3P ONLY.
SDS
DIAGRAM, LOGIC, MAG TAPE UNIT
9246
D
103258
E

Addendum

From	To	Reason
103258D  	103258E  	EO 103404H Eliminates (Mad) Buss. See page 4 addendum for explanation.



9246A
9246P
TAPE ELECTRONICS
PAGE 22
E

REV	DESCRIPTION
C	RELEASED TO MFG
D	SEE REV. E.O.
E	SEE REV E.O.

C3256

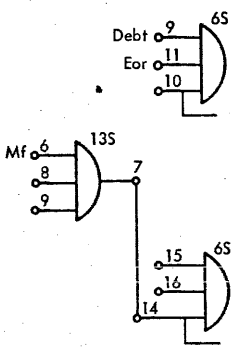
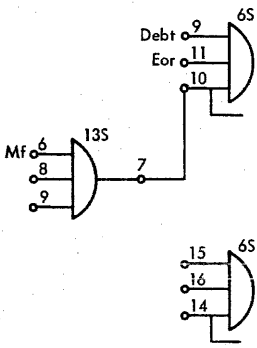
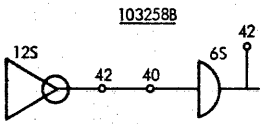
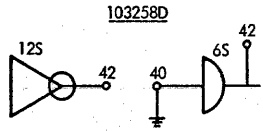
C3256 F1

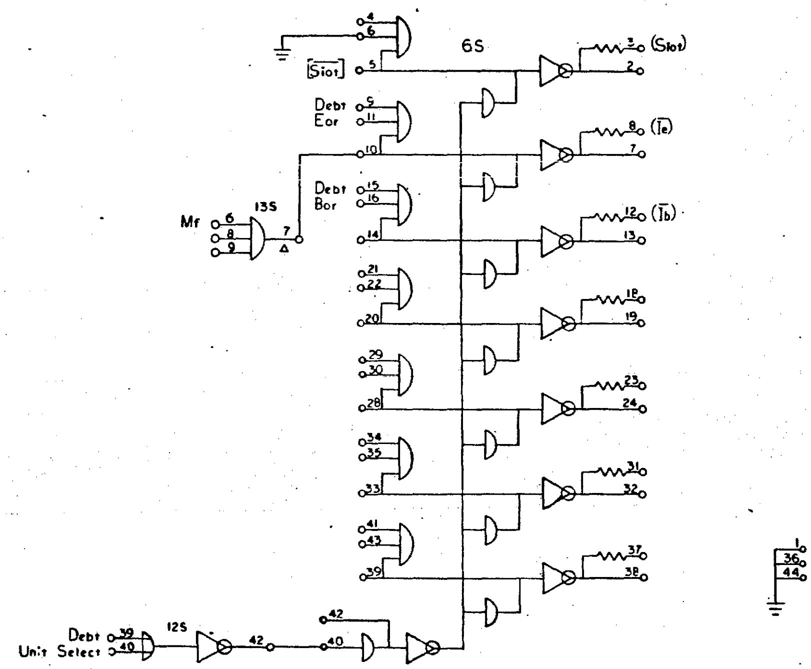
SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

9246

D 103258 E

From	To	Reason
103258A 	103258B 	EO 103404 B Allows Eor interrupt in forward direction only.
103258B 	103258D 	EO 103404 E Prevents Siot from floating. Eliminating False SKS Answers.
103258D Wires ~~6S2 to 6S3~~ ~~6S7 to 6S8~~ 6S12 to 6S13	103258E Deleted Wires and Added Ground to 6S Pins 1 and 36 from 6S Pin 44	EO 103404 H To allow Logic operation with new ZK57 and ZK58 Terminators. ZK57 - 103471-D ZK58 - 103474-B See Page 40 and 41



9246A
9246P
TAPE ELECTRONICS
PAGE 23
E

REV	DESCRIPTION
A	REL TO MFG
B	SEE REV EO
C	SEE REV E.O.
D	SEE REV E.O.
E	SEE REV EO

SDS

DIAGRAM, LOGIC, MAG TAPE UNIT

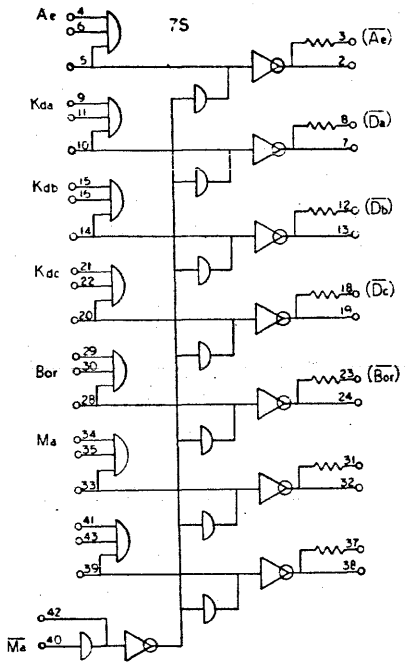
MODEL NO 9246

SIZE D DWG NO 103258 E

103258 E

From	To	Reason
103258D	103258E	EO 103404H
Wires • 7S2 to 7S3 7S7 to 7S8 7S12 to 7S13 7S18 to 7S19 7S23 to 7S24 7S31 to 7S32	Deleted wires and added ground to pins 1 & 36 from pin 44.7S	See page 23, Item 3 addendum for explanations.
$\overline{\text{Mad}}$ connected to 7S pin 32	deleted $\overline{\text{Mad}}$ term from 7S pin 32	See Page 4 addendum for explanation.

REV	DESCRIPTION	C3258
A	RELEASED TO MFG	
C	SEE REV. E.O.	
D	SEE REV E.O.	
E	SEE REV E.O.	



9246A
9246P
TAPE ELECTRONICS
PAGE 24
E

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO

MATERIAL LIST

NOTES UNLESS SPECIFIED

DRAWN			
CHECK			
APPD			

SDS

TITLE: DIAGRAM, LOGIC, MAG. TAPE UNIT

MODEL NO: 9246

NEXT ASSY

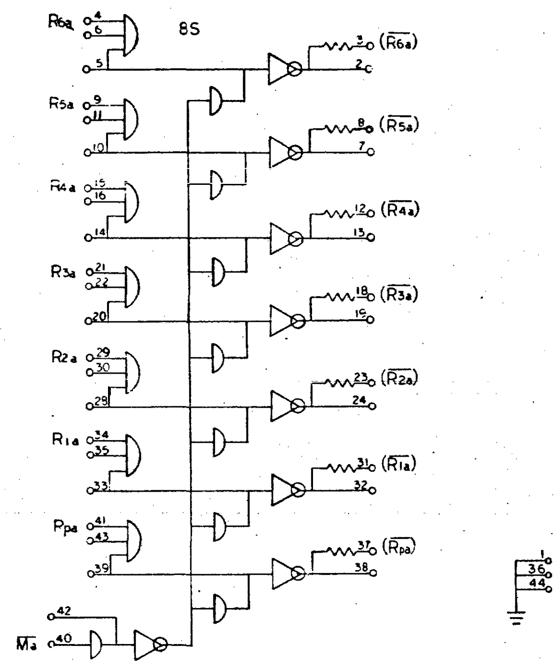
SIZE: D | DWG NO: 103258 | E

SCALE | DO NOT SCALE DRAWING | SHEET

103258 E

From	To	Reason
103258D	103258E	EO 103404H
Wires 8S2 to 8S3 8S7 to 8S8 8S12 to 8S13 8S18 to 8S19 8S23 to 8S24 8S31 to 8S32 8S37 to 8S38	deleted wires and added ground to 8S pins 1 & 36 from pin 44.	See Page 23 Addendum Item 3 for explanation.

REV	DESCRIPTION
A	REL TO MFG
C	SEE REV. E.O.
D	SEE REV E.O.
E	SEE REV E.O.



9246A
9246F
TAPE ELECTRONICS
PAGE 25
E

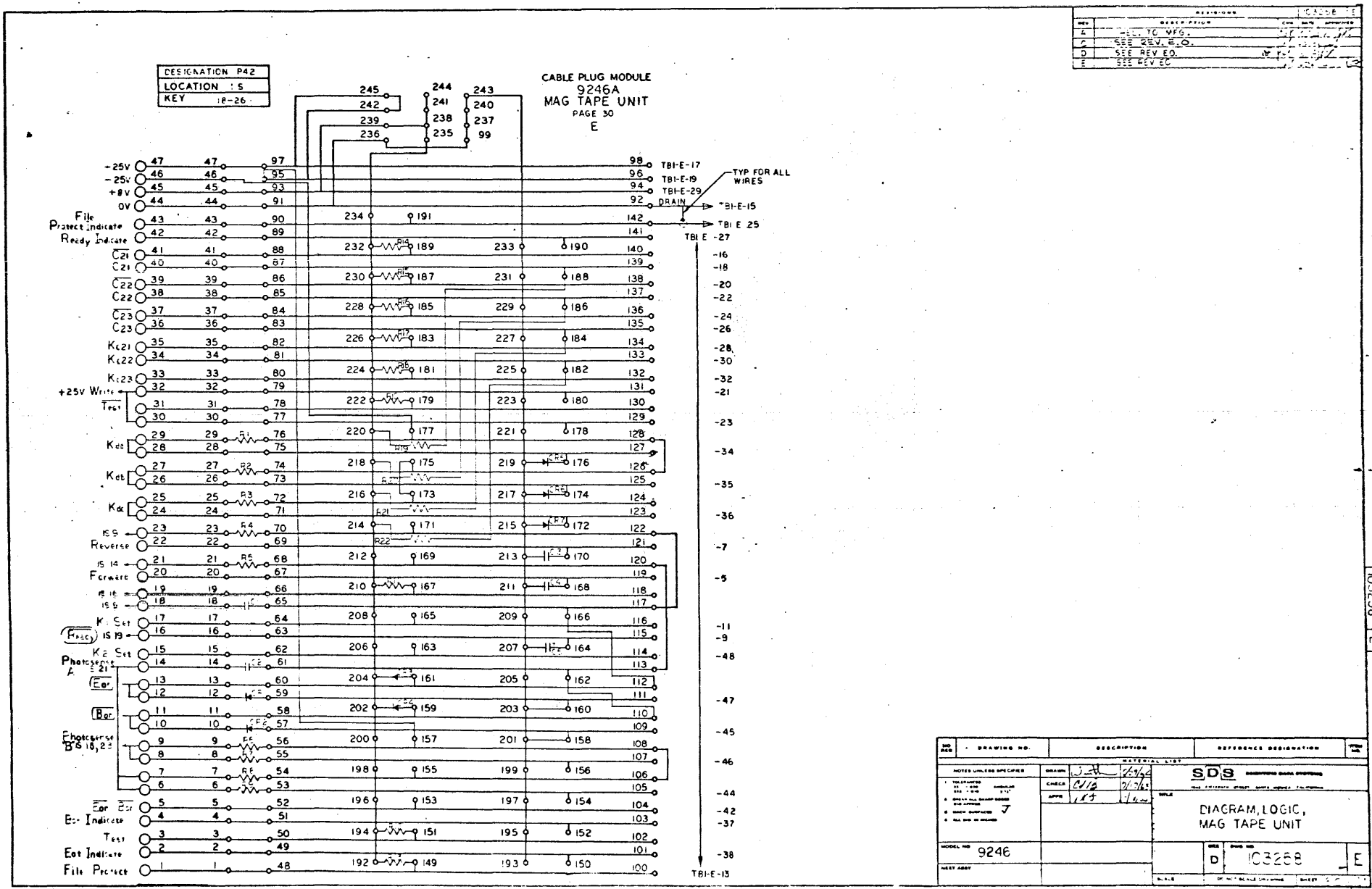
SDS

DIAGRAM, LOGIC,
MAG TAPE UNIT

MODEL NO 9246

D 103258 E

From	To	Reason
103258D	103258E	EO 103140
	Added Resistors R14 thru R22. 470 ohms ±2% SDS Part #100111-471	Additional pull-up on C lines, to reduce noise.



REVISIONS				CAGE
REV	DESCRIPTION	CHK	DATE	APPROVED
A	ADD TO VFG.			
C	SEE REV. E.O.			
D	SEE REV E.O.			
E	SEE REV EC			

DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN		
CHECK		
APPR		

SDS

DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

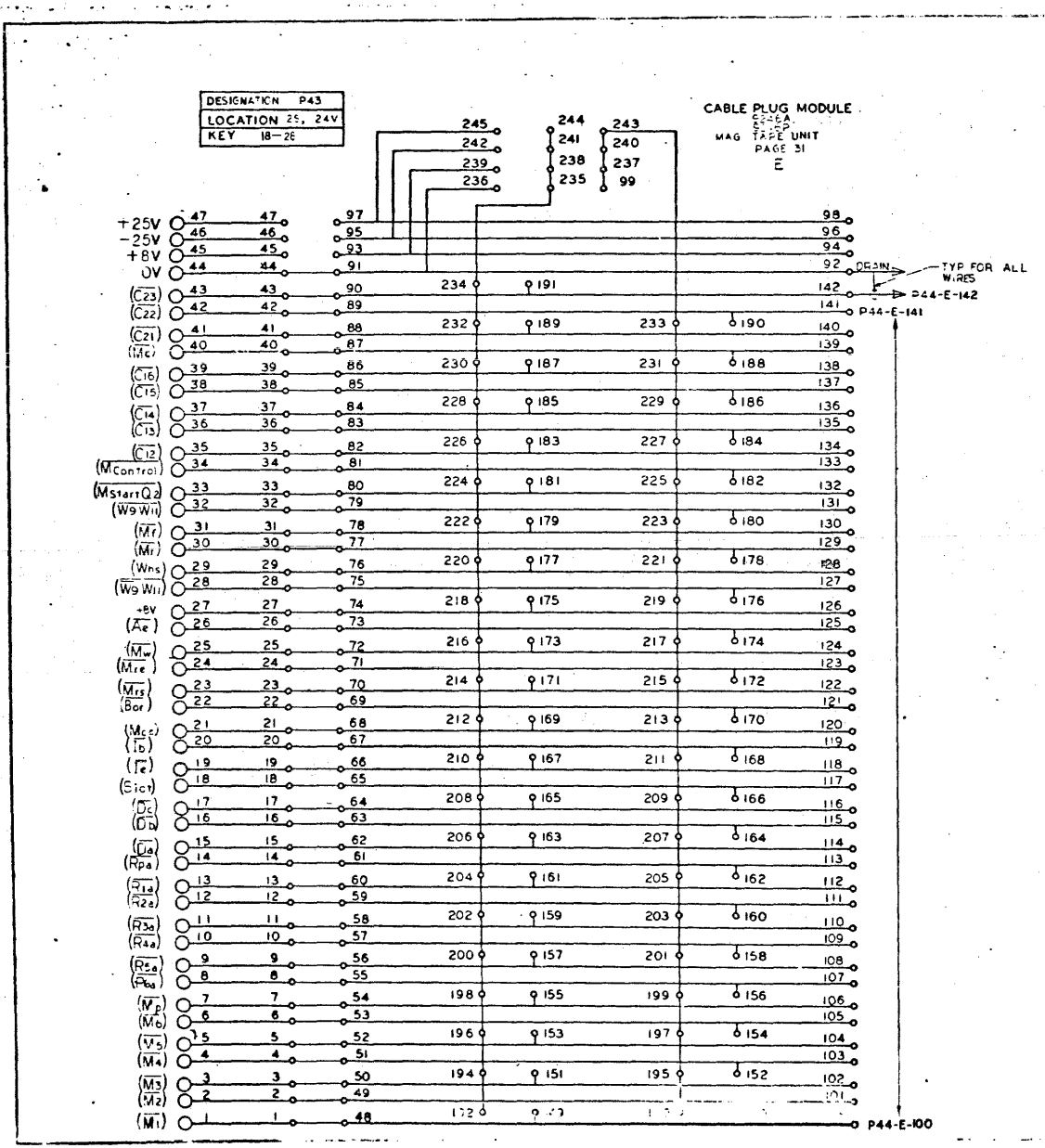
NEXT ASSY

SIZE D | DWG NO 103258 | E

SCALE | SHEET

103258 E

From	To	Reason
Pin 27 of P43 ($\overline{\text{Mad}}$) signal.	Deleted ($\overline{\text{Mad}}$) signal from pin 27 of P43. Add +8v to pin 27 of P43.	Coordinate with EO 103404H. See Page 23 Addendum Item 3 for explanation.



DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION

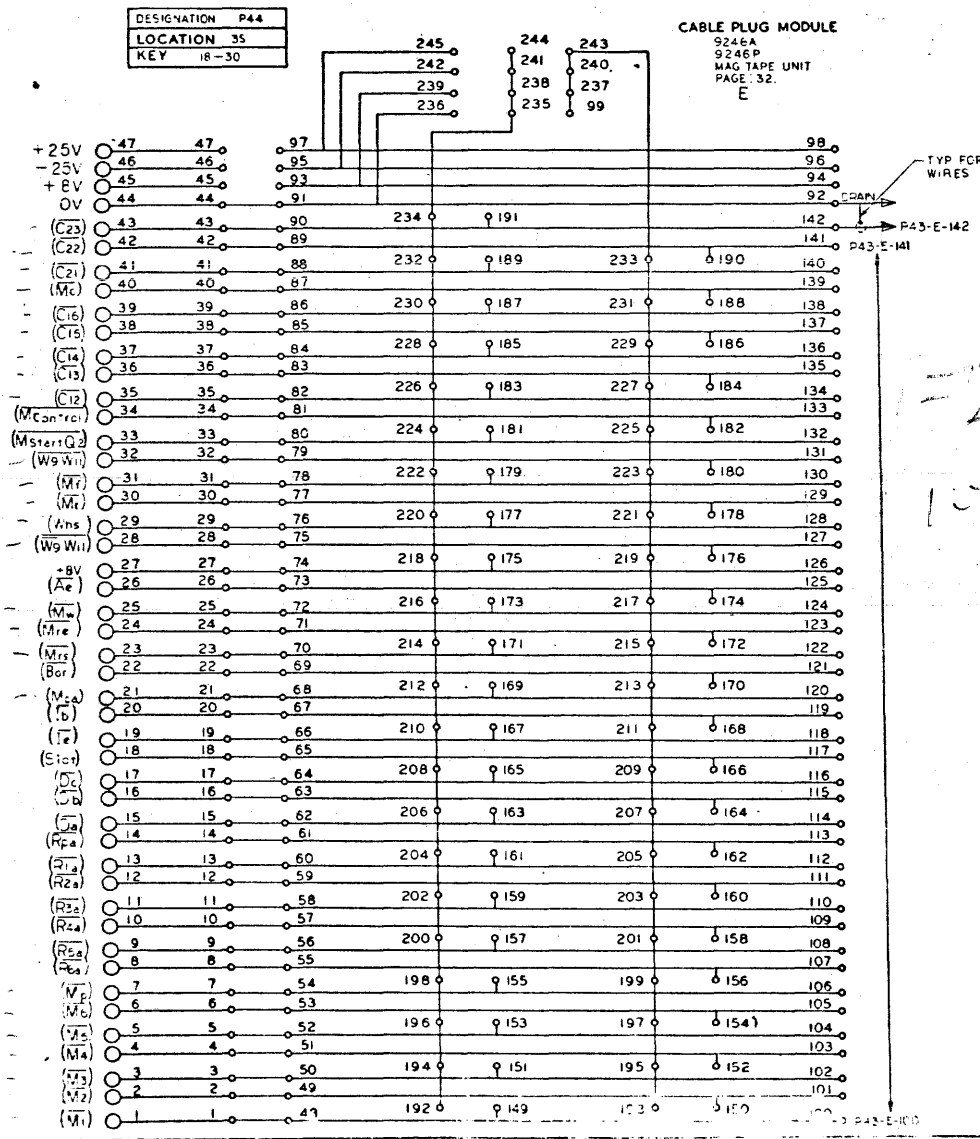
SDS

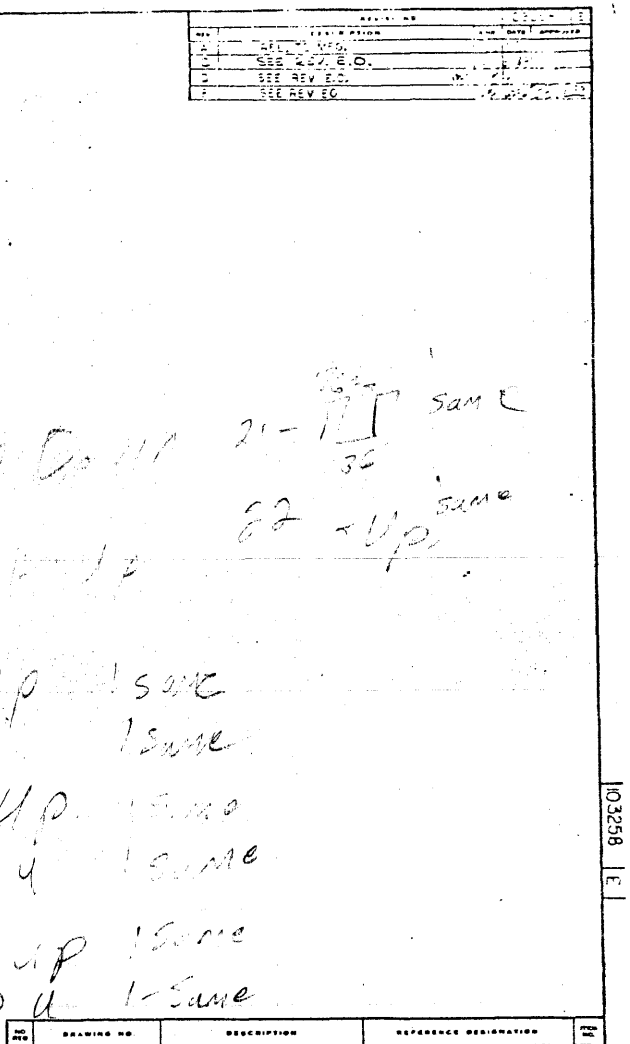
DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

D 103258 E

103258 E





NO. REV	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
		MATERIAL LIST	

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPD

SDS

MODEL NO 9246

TITLE
DIAGRAM, LOGIC,
MAG TAPE UNIT

SIZE D | DWG NO 103258 | E

103258 E

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Q	RX 10	FH 17	OX 13	GC 10	BC 10	1H 12	GC 10	BC 10	IC 12	BC 10	BC 10	GC 11		OX 13	OX 13	OX 13	OX 13	OX 13	HK60	HK60	HK60	HK60	HK60	HK60	HK60
S	P42 ('A' UNITS) P70 ('P' UNITS)	P43 ZK57	P44	ZK 58	HX20 (NOT USED ON 'P' UNITS)	AX 14	AX 14	AX 14			IC 12	IC 12	GC 10	OX 13	OX 13	FC 17	FC 17	AK 52	AK 52	ZK56 NOT USED ON 9246 P				ZK 51 ZK67 ZK68	ZK 51 ZK67 ZK68
Q		FC17	OX11			IC12								OX11	OX11	OX11	OX11	OX11							
S														OX11	OX11										

→ ZK51 MODULES TO BE REPLACED FOR 800 BPI OPERATION.
→ ZK67 FOR "P" UNITS WITH ERASE HEADS.
→ ZK68 FOR "A" OR "P" UNITS WITHOUT ERASE HEADS.

MODULES IDENTIFIED WERE USED IN EARLY 9246A UNITS.

9246A
9246P

TAPE ELECTRONICS
PAGE 33
E

REV	DESCRIPTION	DATE	APPROVED
A	RELEASED TO MFG.		
C	SEE REV. E.O.		
D	SEE REV E.O.		
E	SEE REV EC		

C3258

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION

NOTES UNLESS SPECIFIED

SDS

DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO 9246

DWG NO 103258 E

103258 E

REVISIONS			103258 E
REV	DESCRIPTION	CHK	DATE / APPROVED
A	REL TO MFG		
C	SEE REV. E.O.		
D	SEE REV E.O.		
E	SEE REV EC		

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY.
1	WRITE DRIVER	AK52	2
2	CABLE DRIVER	AX14	3
3	AND/OR BUFFER AMP	BC10	4
4	UNIVERSAL F.F.	FC17	2
5	GATE EXPANDER	GC10	3
6	GATE EXPANDER	GC11	1
7	OPERATIONAL AMP	HX20-0	1
8	READ AMP	HK60	7
9	AND INVERTER	IC12	3
10	ONE SHOT MULT.	OX15	8
11	RELAY DRIVER	RX10	1
12	RESISTOR	ZK68	2
13	TERM. MODULE	ZK56	1
14	TERM. MODULE	ZK57	1
15	TERM. MODULE	ZK58	1
16	AND INVERTER	IH12	1
17	UNIVERSAL F.F.	FH17	1

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY.	SUPPLIER CODE (SEE INDEX)
1	RESISTOR, 3.3K ± 2%	(P42) R1, R2, R3	3	16, 17
2	1 MEGΩ	(P42) R4, R5, R6, R8	4	16, 17
3	1K	(P42) R7, R9	2	16, 17
4	RESISTOR, 8.2K ± 2%	(P42) R10, R11, R12, R13	4	16, 17
5	CAPACITOR, MYLAR .0033μF ± 10%	(P42) C1, C2	2	26, 27, 74
6	CAPACITOR, MYLAR .0068μF ± 10%	(P42) C3, C4	2	26, 27, 74
7	CAPACITOR, TANTALUM .47 μF ± 20% 50V	(P42) C5	1	23.77
8	DIODE, SILICON SWITCHING IN914A	(P42) CR1 THRU CR7	7	4, 12, 13, 14
9	CONNECTOR SOLDERTAIL 47 CONTACT # 7005-47	J(1) THRU J(25) J(15) THRU J(205) -(245), J(255)	47	82
10	RESISTOR, 1.8K ± 2%	(TB2) R1	1	16, 17
11	15K	(TB2) R2	1	
12	180Ω	(TB2) R3	1	
13	390Ω	(TB2) R4, R5, R6	3	
14	RESISTOR, 470Ω ± 2%	(TB2) R7, R8, R9 (P42) R14 THRU R22	12	16, 17
15	DIODE, VOLTAGE REGULATOR IN752	(TB2) VR1	1	2, 12, 13, 14
16	DIODE, VOLTAGE REGULATOR IN964A	(TB2) VR2, VR3, VR4	3	2, 6, 14, 65
17	CAPACITOR, TANTALUM 4.7μF ± 20% 50V	(TB2) C1	1	23, 77
18	TRANSISTOR, SILICON SWITCHING 2N1132	(TB2) Q1	1	3, 10, 11
19	RECEPTACLE, 19 PIN # RSK 19-31SL	J1	1	134
20	PLUG, 19 PIN # SK 19-32S	J2	1	134
21	SWITCH, ROTARY # 102163	S1, S2	2	SDS
22	LAMP, INCANDESCENT #47	DS1 THRU DS5	5	84
23	RESISTOR, WW 10Ω ± 5%	R1 THRU R5	5	59, 100
24	RELAY, DPDT # DOSX-7T * 80-6A/115 VAC	K1 THRU K4	4	78 79
25	SWITCH, TOGGLE DPDT # 83054-SE	S1(S)	1	106
26	CAPACITOR, TANTALUM 4.7μF ± 20% 50V	C1(Q)	1	23, 77

9246A,
MAG TAPE UNIT
PAGE 34
E

103258 E

NO. REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
MATERIAL LIST				

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPD

SDS

TITLE
DIAGRAM, LOGIC
MAG TAPE UNIT

MODEL NO 9246

SIZE D | DWG NO 103258 | REV E

SCALE | DO NOT SCALE DRAWING | SHEET 34 of 35

NOTES UNLESS OTHERWISE SPECIFIED

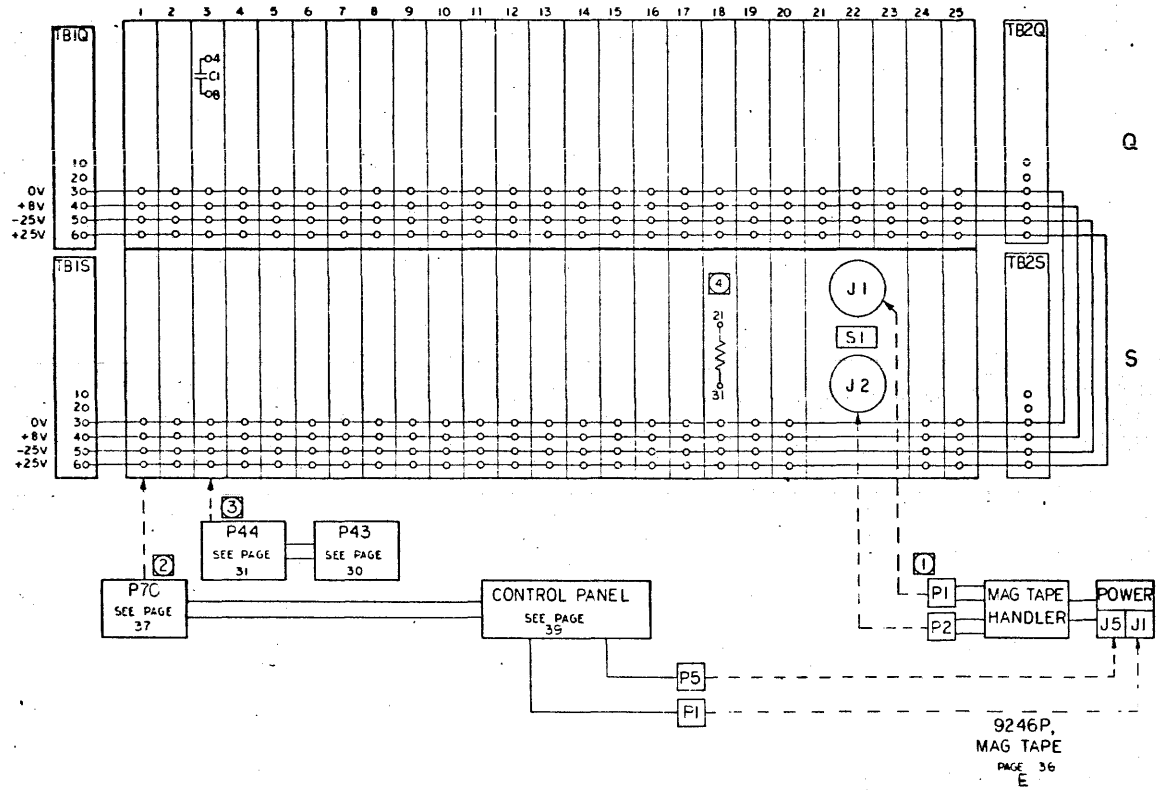
[3] RECEPTACLE J(3S) IS PROVIDED FOR THE P44 TO P43 CABLE. P43 CONNECTS TO RECEPTACLE J(24V) OF THE MODEL 9248 CONTROL UNIT OR TO J(2S) OF A SECOND MODEL 9246.

[4] USED ON 924625F ONLY. RESISTOR 10068C-750. WITH ERASE HEADS

[1] RECEPTACLES J1&J2 ARE PROVIDED FOR CONNECTION TO THE READ & WRITE HEADS OF THE MAG TAPE UNIT.

[2] RECEPTACLE J(1S) IS PROVIDED FOR P7O FROM CONTROL PANEL.

REVISIONS			103258
REV	DESCRIPTION	CHK	DATE APPROVED
C	SEE REV. E.O.		
D	SEE REV E.O.		
	SEE REV E.O.		



NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO
		MATERIAL LIST		

NOTES UNLESS SPECIFIED

SDS

DRAWN

CHECK

APPR

TITLE: DIAGRAM, LOGIC MAG TAPE

MODEL NO 9246

NEXT ASSY

SIZE D

DWG NO 103258 E

SCALE

DO NOT SCALE DRAWING

SHEET

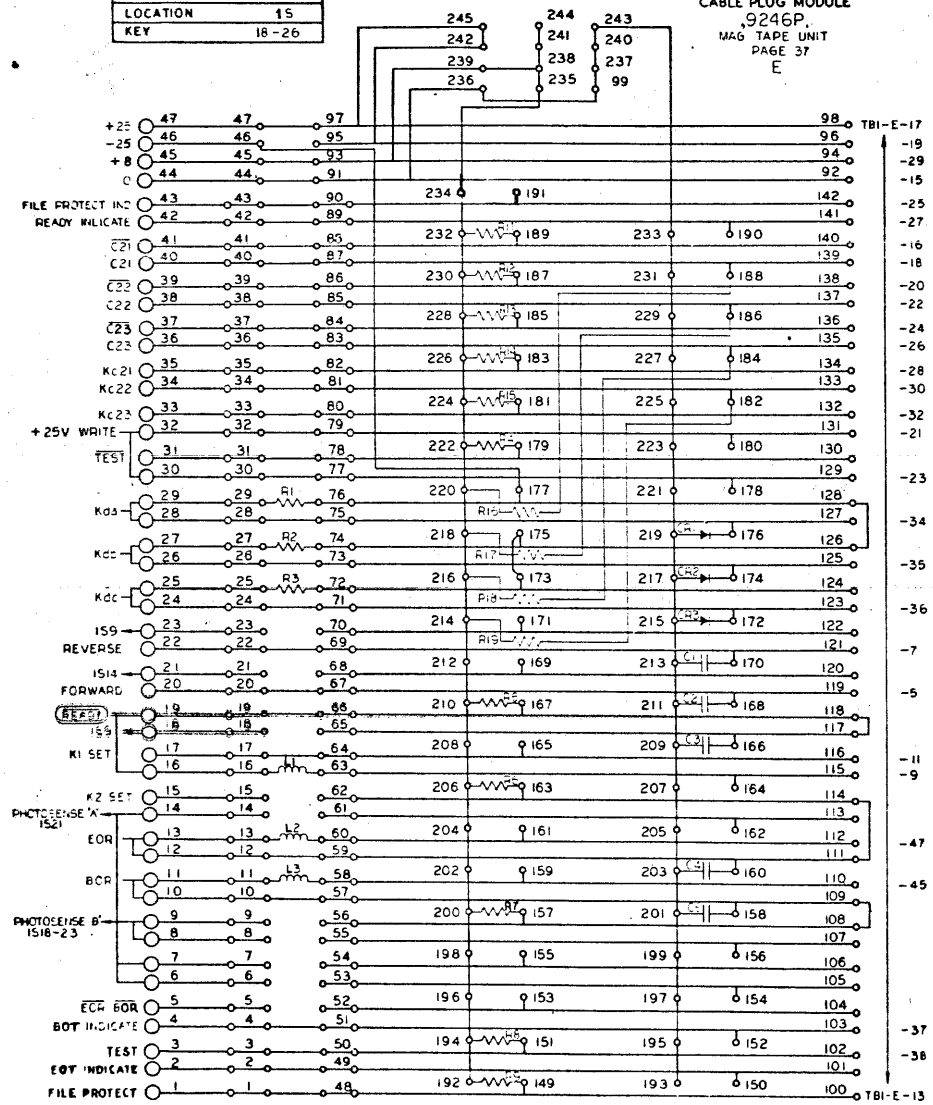
103258 E

Addendum

From	To	Reason
103258D	103258E	EO 103140
	Added Resistors R11 thru R19. 470 ohms ±2% SDS Part #100111-471	Additional pullups on C lines to reduce noise.

DESIGNATION	P70
LOCATION	15
KEY	18-26

CABLE PLUG MODULE
,9246P,
MAG TAPE UNIT
PAGE 37
E



POTTER

REV	DESCRIPTION	CHK	DATE	APPROVED
C	SEE REV E.O.			
D	SEE REV E.O.			
E	SEE REV E.O.			

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION
	MATERIAL LIST	

NOTES UNLESS SPECIFIED

SDS

TITLE
DIAGRAM, LOGIC
MAG TAPE UNIT

MODEL NO 9246

SIZE D | DRAWING NO 103258 | E

SCALE | SHEET 37

103258 E

REVISIONS				03257 F
REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
B	SEE REV E O			
C	SEE REV. E.O.			
D	SEE REV EO			
E	SEE REV EO			
F	SEE REV EO			

PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG
1	[illegible]								
2	[illegible]								
3	[illegible]								
4	[illegible]								
5	[illegible]								
* 6	E								
** 7	[illegible]								
8	[illegible]								
9	[illegible]								
10	[illegible]								
11	E								
12	[illegible]								
13	E								
14	[illegible]								
15	[illegible]								
16	E								
17	[illegible]								
18	[illegible]								
19	[illegible]								
20	E								
21	[illegible]								
22	F								
23	[illegible]								
24	[illegible]								
25	[illegible]								
26	[illegible]								
27	[illegible]								
28	D								
29	E								
30	[illegible]								
31	C								
32	E								
33	E								
34	E								
35	E								
36	E								
37	E								
38	D								
39	F								
40	F								

NOTES:

1. REV LETTERS LISTED INDICATE STATUS OF EACH SHEET OF THIS MULTIPLE SHEET DRAWING.
2. CHECK INDIVIDUAL SHEETS FOR REVISION LETTER AGAINST THIS SHEET BEFORE USING THIS DRAWING.

* NOT USED ON 92481.

** NOT USED ON 92481, 9248.

REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 16B)

9348,
92483,9248,92481,92482
MAG TAPE CONTROL UNIT
PAGE 1
E

129

NO. REQ	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.

MATERIAL LIST

SDS SCIENTIFIC DATA SYSTEMS

TITLE: DIAGRAM, LOGIC
MAG TAPE CONTROL UNIT

MODEL NO. 9248

SIZE D | DWG NO. 103257 | F

SHEET 1 OF 40

Rev	Description
A	REL TO MFG
D	SEE REV E.O.
E	SEE REV E.O.
F	SEE REV E.O.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
K	FH17	OX13	GX13	GC10	FH17	IC10	BH10	FH15	GX14	GH10	GH10	IC12	FH15	FH15	FH17	FC17	GH10	GH10	FH17	FH17	IC10	GC10	GC10	GH11	IK52
V	CX13 (2) (1)	CX14 (2) (1)	CX13 (1)	CX13 (1)	CK52 (4)	DX13	SK59	FC10	IC12	BH11	FC10	IH12	GC10	IH12	BC10	IH12	IC12	AX16	AX16	AX14	AX16	AX16	AX14	P43	P41

9348, 92483, 92482, 92481, 9248
TAPE CONTROL
PAGE 39
E

(1) NOT USED ON 92481. (2) NOT USED ON 9248. (4) CK55 USED 9348, CK56 USED ON 92483.

SDS SCIENTIFIC DATA SYSTEMS

DIAGRAM, LOGIC, MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D DWG NO 103257 F

REV.	DESCRIPTION
A	REL TO MFG
D	SEE REV E.O.
E	SEE REV EO
F	SEE REV E.O.

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY 9248	92481	92482	92483	9348
1	CABLE DRIVER	AX14	2	2	2	2	2
2	AND/OR BUFFER AMP	BC10	3	3	3	3	3
3	AND/OR BUFFER AMP	BH10	1	1	1	1	1
4	OR GATE BUFFER AMP	BH11	1	1	1	1	1
5	CRYSTAL CLOCK GEN	CX13	1	–	2	2	2
6	COUNTER F.F.	FH15	3	3	3	3	3
7	UNIVERSAL F.F.	FH17	5	5	5	5	5
8	GATE EXPANDER	GH11	1	1	1	1	1
9	GATE EXPANDER	GC10	8	8	8	8	8
10	AND/OR INVERT.	IC10	2	2	2	2	2
11	AND INVERTER	IC12	4	4	4	4	4
12	AND INVERTER	IH12	2	2	2	2	2
13	ADDER MODULE	IK52	1	1	1	1	1
14	ONE SHOT MULT.	OX13	4	3	4	4	4
15	CLOCK & GAP DETECTER	SK59	1	1	1	1	1
16	UNIVERSAL F.F.	FC17	1	1	1	1	1
17	ONE SHOT MULT.	OX14	1	1	2	2	2
18	CLOCK GEN	CK52	1	1	1	–	–
19	CLOCK GEN	CK55	–	–	–	–	1
20	CLOCK GEN	CK56	–	–	–	1	–
21	CABLE DRIVER	AX.6	4	4	4	4	4

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY	SUPPLIER CODE (SEE INDEX)
1	RESISTOR, 470Ω ± 2%	(P40)R27 THRU R38	12	16, 17
2	INDUCTOR, MOLDED 220μH±5%	(P40)L1 THRU L26 (P41)L1 THRU L14	40	42, 90, 91
3	DIODE, SILICON SWITCHING IN914A	(P40)CR1 THRU CR11	11	4, 12, 13, 14
4	CONNECTOR, SOLDERTAIL 47 CONTACT #700B-47	J(1K) THRU J(25K) J(1Y) THRU J(25Y)	50	62

ITEM	DESCRIPTION	CABLE LENGTH 11'	20'	30'	40'	DESIGNATION	QTY	SUPPLIER CODE (SEE INDEX)
5	RESISTOR	330Ω ±2%	330Ω ±2%	270Ω ±2%	220Ω ±2%	(P40)R1 THRU R26 (P41)R1 THRU R14	40	16, 17

9348,
92483, 9248, 92481, 92482
MAG TAPE CONTROL UNIT
PAGE 40
E

DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION

MATERIAL LIST

TITLE: DIAGRAM, LOGIC MAG TAPE CONTROL UNIT

MODEL NO 9248

SIZE D | DWG NO 103257 | F

SHEET 40 OF 40

103257 F

REVISIONS			
REV	DESCRIPTION	CHK	DATE
A	REL TO MFG		
B	SEE REV E.O.		
C	SEE REV E.C.		
D	SEE SEE E.O.		
E	SEE REV E.O.		
F	SEE REV E.O.		

NOTE:
THIS DWG APPLIES TO BOTH THE AMPEX (A) & POTTER (P) MAG TAPE UNITS. FOR SIMPLICITY ONLY 9246A AND/OR 9246P DESIGNATIONS ARE SHOWN ON INDIVIDUAL PAGES. 9246A IMPLIES 9246A, 9246IA, 92462A, & 9346A. 9246P IMPLIES 9246P, 9246IP, 92462P & 92463P. THE FOLLOWING CHART INDICATES THE EFFECTIVITY OF INDIVIDUAL PAGES.

PAGE NO.	AMPEX ONLY	POTTER ONLY	BOTH	92462P/3P VARIATIONS
1			X	
2	X			
3			X	
4			X	
5			X	
6			X	
7			X	
8			X	
9			X	
10			X	
11			X	
12			X	
13			X	X
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	
26			X	X
27	X			
28	X			
29	X			
30	X			
31			X	
32			X	
33			X	
34	X			
35	X			
36		X		X
37		X		
38		X		
39		X		

PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG	PAGE	CHG
1	F								
2	D								
3	D								
4	E								
5	E								
6	D								
7	E								
8	E								
9	D								
10	D								
11	D								
12	D								
13	E								
14	D								
15	D								
16	D								
17	C								
18	D								
19	D								
20	D								
21	D								
22	E								
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24	E								
25	E								
26	C								
27	D								
28	C								
29	C								
30	E								
31	E								
32	E								
33	F								
34	F								
35	D								
36	E								
37	E								
38	F								
39	D								

NOTES:
1. REV LETTERS LISTED INDICATE STATUS OF EACH SHEET OF THIS MULTIPLE SHEET DRAWING.
2. CHECK INDIVIDUAL SHEETS FOR REVISION LETTER AGAINST THIS SHEET BEFORE USING THIS DRAWING.

REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 16B)

9246A,9246P
MAG TAPE UNIT
PAGE 1
F

NO. DWG	DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO.
		MATERIAL LIST		

NOTES UNLESS SPECIFIED
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

DRAWN	[illegible]	
CHECK	[illegible]	
APPR	[illegible]	[illegible]

SDS
SCIENTIFIC DATA SYSTEMS
[illegible] SANTA MONICA, CALIFORNIA

TITLE
DIAGRAM, LOGIC
MAG TAPE UNIT

NEXT ASSY	USED ON
9246	

SIZE D | DWG NO. 103258 | F

SCALE | DO NOT SCALE DRAWING | SHEET 1 OF 33

REVISIONS		C3256
REV	DESCRIPTION	APPROVED
A	REL TO MFG	
C	SEE ZSV. E.O.	
D	SEE REV E.O.	
E	SEE REV E.O.	
F	SEE REV E.O.	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
G	RX 10	F-17	OX 13	GC 10	BC 10	1H 12	GC 10	BC 10	IC 12	BC 10	BC 10	GC 11		OX 13	OX 13	OX 13	OX 13	OX 13	HK60	HK60	HK60	HK60	HK60	HK60	HK60
S	P42 (A' UNITS P1C (P' UNITS	P43 ZK57	P44	ZK58	4X20 C (NOT USED ON P UNITS	AX15	AX16	AX16			IC 12	IC 12	GC 10	OX 13	OX 13	FC 17	FC 17	AK52	AK52	ZK56				ZK 51	ZK 51

Q

S

9246A
9246P

TAPE ELECTRONICS
PAGE 33
F

NO REQ	DRAWING NO	DESCRIPTION	REFERENCE DESIGNATION	ITEM NO

NOTES UNLESS SPECIFIED

MATERIAL LIST

DRAWN
CHECK
APPR

SDS

TITLE: DIAGRAM, LOGIC, MAG TAPE UNIT

MODEL NO: 9246

NEXT ASSY

SIZE: D | DWG NO: 103258 | F

SCALE | DO NOT SCALE DRAWING | SHEET 33 OF 39

103258

REV	DESCRIPTION	CHK	DATE	APPROVED
A	REL TO MFG			
C	SEE REV. E.O.			
D	SEE REV E.O.			
E	SEE REV EO			
F	SEE REV E.O.			

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY.
1	WRITE DRIVER	AK52	2
2	CABLE DRIVER	AX16	3
3	AND/OR BUFFER AMP	BC10	4
4	UNIVERSAL F.F.	FC17	2
5	GATE EXPANDER	GC10	3
6	GATE EXPANDER	GC11	1
7	OPERATIONAL AMP	HX20-0	1
8	READ AMP	HK60	7
9	AND INVERTER	IC12	3
10	ONE SHOT MULT.	OX13	8
11	RELAY DRIVER	RX10	1
12	RESISTOR	ZK51	2
13	TERM. MODULE	ZK56	1
14	TERM. MODULE	ZK57	1
15	TERM. MODULE	ZK58	1
16	AND INVERTER	IH12	1
17	UNIVERSAL F.F.	FH17	1

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY.	SUPPLIER CODE (SEE INDEX)
1	RESISTOR, 3.3K ± 2%	(P42) R1, R2, R3	3	16, 17
2	1 MEGΩ	(P42) R4, R5, R6, R8	4	16, 17
3	1K	(P42) R7, R9	2	16, 17
4	RESISTOR, 8.2K ± 2%	(P42) R10, R11, R12, R13	4	16, 17
5	CAPACITOR, MYLAR .0033μF ± 10%	(P42) C1, C2	2	26, 27, 74
6	CAPACITOR, MYLAR .0068μF ± 10%	(P42) C3, C4	2	26, 27, 74
7	CAPACITOR, TANTALUM .47 μF ± 20% 50V	(P42) C5	1	23, 77
8	DIODE, SILICON SWITCHING 1N914A	(P42) CR1 THRU CR7	7	4, 12, 13, 14
9	CONNECTOR, SOLDERTAIL 47 CONTACT # 7008-47	J(1Q) THRU J(25Q) J(1S) THRU J(20S) J(24S), J(25S)	47	82
10	RESISTOR, 1.8K ± 2%	(TB2) R1	1	16, 17
11	15K	(TB2) R2	1	
12	180Ω	(TB2) R3	1	
13	390Ω	(TB2) R4, R5, R6	3	
14	RESISTOR, 470Ω ± 2%	(TB2) R7, R8, R9 (P42) R14 THRU R22	12	16, 17
15	DIODE, VOLTAGE REGULATOR 1N752	(TB2) VR1	1	2, 12, 13, 14
16	DIODE, VOLTAGE REGULATOR 1N964A	(TB2) VR2, VR3, VR4	3	2, 6, 14, 65
17	CAPACITOR, TANTALUM 4.7μF ± 20%, 50V	(TB2) C1	1	23, 77
18	TRANSISTOR, SILICON SWITCHING 2N1132	(TB2) Q1	1	3, 10, 11
19	RECEPTACLE, 19 PIN # RSK 19-31SL	J1	1	134
20	PLUG, 19 PIN # SK19-32S	J2	1	134
21	SWITCH, ROTARY # 102163	S1, S2	2	SDS
22	LAMP, INCANDESCENT # 47	DS1 THRU DS5	5	84
23	RESISTOR, WW 10Ω ± 5%	R1 THRU R5	5	99, 100
24	RELAY, DPDT # DOSX-7T # 80-6A/115 VAC	K1 THRU K4	4	78 79
25	SWITCH, TOGGLE DPDT # 83054-SE	S1(S)	1	106
26	CAPACITOR, TANTALUM 4.7μF ± 20% 50V	C1(Q)	1	23, 77

9246A,
MAG TAPE UNIT
PAGE 34
F

SDS SCIENTIFIC DATA SYSTEMS			
TITLE	DIAGRAM, LOGIC MAG TAPE UNIT		
MODEL NO 9246	D	103258	F

103258 F

REV.	DESCRIPTION
C	SEE REV. E.O.
D	SEE REV. E.O.
E	SEE REV. E.O.
F	SEE REV. E.O.

MODULE LIST

ITEM	DESCRIPTION	MODEL	QTY
1	WRITE DRIVER	AK52	2
2	CABLE DRIVER	AX16	3
3	AND/OR BUFFER AMP	BC10	4
4	UNIVERSAL F.F.	FC17	2
5	GATE EXPANDER	GC10	3
6	GATE EXPANDER	GC11	1
7	READ AMP	HK60	7
8	AND INVERTER	IC12	3
9	ONE SHOT MULT.	OX13	8
10	RELAY DRIVER	RX10	1
11	RESISTOR	ZKS1	2
* 12	TERM. MODULE	ZKS6	1
13	TERM. MODULE	ZKS7	1
14	TERM. MODULE	ZKS8	1
15	AND INVERTER	IH12	1
16	UNIVERSAL F.F.	FH17	1

* NOT USED ON 92463P

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY.	SUPPLIER'S CODE
1	RESISTOR, 3.3 K ± 2%	(P70) R1, R2, R3	3	16, 17
2	RESISTOR, [illegible].0 K ± 2%	(P70) R6, R7	2	16, 17
3	RESISTOR, 8.2 K ± 2%	(P70) R4, R[illegible], R9	3	16, 17
4	CAPACITOR, MYLAR .00[illegible] μF ± 10%	(P70) C1, C2	2	26, 27, 74
5	CAPACITOR, MYLAR .00[illegible] μF ± 10%	(P70) C4, C5	2	26, 27, 74
6	DIODE, SILICON SWITCHING 1N914A	(P70) CR1 THRU CR3	3	4, 12, 13, 14
7	INDUCTOR, MOLDED 100.0 μH ± 5%	(P70) L2, L3	2	42, 90, 91
8	RECEPTACLE, 19 PIN #[illegible] 19-31SL	J1	1	134
9	PLUG, 19 PIN #SK19-32S	J2	1	134
10	SWITCH, ROTARY #102163	S101, S102	2	SDS
11	RESISTOR, WW 10 Ω ± 5%	R1 THRU R5	5	99, 100
12	RELAY, DPDT #D03X-7T #[illegible]/115 VAC	K1, K3	2	78 79
13	SWITCH, TOGGLE DPDT #53054-SE	S1(S)	1	106
14	CAPACITOR, TANTALUM 4.7 μF ± 20% 50V	C1 (Q)	1	23, 77
15	CONNECTOR, SOLDERTAIL 47 CONTACT #7003-47	J(1Q) THRU J(25Q) J(1S) THRU J(20S) J(24S), J(25S)	47	82
16	LAMP, MINIATURE #328	DS101 THRU DS105	20	83, 84
17	INDUCTOR, MOLDED 330 μH ± 5%	(P70) L1	1	42, 90, 91
18	RESISTOR, 560 Ω ± 2%	(P70) R5	1	16, 17
19	CAPACITOR, MYLAR, .0010 μF ± 10%	(P70) C3	1	26, 27, 74
20	RESISTOR, 470 Ω ± 2%	(P70) R10 THRU R15	9	16, 17

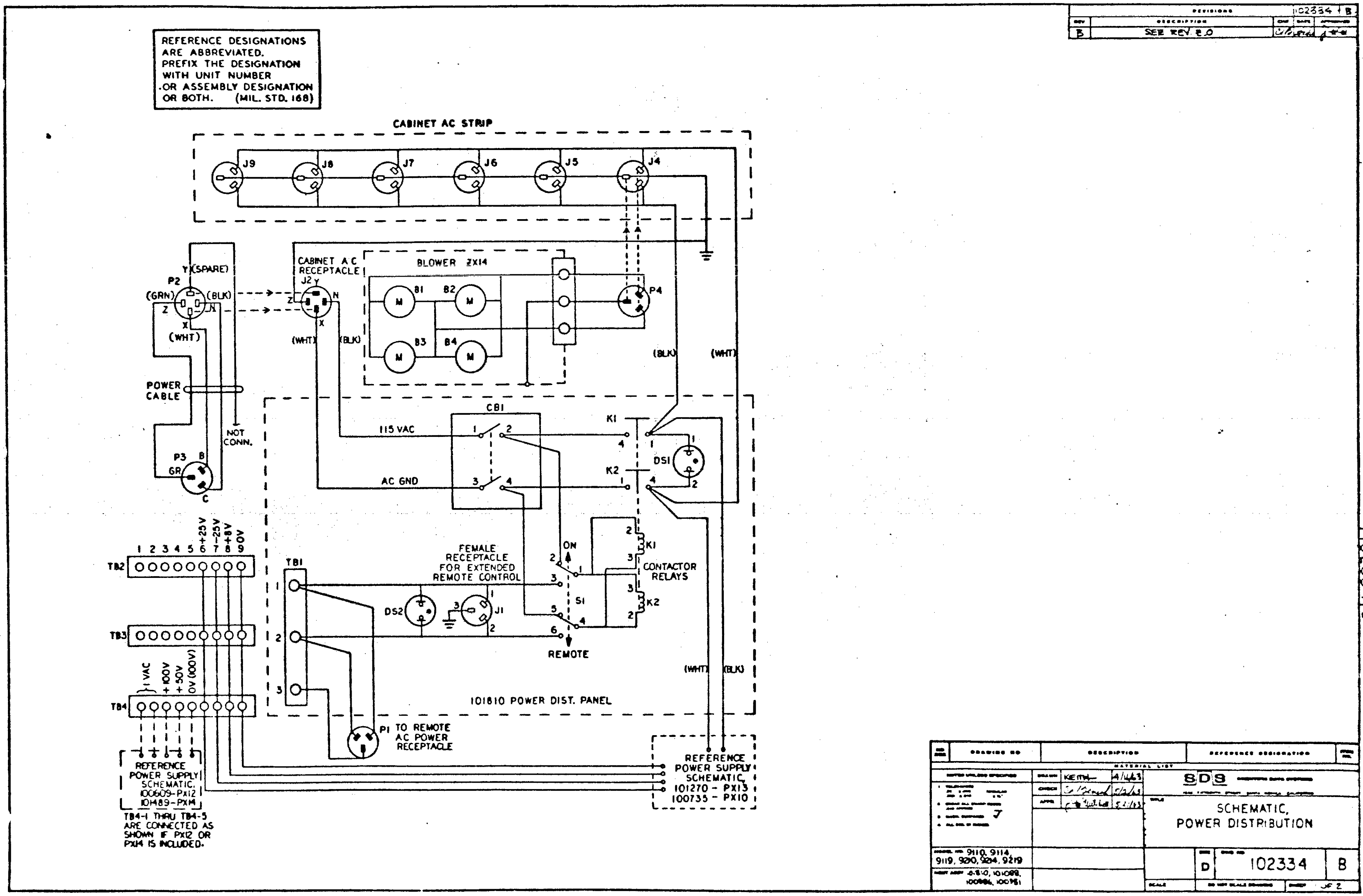
9246P
MAG TAPE UNIT
PAGE 38
F

MATERIAL LIST

DIAGRAM, LOGIC,
MAG TAPE UNIT

D 103258 F

SHEET 38 OF 39


REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH. (MIL. STD. 168)
CABINET AC STRIP
J9
J8
J7
J6
J5
J4
CABINET A C RECEPTACLE J2
BLOWER 2X14
B1
B2
B3
B4
P4
P2
Y (SPARE)
(GRN)
(BLK)
(WHT)
POWER CABLE
NOT CONN.
P3
CB1
115 VAC
AC GND
K1
K2
DS1
ON
REMOTE
S1
CONTACTOR RELAYS
FEMALE RECEPTACLE FOR EXTENDED REMOTE CONTROL
DS2
J1
TB1
TB2
TB3
TB4
+25V
-25V
+8V
0V
1 VAC
+100V
+50V
0V (100V)
101810 POWER DIST. PANEL
P1 TO REMOTE AC POWER RECEPTACLE
REFERENCE POWER SUPPLY SCHEMATIC 101270 - PX13 100735 - PX10
REFERENCE POWER SUPPLY SCHEMATIC. 100609-PX12 101489-PX14
TB4-1 THRU TB4-5 ARE CONNECTED AS SHOWN IF PX12 OR PX14 IS INCLUDED.
SEE REV. E.O
SDS
SCHEMATIC, POWER DISTRIBUTION
D
102334
B
9110, 9114, 9119, 9120, 9124, 9219
102334 B

102334 B

SEE SHT ONE

REPLACEMENT PARTS LIST

ITEM	DESCRIPTION	DESIGNATION	QTY	SUPPLIER CODE (SEE INDEX)
1	CORD, A.C. #16/3 SPT-3 CORD WITH #PA-3 PLUG	P1, P4	2	101
2	CONNECTOR, 5 WIRE FEMALE #3523	P2	1	102
3	CONNECTOR, 3 WIRE MALE #3331	P3	1	102
4	RECEPTACLE, 3 WIRE FEMALE #5256	J1	1	102
5	CONNECTOR, 5 WIRE MALE #3525	J2	1	102
6	WIREMOLD, A.C. #G-20GB306	J4 THRU J9	1	103
7	LAMP, NEON #249-7841H-1437	DS1, DS2	2	104
8	RELAY, SPST #CNAS-13A/115 VAC	K1, K2	2	79
9	CIRCUIT BREAKER, DOUBLE POLE #2XAM1516-35-250 VAC 60 CYCLE CURVE 2	CB1	1	105
10	SWITCH, TOGGLE DPDT	S1	1	106

102334 B

SDS

SCHEMATIC
POWER DISTRIBUTION

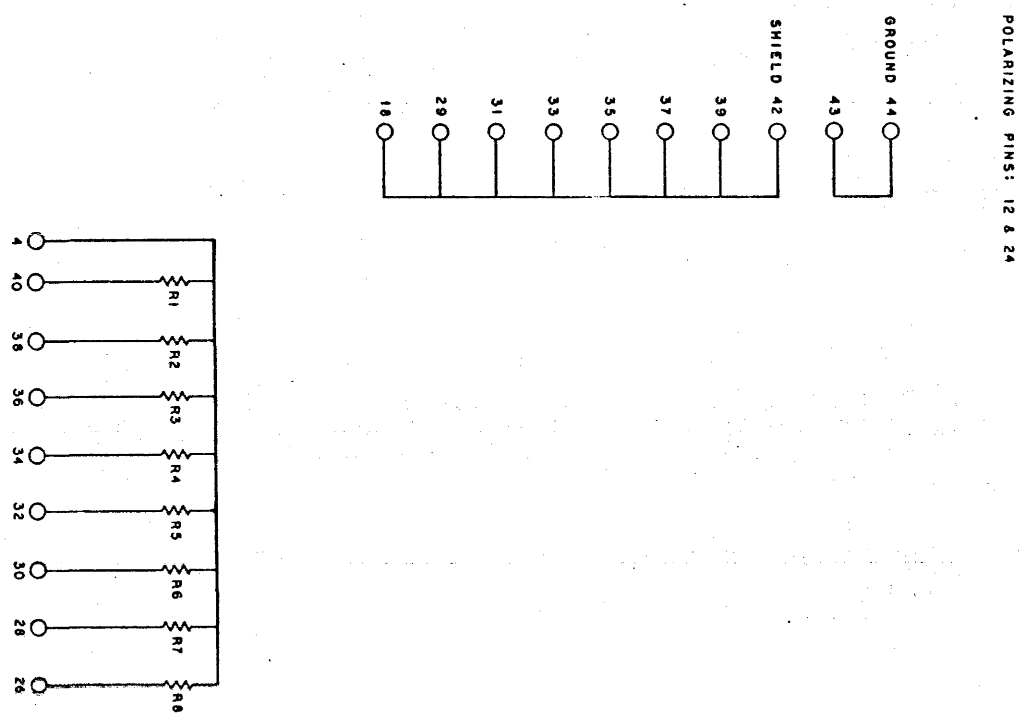
MODEL NO. 9110, 9114, 9119, 9210, 9214, 9219

NEXT ASSY 101E10, 101C88, 100EE5, 100991

D 102334 B

SHEET 2 OF 2

REV	DESCRIPTION		
A	RELEASED TO MFG		



101714 A

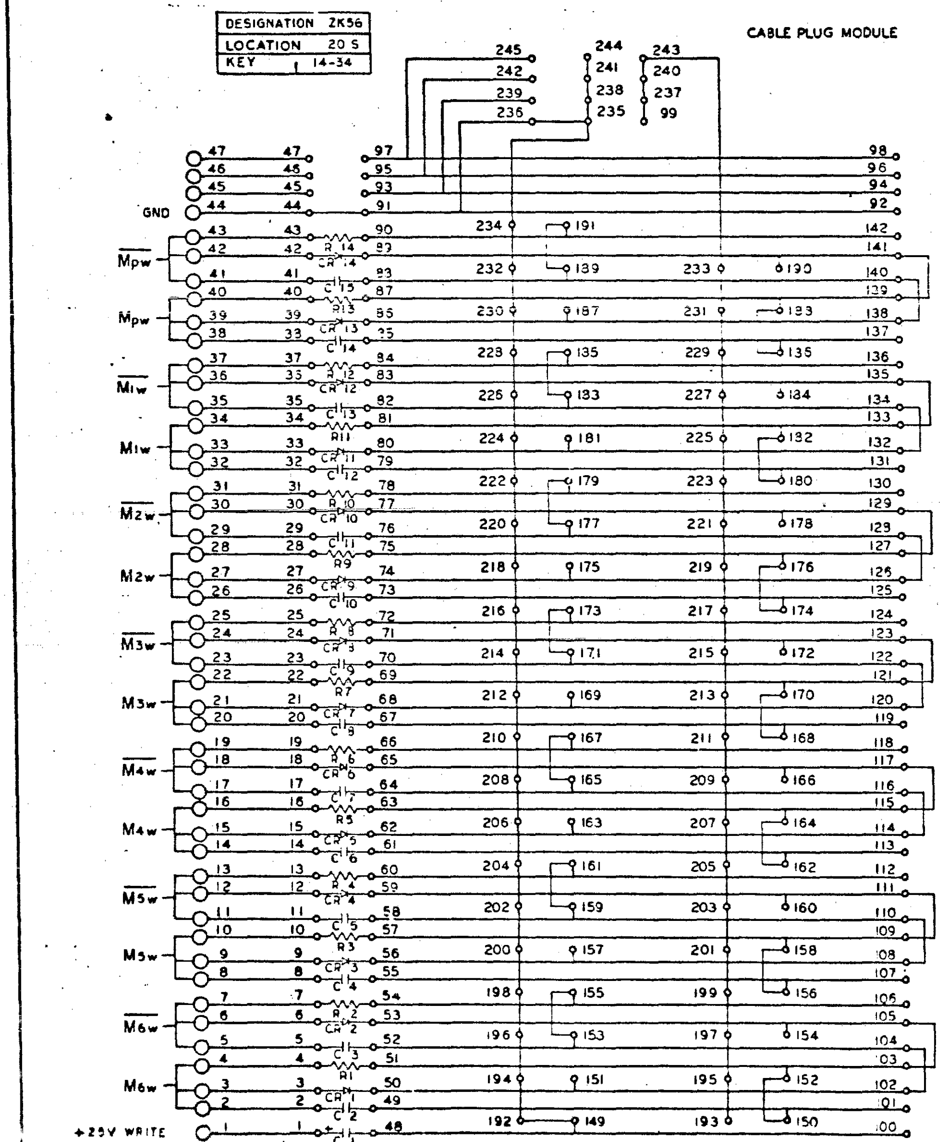
113

SDS SCIENTIFIC DATA SYSTEMS

SCHEMATIC
RESISTOR MODULE

MODEL NO.	SIZE	DWG NO.	REV
ZK51	D	101714	A

REV	DESCRIPTION
A	RELEASED TO MFG



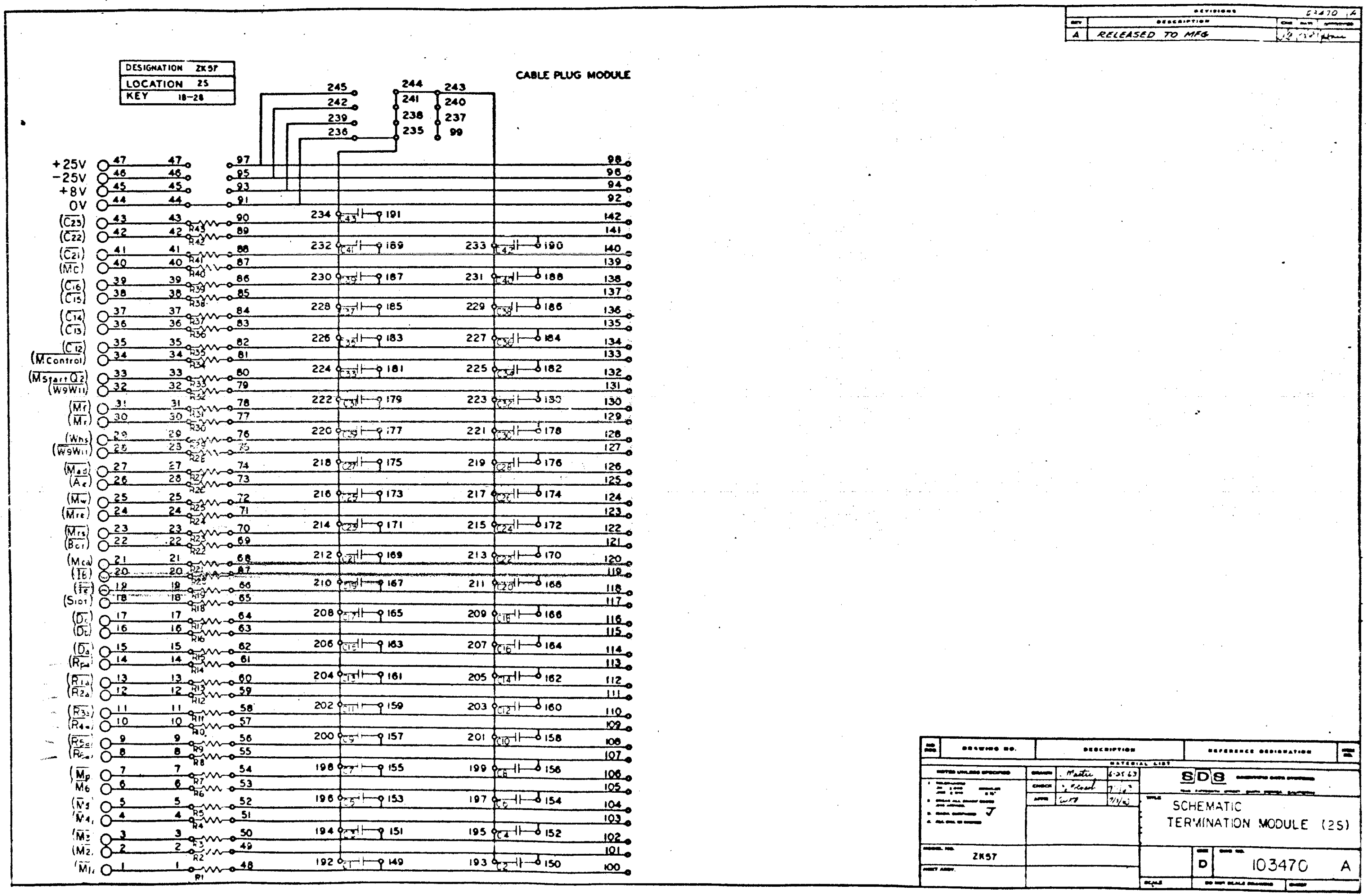
SDS

SCHEMATIC,
TERMINATION MODULE (20 S)

ZK 56

D 103015 A

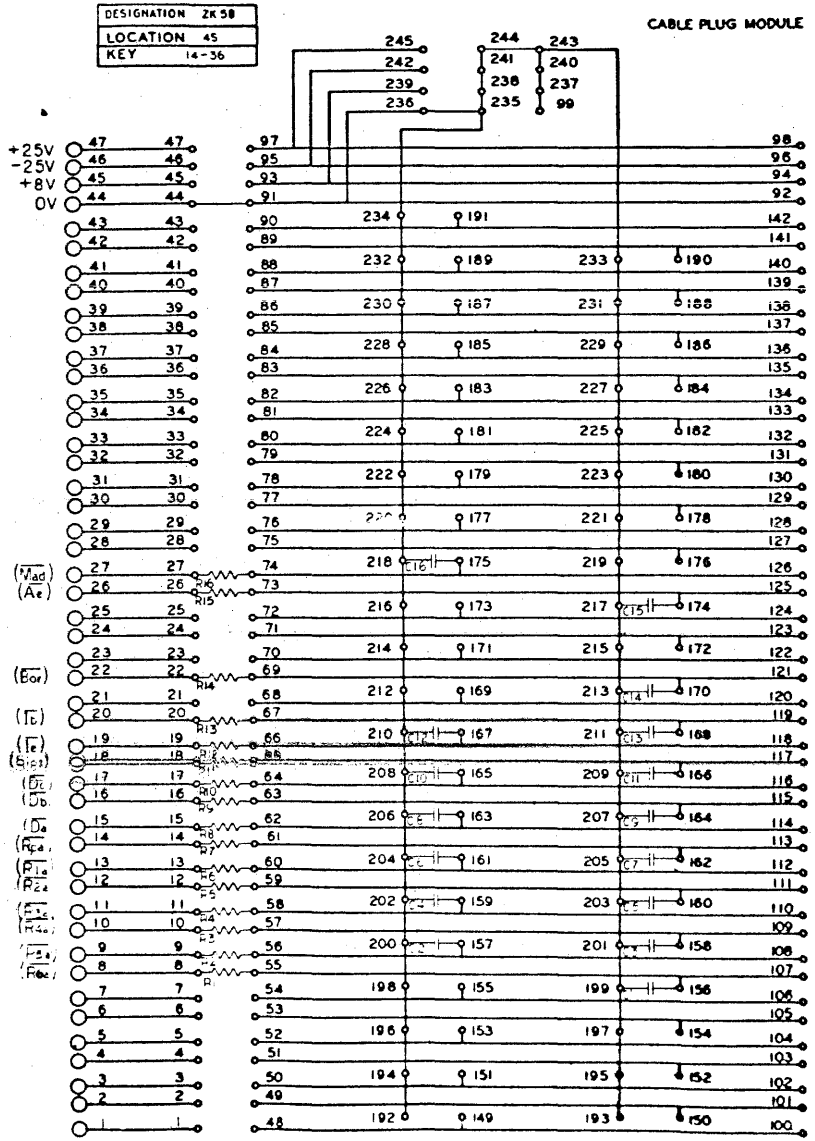
SDS-E-264



CABLE PLUG MODULE
DESIGNATION ZK57
LOCATION 2S
KEY 18-28
RELEASED TO MFG
SCHEMATIC
TERMINATION MODULE (2S)
ZK57
SDS
D
103470
A

DESIGNATION	ZK58
LOCATION	45
KEY	14-36

CABLE PLUG MODULE



REVISIONS				103473 A
REV	DESCRIPTION	CHG	DATE	APPROVED
A	RELEASED TO MFG			

DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
MATERIAL LIST		

NOTES UNLESS SPECIFIED

DRAWN
CHECK
APPR

SDS

SCHEMATIC,
TERMINATION MODULE (4S)

MODEL NO. ZK58

SIZE D | DWG NO. 103473 | REV A

SCALE | DO NOT SCALE DRAWING | SHEET

MATERIAL LIST

DWG. TITLE
ASSY, P.W.
TERMINATION MODULE (4S)

SCIENTIFIC DATA SYSTEMS

ML

DWG. NO. 103474 REV A

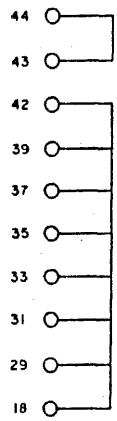
MOD # ZK58 DATE 6/27 SHEET 2 OF 2

ITEM	DWG. TITLE	DWG. NO.	NO. REQ	REMARKS OR CKT. DESIG.
1	Board, Printed Wiring	101652-036	1	
2	Handle, Circuit Card	100016	1	
3	Rivet, Drive	100278-003	2	
4	Strip, Marker	100197	1	
5	Contact, Conn, Upper	100097	23	
6	Contact, Conn, Lower	100098	24	
7	Resistor, 1/2 watt	100111-330	16	(8-55) (9-56) (10-57) (11-58)
				(12-59) (13-60) (14-61) (15-62)
				(16-63) (17-64) (18-65) (19-66)
				(20-67) (22-69) (26-73) (27-74)
8	Capacitor	100308-332	16	(156-199) (157-200) (158-201)
				(159-202) (160-203) (161-204)
				(162-205) (163-206) (164-207)
				(165-208) (166-209) (167-210)
				(168-211) (170-213) (174-217)
				(175-218)
9	Tubing, Teflon	100274-022	3 in	
10	Wire, Solid Bare	100042-024	3 in	(44-91) (243-244) (236-235)

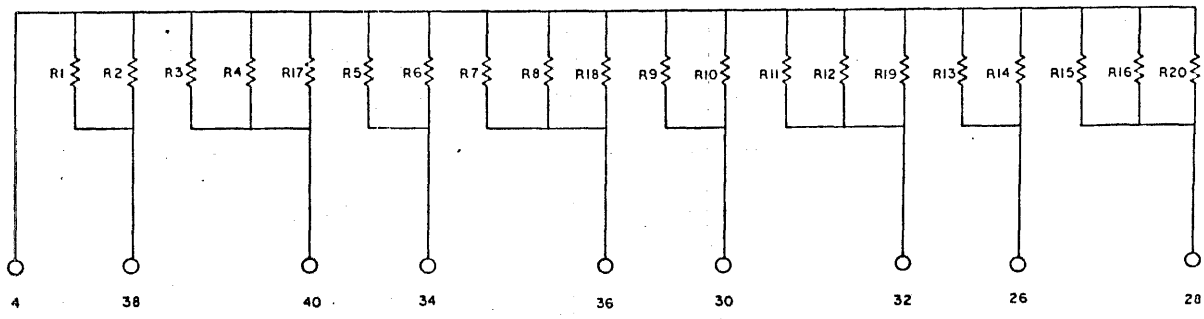
SDS-E-106 7/70

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	RELEASED TO MFG.	11-10-32	

POLARIZING PINS 12 & 24



NOTES:
1. R17 THRU R20 DO NOT APPEAR IN ZK68.



DRAWING NO.	DESCRIPTION	REFERENCE DESIGNATION
	MATERIAL LIST	

NOTES UNLESS SPECIFIED
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

DRAWN
CHECKED
APPR.

SCHEMATIC, RESISTOR MODULE

MODEL NO.	DWG NO.	SIZE
ZK67 ZK68	114062	D

NEXT ASSY 114064 114067

SCALE — DO NOT SCALE DRAWING — SHEET

Code No.	Name	Address
1	Motorola Semiconductor	5005 E. McDowell Rd. Phoenix, Arizona
2	Same as 1	
3	Fairchild Semiconductor	545 Whisman Road Mountain View, Calif.
4	Same as 3	
5	General Electric Co. Semiconductor Products Div.	Electronics Park Syracuse 1, N. Y.
6	Same as 5	
7	RCA Semiconductor Div.	Somerville, N. Y.
8	Silicon Transistor Corp.	East Gate Blvd. Garden City, N. Y.
9	Same as 8	
10	Hughes Semiconductor Div.	500 Superior Ave. Newport Beach, Calif.
11	Texas Instruments, Inc.	P.O. Box 5012 Dallas, Texas
12	Same as 11	
13	Pacific Semiconductors, Inc.	1420 Aviation Blvd. Lawndale, Calif.
14	Continental Device Corp.	12515 Chadron Ave. Hawthorn, Calif.
15	Sperry Semiconductor Div.	380 Main Ave. Norwalk, Conn.
16	Corning Glass Works	550 High St. Bradford, Penn.
17	Welwyn International, Inc.	3535 Edgecliff Terr. Cleveland 11, Ohio
18	Same as 11	
19	Arco Electronics, Inc.	Community Drive Great Neck, N. Y.
20	Sangamo Electric Co.	1207 N. 11th. St. Springfield, Ill.
21	Micamold Electric Mfg. Co.	65 Gouverneur St. Newark, N. J.
22	Kemet Company	11901 Madison Ave. Cleveland 1, Ohio
23	Sprague Electric Co.	481 Marshall St. North Adams, Mass.
24	U.S. Semiconductor Products	3540 W. Osborn R. Pheonix, Ariz.
25	General Electric Co. Capacitor Dept.	Hudson Falls, N. Y.
26	Same as 23	
27	Same as 23	
28	Raytheon Semiconductor Co.	350 Ellis St. Mountain View, Calif.
29	National Semiconductor Corp.	P.O. Box 443 Danbury, Conn.
30	General Instrument Corp.	65 Gouverneur St. Newark, N. J.
31	Sylvania Electric Products Semiconductor Div.	100 Sylvan Road Woburn, Mass.
32	Western Semiconductors	2200 S. Fairview St. Santa Ana, Calif.
33	Computer Diode Corp.	250 Garibaldi Ave. Lodi, New Jersey
34	Tungsol Electric Inc.	1 Summer Ave. Newark, N. J.
35	Bourns, Inc.	1200 Columbia Ave. Riverside, Calif.
36	International Resistance Co.	401 N. Broad St. Philadelphia, Penn.
37	General Resistance, Inc.	430 Southern Blvd. New York 55, N. Y.
38	Same as 23	
39	Technitrol Engineering Co.	1952 E. Allegheny Ave. Philadelphia, Penn.
40	Same as 39	
41	Delevan Electronics Corp.	77 Olean Road East Aurora, N. Y.
42	Same as 41	
43	Delco Radio Division	700 E. Firmin St. Kokomo, Indiana
44	Atohm Electronics	7648 San Fernando Rd. Sun Valley, Calif.
45	Dale Electronics, Inc.	P.O. Box 609 Columbus, Nebraska
46	Tepro Electric Co.	5 St. Paul Street Rochester 4, N. Y.
47	Sage Electronics Corp.	Country Club Road East Rochester, N. Y.
48	Littelfuse Inc.	1865 Miner St. Des Plaines, Illinois
49	Bussman Mfg. Co.	University at Jefferson St. Louis, Missouri
50	Sola Electric Company	1717 Busse Road Elk Grove Village, Ill.
51	Cinch Jones Division	1026 S. Homan Ave. Chicago, Ill.
52	Same as 51	
53	Ohmite Mfg. Co.	3635 Howard St. Skokie, Illinois
54	Cutler-Hammer, Inc.	321 N. 12th. Street Milwaukee, Wisc.
55	Centralab	900A E. Keefe Ave. Milwaukee, Wisc.
56	Eldema Corporation	1805 Belcroft Ave. El Monte, Calif.
57	Same as 23	
58	Same as 25	
59	Same as 20	
60	Same as 51	

Code No.	Name	Address
61	Same as 54	
62	Amelco, Inc.	341 Moffet Blvd. Mountain View, Calif.
63	Transitron Electronic Corp.	168-182 Albion St. Wakefield, Mass.
64	Same as 10	
65	Same as 30	
66	American Semiconductor Corp.	3940 N. Kilpatrick Chicago, Illinois
67	Hoffman Electronics Corp. Semiconductor Division	Box 471 1001 N. Arden El Monte, Calif.
68	Delta Semiconductors, Inc.	835 Production Place Newport Beach, Calif.
69	Pulse Engineering, Inc.	560 Robert Ave. Santa Clara, Calif.
70	Nytronics, Inc.	550 Springfield Ave. Berkeley Heights, N. J.
71	Alladin Electronics, Inc.	Nashville 10, Tenn.
72	Ferroxcube Corp. of America	E. Bridge Street Saugerties, New York
73	Electra Mfg. Co.	4051 Broadway Kansas City, Mo.
74	Same as 25	
75	Same as 24	
76	Same as 24	
77	Same as 24	
78	Same as 53	
79	Allied Control Co, Inc.	2 East 2nd Ave. New York, 21, N.Y.
80	Same as 23	
81	Same as 20	
82	Elco Corporation	Willow Grove, Penn.
83	Chicago Miniature Lamp Works	4433 Ravenswood Ave. Chicago 40, Illinois
84	General Electric Co. Miniature Lamp Dept.	Nela Park Cleveland 12, Ohio
85	Same as 34	
86	Automatic Electric Sales Corp.	North Lake, Illinois
87	Same as 24	
88	Same as 47	
89	Same as 45	
90	J.W. Miller Co.	5917 S. Main St. Los Angeles 3, Calif.
91	Stanwyck Winding Co.	137 Walsh Ave. Newburgh, N. Y.
92	Same as 36	
93	Same as 73	
94	Same as 23	
95	Philco Corp.	Lansdale Division Lansdale, Penn.
96	Amperex Electronic Corp.	230 Duffy Avenue Hicksville, N. Y.
97	Siliconix, Inc.	1140 W. Evelyn Ave. Sunnyvale, Calif.
98	Continental Connector Corp.	34-63 56th Street Woodside 77, N. Y.
99	Same as 23	
100	Same as 53	
101	Royal Electric Corp.	95 Grand Ave. Pawtucket, R.I.
102	Harvey Hubbell, Inc.	Bridgeport, Conn.
103	The Wiremold Co.	Hartford 10, Conn.
104	Dialight Corp.	60 Stewart Ave. Brooklyn 37, N. Y.
105	Heinemann Electric Co.	2636 Brunswick Pike Trenton 2, N. J.
106	Arrow-Hart and Hegeman Electric	103 Hawthorne St. Hartford, Conn.
107	Allen Bradley Co.	136 W. Greenfield Ave. Milwaukee 4, Wisc.
108	General Electric Co. Meter Division	1 River Road Schenectady 5, N.Y.
109	Same as 70	
110	Winchester Electronics, Inc.	Willard Road Norwalk, Conn.
111	AMP, Inc.	Harrisburg, Penn.
112	Grayhill, Inc.	569 Hillgrove Ave. LaGrange, Illinois
113	Controls Co. of America	9555 Soreng Ave. Schiller Park, Illinois
114	Amphenol-Borg Amphenol Connector Division	1830 S. 54th Ave. Schiller Park, Illinois
115	Same as 36	
116	Same as 36	
117	Same as 73	
118	Same as 73	
119	Same as 11	
120	Thermalloy Co.	4417 N. Central Expressway Dallas 5, Texas
121	Astro Dynamics, Inc.	Second Avenue Northwest Industrial Park Burlington, Mass.
122	Tor Mfg. Co.	1533 E. Walnut St. Pasadena, Calif.
123	Wakefield Engineering, Inc.	9 Broadway Wakefield, Mass.
124	Same as 35	
125	Same as 36	
126	Same as 37	
127	Erie Resistor Corp.	644 W. 12th Street Erie, Penn.
128	Same as 55	

Code No.	Name	Address
129	Same as 37	
130	C.P. Clare and Co.	3101 Pratt Blvd. Chicago 45, Illinois
131	The Adams and Westlake Co.	N. Michigan Street Elkhart, Indiana
132	Not Assigned	
133	Not Assigned	
134	Cannon Electric Co.	3208 Humboldt St. Los Angeles 31, Calif.
135	Indiana General Corp.	Crows Mill Road Keasbey, New Jersey
136	Same as 23	
137	Electro-Cube, Inc.	805 Fairview Ave. South Pasadena, Calif.
138	Monitor Products, Inc.	815 Fremont Ave. South Pasadena, Calif.
139	Rotron Mfg. Co.	Woodstock, N. Y.
140	The Digitran Co.	660 S. Arroyo Parkway Pasadena, Calif.
141	Minneapolis-Honeywell Semiconductor Products Div.	2747 4th Ave. South Minneapolis, Minn.
142	Babcock Relays Div.	1645 Babcock Ave. Costa Mesa, Calif.
143	Simco Company	19th and Walnut St. Lansdale, Penn.
144	IMC Magnetics Corp.	570 Main Street Westbury, N. Y.
145	Malco Mfg. Co.	4025 W. Lake St. Chicago 24, Ill.
146	Drake Mfg. Co.	4626 N. Olcott Ave. Chicago 31, Ill.
147	Same as 25	
148	Same as 23	
149	Same as 20	
150	Westinghouse Electric Co.	Semiconductor Dept. Youngwood, Penn.
151	Stancor Electronics, Inc.	3501 W. Addison St. Chicago 18, Ill.
152	Ammon Instruments, Inc.	345 Kelley St. Manchester, N.H.
153	Raytheon Company Industrial Components Div.	465 Center Street Quincy, Mass.
154	Same as 108	
155	Same as 55	
156	Capitol Machine and Switch Co.	36 Balmforth Street Danburry, Conn.
157	Same as 82	
158	Same as 51	
159	Quam-Nichols Co.	Marquette Rd. at Prairie Chicago 37, Illinois

Code No.	Name	Address
160	Magtrol, Inc.	241 Seneca Street Buffalo 4, New York
161	West Coast Electrical Mfg. Co.	233 W. 116th Place Los Angeles 61, Calif.
162	Minneapolis-Honeywell Micro Switch Division	Chicago and Spring Sts. Freeport, Illinois
163	Eldema Corp.	1805 Belcroft Ave. El Monte, Calif.
164	Potter and Brumfield Div. of Amer. Machine and Foundry	1200 E. Broadway Princeton, Indiana
165	Electric Indicator Company	Camp Avenue Stamford, Conn.
166	General Instrument Co. Magne Head Division	3216 W. El Segundo Hawthorne, Calif.
167	Contract Tool Corp.	3820 Hoke Ave. Culver City, Calif.
168	Milton Ross Metals Co.	250 Jacksonville Rd. Hatboro, Penn.
169	Robinson Company	3636-5 W. 139th St. Hawthorne, Calif.
170	ADC Products, Inc.	6411 Cambridge St. Minneapolis 26, Minn.
171	Same as 170	
172	Same as 170	
173	Same as 53	
174	Bendix Corporation Scintilla Division	Sidney, New York
175	Ward Leonard Electric Co.	75 South Street Mount Vernon, N.Y.
176	Clarostat Mfg. Co. Inc.	Washington Street Dover, New Hampshire
177	J.B.T. Instruments, Inc.	133 Hamilton Street New Haven 8, Conn.
178	Herman H. Smith, Inc.	2336 Nostrand Ave. Brooklyn 10, N.Y.
179	International Instruments	88 Marsh Road Orange, Conn.
180	U.S. Engineering Co. Div. of Litton Ind.	13536 Saticoy St. Van Nuys, Calif.
181	Campbell Industries	Dover, New Hampshire
182	California Resistor Corp.	1631 Colorado Ave. Santa Monica, Calif.
183	Kelvin Electric Co.	5907 Noble Ave. Van Nuys, Calif.
184	Angstrohm Precision Co.	7341 Greenbush Ave. N. Hollywood, Calif.
185	Mepco Inc.	35 Abbet Ave. Morristown, N. J.
186	Wood Electric Corp.	244 Broad Street Lynn, Mass.
187	Pendar, Inc.	509 Sherman Ave. Coeur D'Alene, Idaho

Code No.	Name	Address
188	Aerovox Corp.	740 Belleville Ave. New Bedford, Mass.
189	Cornell-Dubilier	50 Paris Street Newark 1, N. J.
190	Augat Inc.	33 Perry Ave. Attleboro, Mass.
191	Dearborn Labs	Box 3431 Orlando, Florida
192	TRW Capacitor, Div.	112 W. 1st Street Ogallala, Nebraska
193	Electron Products	1962 Walker Ave. Monrovia, Calif.
194	Mallory & Co. Inc.	3029 E. Washington St. Indianapolis, Ind.
195	Ampex Corp.	401 Broadway Redwood City, Calif.
196	Astron Division	255 Grant Avenue E. Newark, N. J.
197	Elgin Controls Division	2435 N. Naomi St. Burbank, Calif.
198	Superior Switch Co.	1001 W. Broad St. Richmond, Va.
199	Rheem Electronics	5250 W. El Segundo Hawthorne, Calif.
200	Union Carbide Cons. Prod. (Eveready)	270 Park Ave. N.Y., New York
201	Mossman, Inc. Donald P.	Box 265 Brewster, N.Y.
202	Dickson Elect. Corp.	310 S. Wells Fargo Scottsdale, Arizona
203	Master Specialties	15020 Figueroa Gardena, Calif.
204	Alco Elect. Prod. Inc.	3 Wolcott Ave. Lawrence, Mass.
205	Southern Electronics	150 W. Cypress Ave. Burbank, Calif.
206	San Fernando Elec. Mfg. Co.	1509 First Street San Fernando, Calif.
207	Leecraft Mfg. Co. Inc.	21-16 44th Rd. Long Island City, N.Y.
208	Oak Mfg. Co.	Crystal Lake, Illinois
209	National Cash Register Co.	S. Main at K St. Dayton, Ohio
210	Sylvania, Lighting Prod. Division	60 Boston St. Salem, Mass.
211	Westinghouse Lamp Div.	MacArthur Blvd. Bloomfield, N. J.
212	National Radio Inc.	37 Washington St. Melrose, Mass.
213	James Electronics Inc.	4050 N. Rockwell, Chicago, Ill.

Code No.	Name	Address
214	Vemaline Products Co.	Box 1, Franklin Lakes, New Jersey
215	United Shoe Mach. Corp.	Federal at High St. Boston 7, Mass.
216	Atlas Tack Corp.	South Pleasant St. Fairhaven, Mass.
217	Cambridge Thermionic Corp.	445 Concord Ave. Cambridge 38, Mass.
218	Hartwell Corp.	9035 Venice Blvd. Los Angeles 34, Calif.
219	Kulka Electric	633 S. Fulton Ave. Mt. Vernon, N.Y.
220	Atlee Corp.	2 Lowell Ave. Winchester, Mass.
221	Birnbach Radio	145 Hudson St. New York 13, N.Y.
222	Southco Fastener Co.	233 Industrial Hwy. Lester, Penn.
223	Standard Pressed Steel Co. (SPS)	Box 1084, Jenkintown, Penn.
224	Penn Engineering & Mfg. Corp.	Box 311 Doylestown, Penn.
225	National Transistor, Div. ITT	500 Broadway Lawrence, Mass.
226	Lerco Div., Microdot	220 Pasadena Ave. South Pasadena, Calif.
227	Burndy	Norwalk, Connecticut
228	Electro-Mec Inst. Co.	47-51 33rd St. Long Island City, N.Y.
229	Ohio Nut & Bolt	36 First Ave. Berea, Ohio
230	Riedon Div. On Mark Eng.	11728 Vost St. No. Hollywood, Calif.
231	Rubbercraft Corp. of Calif.	1800 W. 220th St. Torrance, Calif.
232	Masterite Industries	835 W. Olive St. Inglewood, Calif.
233	Weckesser Co. Inc.	5701 Northwest Hwy. Chicago 46, Illinois
234	Key Resistor Corp.	321 W. Redondo Beach Blvd. Gardena, Calif.
235	Alpha Wire Corp.	180 Varick St. New York 14, N.Y.
236	Nylon Molding Corp.	141 South Ave. Garwood, New Jersey
237	Dakota Engineering Co.	4315 Sepulveda Culver City, Calif.
238	PCA Electronics	16799 Schoenborn St. Sepulveda, Calif.
239	ILS Div., Merriam	10978 Madison Ave. Cleveland, Ohio

Code No.	Name	Address
240	Philadelphia Insulated Wire Co.	333 New Albany Rd. Moorestown, N.J.
241	Amerock Corp.	4000 Auburn St. Rockford, Illinois
242	Superior Electric Co.	383 Middle St. Bristol, Conn.
243	Reon	155 Sawmill River Rd. Yonkers, N.Y.
244	Hardwick Hindle	Huntington, Indiana
245	Driver, W.B.	1875 MacCarter Hwy. Newark 4, N.J.
246	Driver-Harris	202 Middlesex St. Harrison, N.J.
247	Pacific Electricord	747 W. Redondo Beach Blvd., Gardena, Calif.
248	Standard Wire & Cable	3434 Overland Ave. Los Angeles 34, Calif.
249	Illumitronic Eng.	680 E. Taylor Ave. Sunnyvale, Calif.
250	Belden Mfg. Co.	415 S. Kilpatrick Ave. Chicago 44, Ill.
251	Arnold Eng.	Box G, Marengo, Ill.
252	Carstedt Research	2501 E. 68th St. Long Beach 5, Calif.
253	Maloney Elect. Co.	5390 Bircher Ave. St. Louis, Mo.
254	Gerrard, A. J.	400 E. Touhy Ave. Des Plaines, Ill.
255	Ducomunn	4890 S. Alameda Los Angeles, Calif.
256	Stevens Paper Mills Inc.	Box 347 Windsor, Conn.
257	Schweitzer, P. J.	Lee, Massachusetts
258	Cottrell Paper	10 Purchase St. Fall River, Mass.
259	American Pamcor	181 Hillcrest Havertown, Pa.
260	Johns - Manville	220 E. 40th St. New York 16, N. Y.
261	Minnesota Mining & Mfg. Co. (3M)	2501 Hudson Ave. St. Paul, Minn.
262	Permacel Mfg. Co.	U. S. Highway 1 New Brunswick, N.J.
263	Technical Tape Co.	240 North Ave. New Rochelle, N. Y.
264	Anaconda	605 Third Ave. New York, N. Y.
265	Essex Wire	1601 Wall St. Fort Wayne, Indiana
266	Kennecott Wire	Phillipsdale 16, R. I.
267	Phelps - Dodge Copper	4400 New Haven Ave. Fort Wayne, Ind.

Code No.	Name	Address
268	Westinghouse, Specialty Transf. Div.	Greenville, Pa.
269	International Recitifer	233 Kansas St. El Segundo, Calif.
270	Chicago Printed String	2322 Logan Blvd. Chicago 47, Ill.
271	Varflex	514 W. Court St. Rome, N.Y.
272	Natvar Corp.	211 Randolph Ave. Woodbridge, N.J.
273	General Electric Wire & Cable Div.	1285 Boston Ave. Bridgeport, Conn.
274	Standard Record Mfg.	17 N. San Gabriel Blvd. Pasadena, Calif.
275	Sun Chemical Corp. Electro-Tech Prod. Div.	Nutley, N.J.
276	Camlock Fastener Corp.	22 Spring Valley Rd. Paramus, N.J.
277	Thomas & Betts	36 Butler St. Elizabeth, N.J.
278	Unistrut	933 W. Washington Blvd Chicago, Ill.
279	Victor Wire & Cable	618 Main St. Warwick, R.I.
280	Thermatics Corp.	P.O. Drawer 505 Elm City, N. Carolina
281	Reeves-Hoffman	145 Cherry St. Carlisle, Penn.
282	Bulova Electronics	61-20 Woodside Ave. Woodside 77, N.Y.
283	Palmer Inst. Co.	1017 Mission St. Pasadena, Calif.
284	Filtair, Inc.	706 Forrest St. Charlottesville, Va.
285	Signetics	680 W. Maude Ave. Sunnyvale, Calif.
286	American Super-Temp. Wires, Inc.	W. Canal St. Winooski, Vermont
287	Jan Hardware Mfg. Co.	38-03 Queens Blvd. Long Island City 1, N.Y.
288	International Business Mach. Co.	112 E. Post St. White Plains, N.Y.
289	Hoskins Mfg.	4445 Lawton Ave. Detroit 8, Michigan
290	Zippertubing Corp.	13000 S. Broadway Los Angeles 61, Calif.
291	CPR International	555 N. Alaska, Torrance, Calif.
292	Western Insulated Wire	2425 E. 30th Los Angeles 58, Calif.
293	Minneapolis Honeywell, Meter Div.	Grenier Field Manchester, N.H.

Code No.	Name	Address
294	Ives, H. B.	New Haven, Conn.
295	Plastiglide Mfg. Co.	1757 Stanford St. Santa Monica, Calif.
296	Croven Ltd.	500 Beech St. Box 1420, Whitby, Ontario, Canada
297	Darnell Corp.	12000 S. Woodruff Ave. Downey, Calif.
298	Tracor	Austin, Texas
299	Barden Corp.	200 Park Avenue Danbury, Conn.
300	Kooltronic Fan Co.	Box 504 Princeton, N. J.
301	Waldes-Kohinoor	47-16 Austel Place Long Island City, New York
302	PIC Design Corp.	477 Atlantic Ave. E. Rockaway, N. Y.
303	Shakeproof Division Illinois Tool	St. Charles Road Elgin, Illinois
304	Elastic Stop Nut Co. (ESNA)	2330 Vauxhall Road Union, N. J.
305	National Lock Co.	42 Hermon Street Newark 5, N. J.
306	Groov-Pin Corp.	1125 Hendricks Cswy. Ridgefield, N. J.
307	Harrison Labs. Div.	45 Industrial Road Berkeley Heights, New Jersey
308	Boston Gear Works	14 Hayward Street Quincy 71, Mass.
309	Emerson & Cumming	869 Washington Street Canton, Mass.
310	ARBCO Electronics	7820 Gloria Van Nuys, Calif.
311	Sealectro	139 Hoyt St. Mamaroneck, New York
312	General Sensor, Inc.	Box 231 Athens, Texas

Code No.	Name	Address
313	Thermal-Systems, Inc.	15100 S. Broadway Gardena, Calif.
314	Tinnerman Products, Inc.	Box 6688 Cleveland 1, Ohio
315	Brush Beryllium Co.	17876 St. Clair Ave. Cleveland, Ohio
316	National Beryllia Corp.	1st & Haskell Avenues Haskell, N. J.
317	Frenchtown Porcelain	Frenchtown, N. J.
318	Lenz Electric Mfg. Co.	1751 N. Western Ave. Chicago 47, Ill.
319	Space Products Co.	2235 E. Artesia St. Long Beach, Calif.
320	Sterling Inst. Div.	76 E. 2nd Street Mineola, N. Y.
321	Atlantic India Rubber Co.	571 W. Polk St. Chicago 7, Illinois
322	Waldom Electric	4627 W. 53rd Street Chicago, Illinois
323	Mystik Tape Inc. Div.	1700 Winnetka Ave. Northfield, Ill.
324	Amphenol-Borg, Controls Div.	120 S. Main Janesville, Wisc.
325	General Electric, Transformer Div.	1 River Road Schenectady, N. Y.
326	GC Electronics Div.	400 S. Wyman St. Rockford, Ill.
327	United Carr Fastener Div.	459 Watertown St. Newtonville, Mass.
328	North American Elect. Div. IRC	71 Linden St. West Lynn, Mass.
329	Carol Cable Div., Crescent Wire	249 Roosevelt Ave. Pawtucket, R. I.
330	Plastoid Corp.	42-61 24th Street Long Island City, N.Y.
331	G-V Controls Inc.	101 Okner Parkway Livingston, N. J.
332	Teletype Corp.	5555 Touhy Avenue Skokie, Illinois
333	Parker Seal	10567 Jefferson Blvd. Culver City, Calif.