

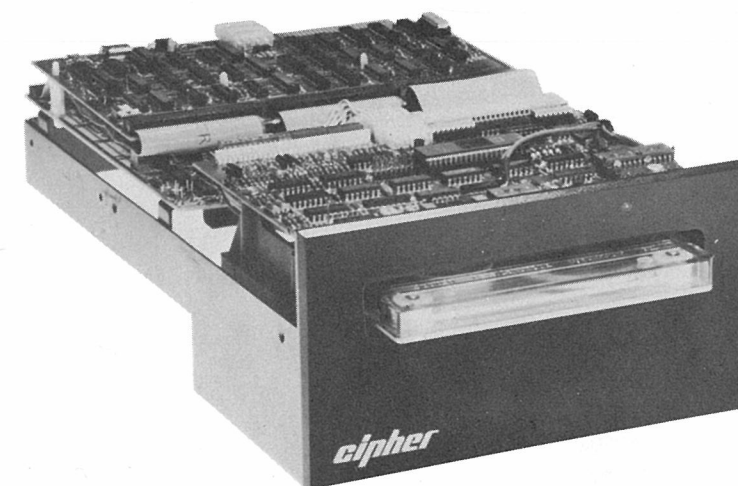
***cipher***<sup>®</sup>  
*data products, inc.*

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**Quarterback**<sup>™</sup>  
**1/4-Inch Cartridge Tape Drive**  
**Engineering Drawing Package**

---

Volume 2





---

**Quarterback<sup>TM</sup>**  
**1/4-Inch Cartridge Tape Drive**  
**Engineering Drawing Package**

---

**Volume 2**

RECORD OF REVISIONS

Revision	Description	Date
A	Original Publication	5/82
B	Updated all sections, deleted Section 4. Revised per ACN 2783 and 31583.	12/83

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SECTION I

LOGIC SCHEMATICS

1.1 INTRODUCTION

This volume contains all data essential to understand the logic functions of the Quarterback tape drive, as described in Volume 1. The information is presented in the following manner:

- Section 1 Logic Schematics
- Section 2 Assembly Drawings
- Section 3 Master Parts List

1.2 RELATED DOCUMENTS

To enhance user knowledge of the Quarterback tape drive, the following related documents are available:

- Product Description . . . . .207102-001
- Maintenance Manual (Volume 1) . . . . .207100-001
- Theory of Operation (Volume 3) . . . . .207100-003

1.3 LOGIC DEFINITIONS AND SYMBOLOGY

In several portions of this documentation, primarily Volume 3, and in this Engineering Drawing Package, logic symbols are used to represent certain logical functions or integrated circuit elements. The accepted integrated circuit manufacturer's industry-standard symbols are used here.

Since DTL and TTL logic is being employed, it is of the typical inverting type that use NAND-NOR elements rather than AND-OR devices.

In the logic schematics, the input/output lines to each device are shown for the true (active) state of the function. A state indicator, shown as a small circle at the input or output of a device, signifies that, if that line is in the true state, it is at a 0-Volt potential (low). Lack of a state indicator signifies that, if that line is in the true state, it is at +5 Volts (high). An example of a logic symbol with definitions is shown in Figure I-1. The symbol depicts a logical NOR element which represents that output D is at +5 Volts if either input, A, B or C is at 0-Volt.

0795

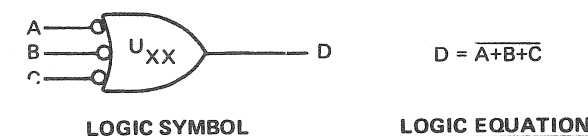


Figure I-1. Logic Symbol Example

This figure shows a logical NOR element that says D is at +5 Volts (true state) if any one, or any combination of A, B, or C is at zero Volt. Typically, the reference designator of the particular chip in the assembly is shown within the symbol, and the corresponding integrated circuit (IC) pin numbers are shown on the lines external to the symbol. The numbers within the arrowheads on the logic schematics indicate the source or destination of the related signal by logic schematic page number. An arrowhead placed adjacent to a signal line indicates a connection at that point.

1.4 INTEGRATED CIRCUIT REFERENCE DATA

The one-shot produces a positive-going pulse at the "1" output and a negative-going pulse at the "0" output, and these are initiated at the time the input pulse makes a transition to its true state. The flip-flops are of the J-K type and have the input/output functions listed in Table I-1. Tables I-2 and I-3 are truth tables applicable to these devices.

Table I-1. Flip-Flop I/O Functions

Designation	Function
J	Synchronous set input
K	Synchronous reset input
T	Clock input
S <sub>D</sub>	Direct set input
C <sub>D</sub>	Direct clear (or Reset) input
1	Set output
0	Reset output

Table I-2. Truth Table for Synchronous Operation

Before Clocks				After Clock	
Outputs		Inputs		Outputs	
I	0	J	K	I	0
L	H	L	X	L	H
L	H	H	X	H	L
H	L	X	L	H	L
H	L	X	H	L	H

Table I-3. Truth Table for Asynchronous Operation

Inputs		Outputs	
SD	CD	I	0
L	L	H	H
L	H	H	L
H	L	L	L
H	H	Synchronous Operation	H

Table I-4 shows all the logic symbols used in this manual with their corresponding names and logical equations. The equations shown are defined by the true level of the input signal.

Table I-4. Logic Symbols

SYMBOL	NAME	LOGICAL EQUATION
	NEGATIVE INVERTER	$B = \bar{A}$
	POSITIVE INVERTER	$B = \bar{A}$
	POSITIVE NAND GATE	$D = \overline{ABC}$
	NEGATIVE NOR GATE	$D = \overline{A+B+C}$
	NEGATIVE WIRED OR GATE	$D = A+B+C$
	FLIP-FLOP (J-K)	SEE TRUTH TABLE
	ONE-SHOT	SEE EXPLANATION
	TIME DELAY NETWORK	$B = A \cdot [DLY]$

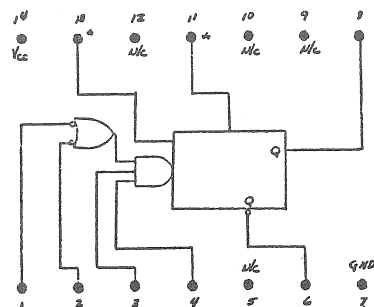
## I.5 LOGIC SCHEMATICS

The following listed logic schematics are provided:

	Dwg. No.
Schematic, Main PWB . . . . .	.207002-200
Schematic, Controller PWB . . . . .	.207005-200
Schematic, Microcomputer Expander PWB . . . . .	.207011-200
Schematic, Motor Driver PWB . . . . .	.207017-200
Schematic, Main PWB . . . . .	.207066-200
Schematic, Motor Driver PWB . . . . .	.207069-200
Schematic, Motor Driver PWB . . . . .	.207076-200

NOTES:

- CASE - 14 Pin Dip, Dimensions Per Spec. Dwg. No. 124000-001
- MATERIAL -  
Case - PLASTIC  
Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



\* FOR EXTERNAL TIMING

VENDOR	PART NO.	COMMENTS
AMD	AM9601PC	
FAIRCHILD	F9601PC	01d P/N U6A960159X
ITT SEMI	ITT9601-N	
NATIONAL SEMI	DM9601N	
RAYTHEON	RF9601N	
STEWART WARNER	SW9601M	



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Part No. 100090-001



I.C., RETRIGGERABLE MONOSTABLE MULTIVIBRATOR (9601)

CODE 109

DRAWN	C. Kelberlau	1/24/77
CHECK	W. Watson	1/24/77
APPR.	Gene Kendrick	1/24/77

100090-000

G

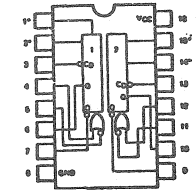
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FORM 495 (12/76)

100234-000

NOTES

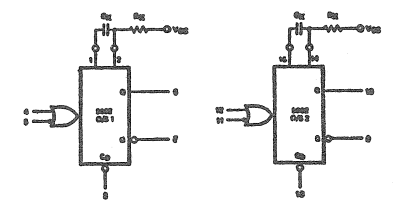
- CASE: 16 Pin Plastic DIP Per CDP Spec. Dwg. No. 124000-002
- ELECTRICAL: Per applicable vendor data sheet



\* Pins for external timing.

VENDOR	VENDOR PART NO.
AMD	AM9602PC
FAIRCHILD	9602PC
NATIONAL	DM8602N
SIGNETICS	N9602N

- 100234-001 - STANDARD PART
- 100234-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000



PART NUMBER 100234-XXX



I.C., MONOSTABLE MULTIVIBRATOR DUAL RETRIGGERABLE (9602)

CODE 109

REV	DESCRIPTION	DATE	APPROVED
ADD-101		1/19	
CRP 8563		1/19	
ECO 1295		1/19	

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TOLERANCES .XX± ANGULAR .XXX±
MODEL
NEXT ASSY

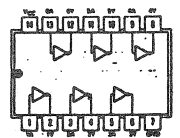
DRAWN	C. Kelberlau	1/17/77	100234-000	E
CHECK	W. Watson	1/17/77		
APPR	Gene Kendrick	1/17/77	CODE IDENT 52465	SHEET 1 of 1

FORM 201 (R. 8/77)

100331

NOTES

- CASE: 14 Pin Plastic DIP Per CDP Spec. Dwg. No. 124000-001
- ELECTRICAL: Per applicable vendor data sheet



VENDOR	VENDOR PART NO.
TEXAS INST.	SN7406N
SIGNETICS	N7406A
MOTOROLA	MC7406P
FAIRCHILD	9N06P
NATIONAL SEMI.	DM7406N

- 100331-001 - STANDARD PART
- 100331-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

PART NUMBER 100331-XXX



I.C., HEX INVERTER BUFFER, OC (7406)

CODE 109

DRAWN	C. Kelberlau	1/17/77
CHECK	W. Watson	1/17/77
APPR	Gene Kendrick	1/17/77

100331

B1

REVISIONS				DO NOT SCALE THIS DRAWING	SHEET 1 of 1
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FORM 495 (12/76)

100345 A

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	Manufacturing Release		1/17/77	

Integrated Circuit, Phase-Frequency Detector

Motorola P/N MC4044P

PART NO. 100345-001



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INTEGRATED CIRCUIT, PHASE FREQUENCY DETECTOR

CODE

QTY. REQ'D.

NOTES UNLESS SPECIFIED	DRAWN	G. Scott	8-30-72
1. TOLERANCES .XX± ANGULAR .XXX±	CHECK		
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
	MODEL No.		
	NEXT ASSY		

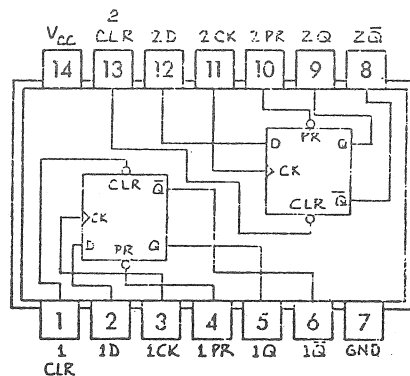
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DO NOT SCALE THIS DRAWING	WEIGHT		SHEET 1 of 1



NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets
3. OPERATING TEMP. - 0°C to +70°C

VENDOR	VENDOR PART NO.
TEXAS INST.	SN74S74N
SIGNETICS	N74S74N
NATIONAL	DM74S74N
FAIRCHILD	74S74PC



- 123023-001 - STANDARD PART  
 123023-101 - BURNED-IN IN ACCORDANCE WITH CIPHEE DATA SPEC NO. 190000.

Part No. 123023-XXX SEE TABULATION



I.C., DUAL "D" TYPE FLIP-FLOP W/PRESET AND CLEAR, SCHOTTKY (74S74)

CODE

109

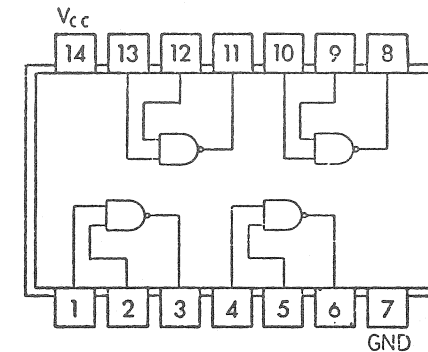
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C	ECO 10719		7/30/80				
B	CR/D 9562		7/17/79				
A1	NEW FORMAT		7/22/77				

FORM 495 (12/76)

NOTES:

1. PACKAGE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets
3. OPERATING TEMP. - 0°C to +70°C

VENDOR	PART NO.
Texas Inst.	SN74S00N
Fairchild	74S00PC



- 123028-001 - STANDARD PART  
 123028-101 - BURNED-IN IN ACCORDANCE WITH CIPHEE DATA SPEC NO. 190000

Part No. 123028-XXX



I.C., SUPER HIGH SPEED QUAD TWO INPUT NAND (74S00)

CODE

109

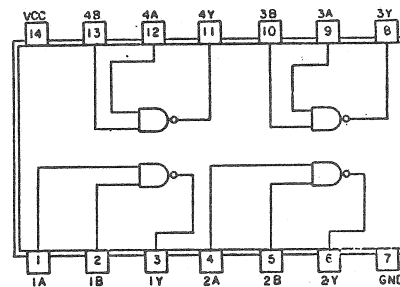
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C	CR/D 8227		11/5/77				
B	CR/D 7949		8/1/77				
A1	NEW FORMAT		7/22/77				

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
2. MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS02 (N,J)
Signetics	N74LS02 (A,F)
Texas Inst.	SN74LS02 (N,J)
Fairchild	F74LS02 (P,D)C
Motorola	SN74LS00N



POSITIVE LOGIC: V = A\*B

- 123029-001 STANDARD PART  
 123029-101 BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

Part No. 123029-XXX



I.C., QUAD 2-INPUT NAND GATE, LOW-PWR. SCHOTTKY (74LS02)

CODE

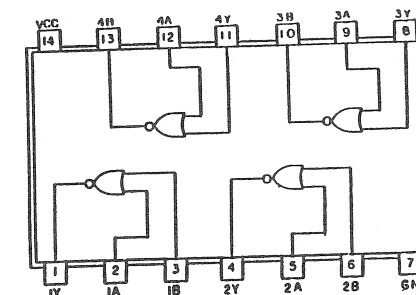
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B	ECO 12775		7/2/83				
A2	ADD -101		7/15/78				
A1	NEW FORMAT		7/22/77				

NOTES:

- CASE: 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001  
 ELECTRICAL: Per the Applicable Vendor Data Sheets.

VENDORS:	PART NUMBERS
NATIONAL	DM74LS02 (N,J)
SIGNETICS	N74LS02 (A,F)
TEXAS INST.	SN74LS02 (N,J)
FAIRCHILD	F74LS02 (P,D)C



POSITIVE LOGIC: V = A+B

- 123030-001 Standard Part  
 123030-101 Burned-In In Accordance With CDP Spec, No. 190000

PART NUMBER 123030-XXX



I.C., QUAD 2-INPUT NOR GATE, LOW - PWR SCHOTTKY (74LS02)

CODE

109

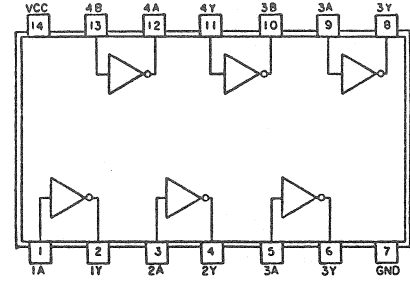
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A2	ADD -101		7/15/78				
A1	NEW FORMAT		7/15/77				

FORM 495 (12/76)

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NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



POSITIVE LOGIC:  
Y = X

VENDOR	PART NO.
National	DM74LS04 (N,J)
Signetics	N74LS04 (A,F)
Texas Inst.	SN74LS04 (N,J)
Fairchild	F74LS04 (P,D)C

123031-001 - STANDARD PART  
123031-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000

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Part No. 123031-XXX



I.C., HEX INVERTER, LOW-PWR. SCHOTTKY (74LS04)

CODE

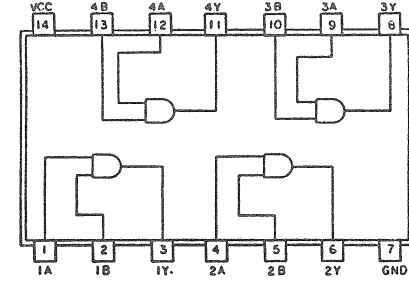
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FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



POSITIVE LOGIC:  
Y = AB

VENDOR	PART NO.
National	DM74LS08 (N,J)
Signetics	N74LS08 (A,F)
Texas Inst.	SN74LS08 (N,J)
Fairchild	F74LS08 (D,P)C

123032-001 Standard Part  
123032-101 Burned-In in accordance with CDP Spec. No. 190000.

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Part No. 123032-XXX



I.C., QUAD 2-INPUT AND GATE, LOW-PWR. SCHOTTKY (74LS08)

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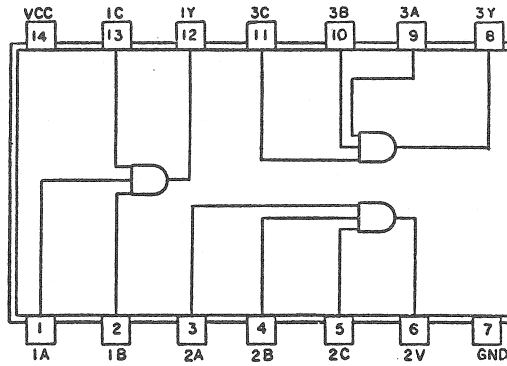
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A <sub>1</sub>	NEW FORMAT	OK	7/22/77	[Signature]	7/22/77		

FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



POSITIVE LOGIC:  
Y = ABC

VENDOR	PART NO.
National	DM74LS11 (N,J)
Signetics	N74LS11 (A,F)
Texas Inst.	SN74LS11 (N,J)
Fairchild	F74LS11 (D,P)C
MOTOROLA	SN74LS11N

123034-001 STANDARD PART  
123034-101 BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

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Part No. 123034-XXX



I.C., TRIPLE 3-INPUT AND GATE, LOW-PWR. SCHOTTKY (74LS11)

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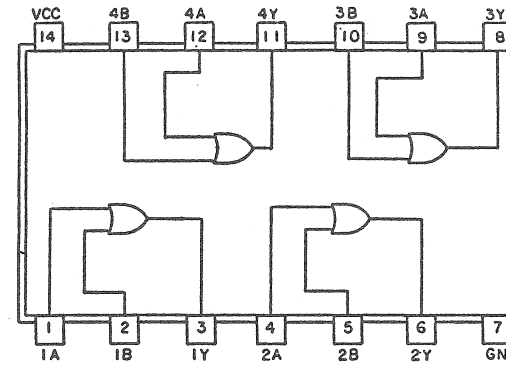
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B	ECO 13024	JAK	11/30/83	[Signature]	C. Kelberlau 7/21/77	123034-000	B
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A <sub>1</sub>	NEW FORMAT	OK	7/21/77	[Signature]	7/21/77		

FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



POSITIVE LOGIC:  
Y = A+B

VENDOR	PART NO.
National	DM74LS32 (N,J)
Signetics	N74LS32 (A,F)
Texas Inst.	SN74LS32 (N,J)
Fairchild	F74LS32 (D,P)C

123035-001 Standard Part  
123035-101 Burned-In in accordance with CDP Spec. No. 190000.

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Part No. 123035-XXX



I.C., QUAD 2-INPUT OR GATE, LOW-PWR. SCHOTTKY (74LS32)

CODE

109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
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A <sub>1</sub>	NEW FORMAT	OK	7/22/77	[Signature]	7/22/77		

FORM 495 (12/76)



**NOTES:**

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS74 (N,J)
HITACHI	HD74LS74AP
Texas Inst.	SN74LS74 (N,J, AN)
Fairchild	74LS74 (D,P)C
Signetics	N74LS74AN
Motorola	SN74LS74A (N,J)

Part No. 123036-001 STANDARD PART  
123036-101 BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

**Part No. 123036-XXX SEE TABULATION**

**123036-000**

I.C., DUAL D-TYPE FLIP-FLOP W/PRESET & CLEAR, LOW-PWR. SCHOTTKY (74LS74)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	ECO 10238	CA	4/29/80	[Signature]		
B2	ADD -101	CA	1/21/78	[Signature]		
B1	CR/O 8727	CA	8/1/78	[Signature]		
B	CR/O 8553	CA	5/5/78	[Signature]		
A2	NEW FORMAT	CA	7/21/77	[Signature]		

FORM 495 (12/76)

**NOTES:**

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001 or Per Pkg. Code Under Vendor Part No.
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin, or Bright Solder Dipped)
- ELECTRICAL CHARACTERISTICS - Per the Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
Fairchild	F74LS86 (P,D)C
Texas Inst.	SN74LS86 (J,N)
Motorola	SN74LS86 (J,N)
National	DM74LS86 (J,N)
Signetics	N74LS86 (N,F)

123038-001 STANDARD PART  
123038-101 BURNED-IN IN ACCORDANCE WITH SPEC. NO. 190000

**Part No. 123038-XXX**

I.C., QUAD. 2-INPUT EXCLUSIVE OR GATE, LOW-PWR. SCHOTTKY (74LS86)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
A1	NEW FORMAT	CA	7/21/77	[Signature]		
A2	ADD -101	CA	1/27/78	[Signature]		
A3	CR/O 9088	CA	3/13/79	[Signature]		
A4	CR/O 9129	CA	3/26/79	[Signature]		
B	REV. & RDM					
	PER CR/O					
	9409					
	CR/O 9639/A					

FORM 201 (R 1-79) BISHOP GRAPHICS/ACCUPRESS

**NOTES:**

- CASE - 16 Pin Plastic DIP Per Spec. Dwg. No. 124000-002
- MATERIAL - Case - Plastic or Ceramic Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS123 (N,J)
Signetics	N74LS123 (B,F)
Texas Inst.	SN74LS123 (N,J)
Fairchild	F74LS123 (D,P)C

Part No. 123039-001

**123039-000**

I.C., DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR W/CLEAR, LOW-PWR. SCHOTTKY (74LS123)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
A1	NEW FORMAT	CA	7/21/77	[Signature]		
B	ECO 11993	CA	7/21/77	[Signature]		
C	ECO 13021	CA	7/21/77	[Signature]		

FORM 495 (12/76)

**NOTES:**

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

VCC = PIN 16  
GND = PIN 8

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123045-001	TEXAS INSTRUMENTS	SN74LS175 (J,N)
123045-001	FAIRCHILD	F74LS175 (D,P)C
123045-001	NATIONAL	DM74LS175 (J,N)
123045-001	SIGNETICS	N74LS175 (B,F)
123045-001	AMD	AM74LS175 (N,J)
123045-001	MOTOROLA	SN74LS175 (N)
123045-002	AMD	AM25LS175 (N)

123045-0XX STANDARD PART  
123045-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

**Part No. 123045-XXX(SEE TABULATION)**

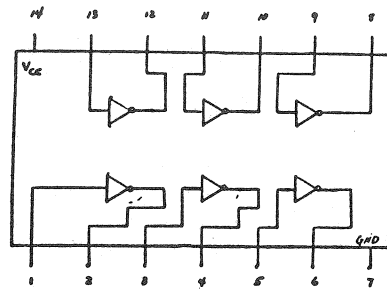
I.C., QUAD., D-TYPE FLIP-FLOP, WITH CLEAR (25/74LS175)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
A1	NEW FORMAT	CA	7/21/77	[Signature]		
B	ECO 11993	CA	7/21/77	[Signature]		
C	ECO 13021	CA	7/21/77	[Signature]		

FORM 201 (R 11/80)

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- MATERIAL -  
Case - Ceramic or Plastic  
Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



VENDOR	VENDOR PART NO.
Signetics	N74S04 (A,F)
Fairchild	F74S04 (P,D)C
National	DM74S04 (N,J)
Texas Inst.	SN74S04 (N,J)

123046-001 Standard Part  
123046-101 Burned-In In Accordance With CIP Spec. No. 190000

Part No. 123046-XXX



I.C., HEX INVERTER, SCHOTTKY (74S04)

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123046

11

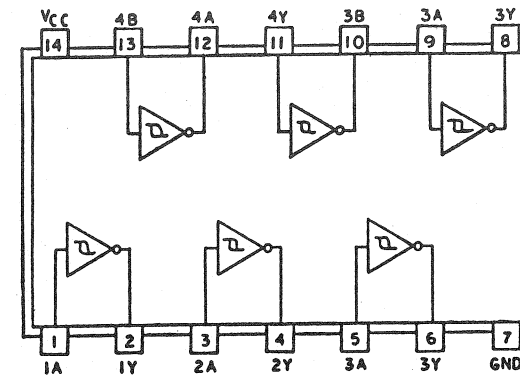
DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic Dip Per Spec. Dwg. No. 124000-001
- MATERIAL -  
Case - Plastic or ceramic  
Leads - Plated (Gold, Tin, or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets



POSITIVE LOGIC:  
Y=A

VENDOR	VENDOR PART NO.
National	DM74LS14 (N,J)
Signetics	N74LS14 (A,F)
Texas Inst.	SN74LS14 (N,J)
Fairchild	F74LS14 (P,D)C

123047-001 - STANDARD PART  
123047-101 - BURNED-IN IN ACCORDANCE WITH CIP SPEC NO. 190000.

Part No. 123047-XXX



I.C., HEX INVERTER, SCHMITT-TRIGGER, LOW-PWR SCHOTTKY (74LS14)

CODE

109

A2	ADD -101	7/11/77	
A2	NEW FORMAT	7/20/77	
REV.	DESCRIPTION	CHK.	DATE

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123047

A2

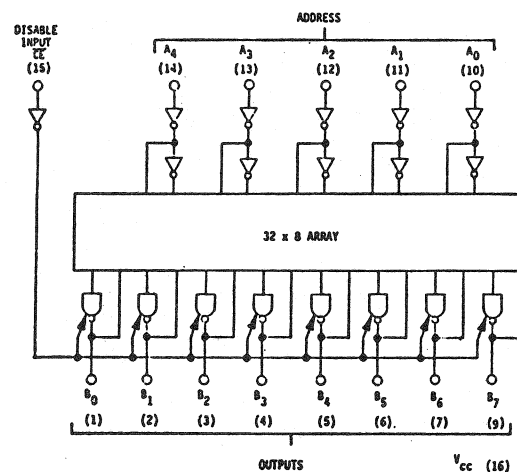
DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE - 16 Pin Plastic DIP Per Spec: Dwg. No. 124000-002
- MATERIAL: Case - Plastic or Ceramic  
Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL CHARACTERISTICS - Per the Applicable Vendor Data Sheets
- The Integrated Circuit described in this spec. must be further modified by programming prior to use.



NOTE: Outputs are disabled (at high impedance state) when CE is at logical high state.

Part No. 123056-001



I.C., ROM-PROGRAMMABLE, 256 BIT TRI-STATE OUTPUTS 123056

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123056

A2

DO NOT SCALE THIS DRAWING

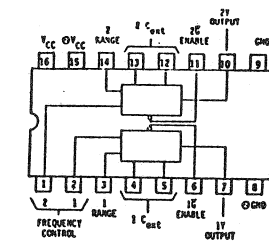
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE: 16 Pin Plastic DIP Per Spec Dwg. No. 124000-002
- ELECTRICAL: Per The Applicable Vendor Data Sheets.

VENDOR	PART NUMBER
TEXAS INSTRUMENTS	SN74S124N or SN74S124J



LOGIC: OUTPUT (Y) IS ENABLED WHEN ENABLE INPUT (E) IS LOW  
OUTPUT (Y) IS DISABLED HIGH WHEN ENABLE INPUT (E) IS HIGH

PART NUMBER 123069-001



INTEGRATED CIRCUIT DUAL VOLTAGE-CONTROLLED OSCILLATORS, SCHOTTKY - 74S124

CODE

109

A2	NEW FORMAT	7/15/77	
REV.	DESCRIPTION	CHK.	DATE

DRAWN	M.R. HOWARD	8/12
CHECK		
APPR.		

123069

A1

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

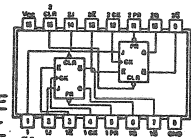


**NOTES:**

1. CASE - 16 Pin Plastic Dip Per Spec Dwg. No. 124000-002
2. ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	PART NUMBER
TEXAS INST.	SN74LS109N
AMD	AM74LS109PC
FAIRCHILD	74LS109PC
NATIONAL	DM74LS109N
SIGNETICS	N74LS109B
MOTOROLA	SN74LS109AN

INPUTS		OUTPUTS	
PRESET	CLOCK	J	K
L	H	X	X
H	L	X	X
L	L	X	X
H	H	L	L
H	H	L	L
H	H	L	L
H	H	L	L
H	H	L	L



123084-001 - STANDARD PART  
 123084-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000.

PART NUMBER 123084-XXX



I.C., DUAL J-K POSITIVE EDGE TRIGGERED FLIP-FLOP, LOW PWR SCHOTTKY (74LS109)

CODE

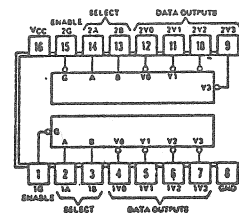
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET
C	ECO 13022	JAX	11/30/83	[Signature]			1 of 1
B	CR/D 9562	SEJR	9/17/79	[Signature]	M.R. HOWARD 8/11	123084-000	C
A <sub>2</sub>	NEW FORMAT		8/15/77	[Signature]	D. WATSON 8/15/77		
A <sub>1</sub>	NEW FORMAT		8/15/77	[Signature]	Jess Kendrick 8/15/77		

FORM 495 (12/76)

**NOTES:**

- CASE: 16 Pin Plastic Dip Per Spec. Dwg. No. 124000-002
- ELECTRICAL - Per Applicable Vendor Data Sheets.

VENDOR	PART NUMBER
TEXAS INST.	SN74LS139N
AMD	AM74LS139PC
FAIRCHILD	74LS139PC
NATIONAL	DM74LS139N
SIGNETICS	N74LS139B
MOTOROLA	SN74LS139N



123085-001 Standard Part  
 123085-101 Burned-In in accordance with CDP Spec. No. 190000.

PART NO. 123085-XXX



I.C., DUAL 2-TO-4 LINE DECODER DUAL 1-TO-4 LINE DEMULTIPLEXER LOW PWR SCHOTTKY (74LS139)

CODE

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET
C	ECO 13024	JAX	11/30/83	[Signature]			1 of 1
B	CR/D 9745/1A	M.L.	11/11/80	[Signature]	M.R. HOWARD 8/10	123085-000	C
A <sub>2</sub>	NEW FORMAT		8/15/77	[Signature]	D. WATSON 8/15		
A <sub>1</sub>	NEW FORMAT		8/15/77	[Signature]	Jess Kendrick 8/15/77		

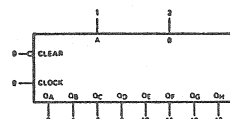
FORM 495 (12/76)

**NOTES:**

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 14 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-001

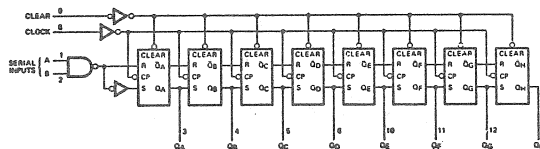
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123086-001	TEXAS INSTRUMENTS FAIRCHILD NATIONAL SIGNETICS AMD	SN74LS164N 74LS164PC DM74LS164N N74LS164A AM74LS164PC
123086-002	AMD	AM25LS164PC

**LOGIC SYMBOL**



V<sub>CC</sub> - Pin 14  
 GND - Pin 7

**LOGIC DIAGRAM**



123086-0XX STANDARD PART  
 123086-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 123086-XXX (SEE TABULATION)

DO NOT SCALE DRAWING

TOLERANCES  
 .XX±  
 .XXX±



I.C., 8-BIT SERIAL-IN, PARALLEL OUT SHIFT REGISTER (25/74LS164)

CODE

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET
C	ECO 12002	[Signature]	8/15/77	[Signature]			1 of 1
B	REV# RDRN		8-15-77	T. WATSON 8-15-77	M.R. HOWARD 8/15	123086-000	C
A	REV# RDRN		8-15-77	JESS KENDRICK 8-15-77	JESS KENDRICK 8-15-77		

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN: M.R. HOWARD 8/15  
 CHECK: T. WATSON 8-15-77  
 APPR: JESS KENDRICK 8-15-77

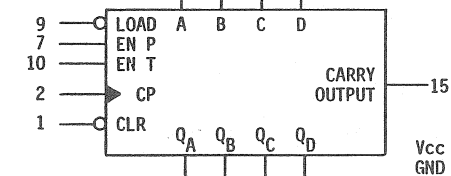
CODE IDENT 52465 SHEET 1 of 1

**NOTES:**

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123090-001	FAIRCHILD AMD NATIONAL MOTOROLA SIGNETICS T.I.	74LS163PC AM74LS163APC DM74LS163N SN74LS163AN N74LS163AN SN74LS163AN
123090-002	AMD	AM25LS163APC

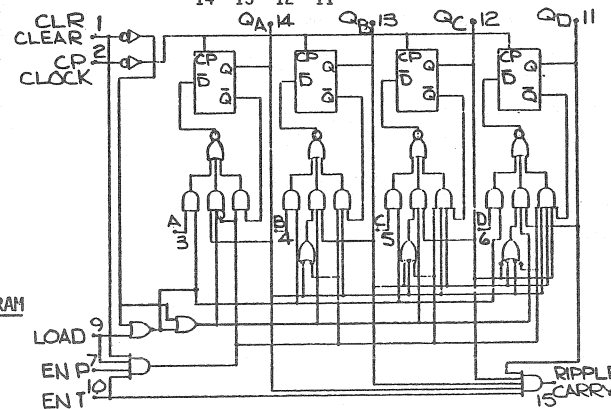
**LOGIC SYMBOL**



123090-000

V<sub>CC</sub> = PIN 16  
 GND = PIN 8

**LOGIC DIAGRAM**



123090-0XX STANDARD PART  
 123090-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 123090-XXX (SEE TABULATION)

DO NOT SCALE DRAWING

TOLERANCES  
 .XX±  
 .XXX±



I.C., 4-BIT BINARY COUNTER WITH SYNCHRONOUS RESET (25/74LS163)

CODE

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET
D	ECO 12016	[Signature]	2/23/82	[Signature]			1 of 1
C	REV# RDRN		2/23/82	BAKER 1/27/82	BAKER 1/27/82	123090-000	D
B	REV# RDRN		2/23/82	BAKER 1/27/82	BAKER 1/27/82		
A	REV# RDRN		2/23/82	JESS KENDRICK 2/23/82	JESS KENDRICK 2/23/82		

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

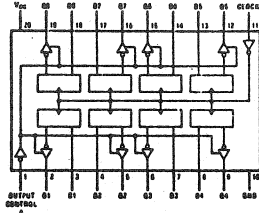
DRAWN: BAKER 1/27/82  
 CHECK: Pam Mahan 2/5/82  
 APPR: Jess Kendrick 2/23/82

CODE IDENT 52465 SHEET 1 of 1

NOTES:

- CASE - 20 Pin Plastic Dip
- ELECTRICAL - Per applicable vendor data sheets

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.



123091-001 Standard Part  
123091-101 Burned-In in accordance with CDP Spec. No. 190000.

VENDOR	VENDOR PART NO.
AMD	AM74LS374PC
NATIONAL	DM74LS374N
FAIRCHILD	74LS374PC
TI	SN74LS374N
SIGNETICS	N74LS374N
MHI	SN74LS374N

Part No. 123091-XXX

**cipher**  
DATA PRODUCTS, INC.  
OCTAL D FLIP-FLOPS, TRI-STATE  
LOW PWR SCHOTTKY (74LS374)

CODE

109

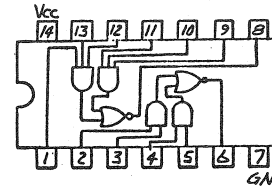
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
C	E.C.O. 10096	ALL	3/6/80	3/6/80	[Signature]		
B	...	...	...	...	...		
A <sub>1</sub>	NEW FORMAT		7/1/77	[Signature]		123091-000	C

FORM 495 (12/76)

NOTES:

- CASE - 14 Pin Plastic Dip Per Spec. Dwg. No. 124000-001
- ELECTRICAL - Per Applicable Vendor Data Sheets

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.



LOGIC/PIN CONFIGURATION

VENDOR	VENDOR PART NUMBER
AMD	AM74LS51PC
FAIRCHILD	74LS51PC
NATIONAL	DM74LS51N
SIGNETICS	N74LS51A
T. I.	SN74LS51N

Part No. 123093-001

**cipher**  
DATA PRODUCTS, INC.  
I.C., DUAL 2-WIDE 2-INPUT/3-INPUT AND-OR  
INVERT GATE LOW PWR SCHOTTKY (74LS51)

CODE

109

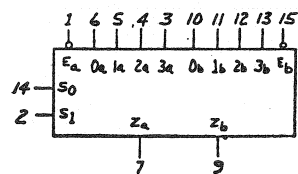
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
A <sub>1</sub>	NEW FORMAT		7/6/77	[Signature]		123093	A <sub>1</sub>

FORM 495 (12/76)

NOTES:

- CASE - 16 Pin Plastic Dip Per Spec. Dwg. No. 124000-002.
- ELECTRICAL - Per Applicable Vendor Data Sheets

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.



LOGIC/PIN CONFIGURATION

VENDOR	VENDOR PART NO.
AMD	AM74LS153PC
FAIRCHILD	74LS153PC
NATIONAL	DM74LS153N
SIGNETICS	N74LS153B
T. I.	SN74LS153N

Part No. 123095-001

**cipher**  
DATA PRODUCTS, INC.  
DUAL 4-LINE TO 1-LINE DATA SELECTORS/  
MULTIPLEXERS, LOW PWR SCHOTTKY (74LS153)

CODE

109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
A <sub>1</sub>	NEW FORMAT		7/1/77	[Signature]		123095	A <sub>1</sub>

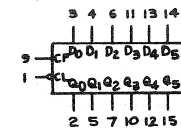
FORM 495 (12/76)

NOTES:

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

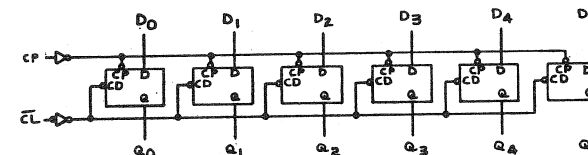
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123096-001	AMD FAIRCHILD NATIONAL SIGNETICS	AM74LS174PC 74LS174PC DM74LS174N N74LS174N
123096-002	TEXAS INSTRUMENTS MOTOROLA AMD	SN74LS174N SN74LS174N AM25LS174PC

LOGIC SYMBOL  
LS174



Vcc = PIN 15  
GND = PIN 8

LOGIC DIAGRAM LS174



123096-0XX STANDARD PART

123096-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER: 123096-XXX (SEE TABULATION)

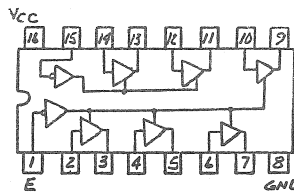
REV	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE DRAWING	TOLERANCES	MODEL	NEXT ASSY	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	CODE
A <sub>1</sub>	NEW FORMAT		7/1/77	[Signature]		123096-000	XXX± .XXX±	I.C., HEX D FLIP-FLOP WITH CLEAR (25/74LS174)			109
D	ECO 12004		8/10	[Signature]		123096-000	±				D
C	ECO 12021		8/10	[Signature]		123096-000					D
B	ECO 12021		8/10	[Signature]		123096-000					D
A	...		...	...		123096-000					D

FORM 201 (R 11/80)

NOTES:

- CASE - 14 Pin Plastic Dip Per Spec. Drawing No. 124000-002.
- ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
AMD	AM74LS367PC
FAIRCHILD	74LS367PC
NATIONAL	DM74LS367N
SIGNETICS	N74LS367B
T. I.	SN74LS367N
Motorola	SN74LS367AH



LOGIC/PIN CONFIGURATION

123097-001 - STANDARD PART  
 123097-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000.

Part No. 123097-XXX



HEX 3-STATE BUFFER, SEPARATE 2-BIT SECTIONS, LOW PWR SCHOTTKY (74LS367)

CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
B	CR/O 9562	JELSON	9/17/79	[Signature]				
A2	CR/O 9190	San J	9/11/79	[Signature]				
A3	NEW FORMAT	ca	7/1/77	[Signature]				
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 of 1

FORM 496 (12/76)

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

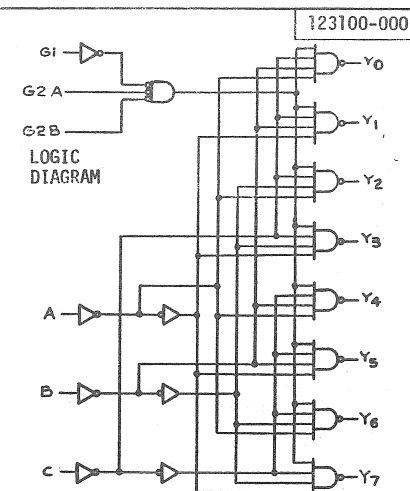
NOTES:

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

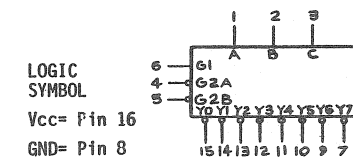
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123100-001	AMD	AM74LS138PC
123100-001	FAIRCHILD	74LS138PC
123100-001	NATIONAL	DM74LS138N
123100-001	SIGNETICS	N74LS138A
123100-001	TEXAS INST.	SN74LS138N
123100-002	AMD	AM25LS138PC

123100-0XX STANDARD PART

123100-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.



LOGIC SYMBOL  
 Vcc= Pin 16  
 GND= Pin 8



PART NUMBER 123100-XXX(SEE TABULATION)



I.C., DECODER/DEMULTIPLEXER 3-LINE TO 8-LINE (25/74LS138)

CODE 109

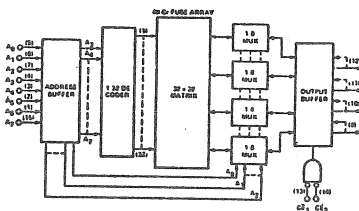
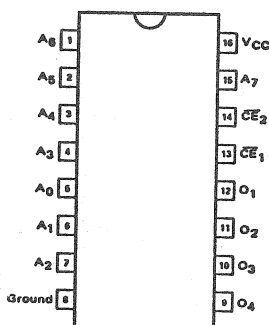
REV	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 OF 1
C	ECO 12005	ECO	7/1/77	[Signature]				
REV. <td>DESCRIPTION <td>CHK. <td>DATE <td>APPROVED <td>APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td></td></td></td></td></td>	DESCRIPTION <td>CHK. <td>DATE <td>APPROVED <td>APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td></td></td></td></td>	CHK. <td>DATE <td>APPROVED <td>APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td></td></td></td>	DATE <td>APPROVED <td>APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td></td></td>	APPROVED <td>APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td></td>	APPR. <td>DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td></td>	DATE <td>DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td> </td>	DO NOT SCALE THIS DRAWING <td>SHEET 1 OF 1</td>	SHEET 1 OF 1

FORM 201 (R 11/80)

NOTES:

- CASE - 16 Pin Plastic or Ceramic Per Spec. Dwg., No. 124000-002.
- MECHANICAL & ELECTRICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR PART NO.
Signetics	N82S129N, N82S129F
Fairchild	93427PC, 93427DC
NATIONAL	DM74S287N



THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

Part No. 123106-001



I.C., 1024-BIT BIPOLAR PROGRAMMABLE ROM (256X4 PROM) WITH TRI-STATE OUTPUTS

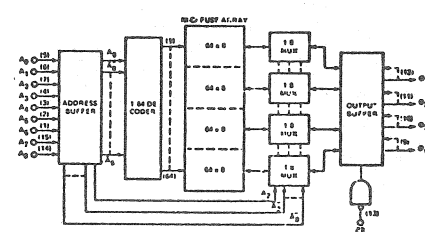
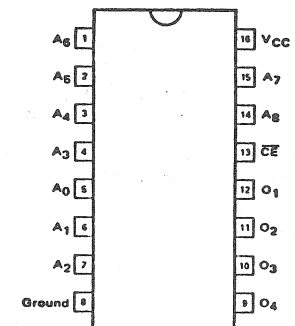
CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 of 1
E	ECO 12298	Joz	6/22/82	[Signature]				
D	ECO 12136	W	4/24/82	[Signature]				
C	CR/O 9834	MS 1-7-80	1/11/80	[Signature]				
B	CR/O 9340	DULLOA	7/3/79	[Signature]				
A1	CR/O - 8996	DULLOA	2/19/79	[Signature]				
A	MFG. RELEASE	ca	4/21/77	[Signature]				
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 of 1

NOTES:

- CASE - 16 Pin Plastic or Ceramic Per Spec Dwg. 124000-002.
- ELECTRICAL & MECHANICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR P/N
Signetics	N82S131N, N82S131F
Harris	HM1-7621-5, HM3-7621-5
Fairchild	93446PC, 93446DC
AMD	AM27S13DC
NATIONAL	DM74S571N



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Part No. 123107-001



I.C., 2048-BIT BIPOLAR PROGRAMMABLE ROM (512X4 PROM), WITH TRI-STATE OUTPUTS

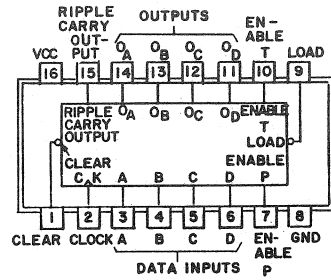
CODE 109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 OF 1
C	ECO 12136	W	4/24/82	[Signature]				
B	CR/O 9834	MS 1-7-80	1/11/80	[Signature]				
A1	CR/O - 8996	DULLOA	2/19/79	[Signature]				
A	MFG. RELEASE	ca	4/21/77	[Signature]				
REV.	DESCRIPTION <td>CHK.</td> <td>DATE</td> <td>APPROVED</td> <td>APPR.</td> <td>DATE</td> <td>DO NOT SCALE THIS DRAWING</td> <td>SHEET 1 OF 1</td>	CHK.	DATE	APPROVED	APPR.	DATE	DO NOT SCALE THIS DRAWING	SHEET 1 OF 1

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

NOTES:

- CASE - 16 Pin Plastic DIP Per Spec Dwg. No. 124000-002
- ELECTRICAL - Per Applicable Vendor Data Sheet



VENDOR	VENDOR PART NO.
Texas Inst.	SN74S163N

Part No. 123119-001

**Cipher**

I.C., SYNCHRONOUS 4-BIT COUNTER (74S163)

CODE

109

DRAWN	C. Kelberlau	6/9/77
CHECK	<i>[Signature]</i>	6/9/77
APPR.	<i>[Signature]</i>	6/9/77

123119

A

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	MFG. RELEASE	<input checked="" type="checkbox"/>	6/9/77	<i>[Signature]</i>

REVISIONS

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

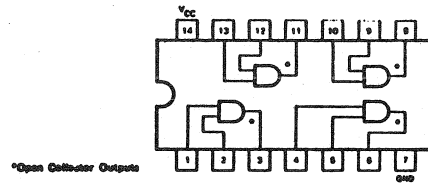
FORM 495 (12/76)

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

NOTES:

- CASE - 14 Pin Plastic DIP Per Spec Dwg. No. 124000-001
- ELECTRICAL - Per Applicable Vendor Data Sheet

QUAD 2-INPUT AND GATE (WITH OPEN-COLLECTOR OUTPUT)



\*Open Collector Outputs

VENDOR	VENDOR PART NO.
Signetics	SN74LS09N
Fairchild	SN74LS09N
Texas Inst.	SN74LS09N

Part No. 123123-001

**Cipher**

I.C., QUAD 2-INPUT AND GATE WITH OPEN COLLECTOR OUTPUT (74LS09)

CODE

109

DRAWN	C. Kelberlau	6/22/77
CHECK	<i>[Signature]</i>	6/22/77
APPR.	<i>[Signature]</i>	6/22/77

123123

A

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	MFG. RELEASE	<input checked="" type="checkbox"/>	6/22/77	<i>[Signature]</i>

REVISIONS

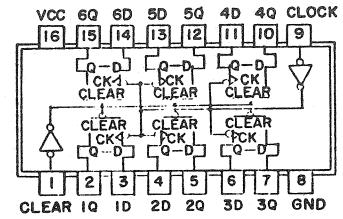
DO NOT SCALE THIS DRAWING

SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE - 16 Pin Plastic DIP Per Spec. Dwg. No. 124000-002
- ELECTRICAL - Per Applicable Vendor Data Sheet



LOGIC / PIN CONFIGURATION

VENDOR	VENDOR PART NO.
Texas Inst.	SN74S174N
Signetics	N74S174N
Fairchild	74S174PC
National	DM74S174N
AMD	SN74S174N

123120-001 - STANDARD PART  
123120-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000.

Part No. SEE TABULATION

**Cipher**

I.C., HEX D-TYPE FLIP-FLOPS WITH CLEAR (74S174)

CODE

109

C	E.C.O. 10016 ML.	3-6-80	3/6/80	<i>[Signature]</i>
B	CRIO 9562	JEH	9/7/79	<i>[Signature]</i>
A1	CRIO 8946	SAI	1/25/79	<i>[Signature]</i>

DRAWN	C. Kelberlau	6/9/77
CHECK	<i>[Signature]</i>	6/9/77
APPR.	<i>[Signature]</i>	6/9/77

123120-000

C

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	MFG. RELEASE	<input checked="" type="checkbox"/>	6/9/77	<i>[Signature]</i>

REVISIONS

DO NOT SCALE THIS DRAWING

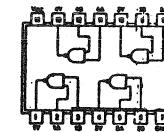
SHEET 1 of 1

FORM 495 (12/76)

123149

NOTES:

- CASE: 14 Pin Plastic DIP Per Spec. Dwg. No. 124000-001
- ELECTRICAL: Per Applicable Vendor Data Sheet.



VENDOR	PART NUMBER
TEXAS INST.	SN74LS01N
SIGNETICS	SN74LS01N
FAIRCHILD	SN74LS01N
AMD	SN74LS01N

PART NUMBER 123149-001

DO NOT SCALE DRAWING 3/4"

TOLERANCES .XX± ANGULAR ±

**Cipher**

I.C., QUAD 2-INPUT POSITIVE NAND GATE W/OPEN COLL. (74LS01)

CODE

109

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	MFG. RELEASE	<input checked="" type="checkbox"/>	6/22/77	<i>[Signature]</i>

DRAWN	C. Kelberlau	6/22/77
CHECK	<i>[Signature]</i>	6/22/77
APPR.	<i>[Signature]</i>	6/22/77

123149

A

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CODE IDENT 52465 SHEET 1 of 1

FORM 201 (R. 8/77)

123152-000

**NOTES**

- CASE: 20 Pin Plastic DIP Per Spec. Dwg. No. 124000-006
- ELECTRICAL: Per Applicable Vendor Data Sheet

VENDOR	VENDOR P/N
TEXAS INST.	SN74LS273N
AMD	SN74LS273N
FAIRCHILD	74LS273PC

PART NUMBER 123152-001

DO NOT SCALE DRAWING 3/4"

TOLERANCES  
.XX± ANGULAR  
.XXX± ±

MODEL I.C., OCTAL D-TYPE FLIP-FLOP WITH CLEAR (74LS273) CODE 109

NEXT ASSY

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DRAWN C. Kelberlau 3/27/78 123152-000 B

CHECK [Signature] 3/27/78

APPR [Signature] 3/27/78 CODE IDENT 52465 SHEET 1 OF 1

FORM 201 (R. 8/77)

123192

**DESCRIPTION**

GENERAL: 8-Bit CPU, ROM, RAM, I/O in single package. 2.5μsec and 5.0μsec versions. All instructions 1 or 2 cycles. Over 90 instructions: 70% Single Byte. 1K x 8 ROM/EPROM, 64 x 8 RAM, 27 I/O lines. Interval Timer/Event Counter, Expandable Memory and I/O. Compatible with 8000 series peripherals. Single level interrupt. Single 5V supply.

PACKAGE: 40 PIN Dual in Line.

ELECTRICAL: Per applicable vendor data sheet.

VENDOR	VENDOR PART NO.
INTEL	8035

PART NUMBER 123192-001

DO NOT SCALE DRAWING

TOLERANCES  
.XX± ANGULAR  
.XXX± ±

MODEL I.C., SINGLE COMPONENT 8-BIT MICRO COMPUTER (8035) CODE 109

NEXT ASSY

DRAWN L. Hale 8-22-78 123192 A

CHECK [Signature] 8-22-78

APPR [Signature] 8-23-78 CODE IDENT 52465 SHEET 1 OF 1

FORM 201 (R. 8/77)

123203-000

**NOTES:**

- CASE- 14 PIN PLASTIC DIP PER SPEC. DWG. 124000-001.
- ELECTRICAL- PER APPLICABLE VENDER DATA SHEET.

VENDER	VENDER PART NO.
TEXAS INST.	SN74LS393N
FAIRCHILD	74LS393PC
SIGNETICS	N74LS393N
MOTOROLA	SN74LS393N

PART NUMBER 123203-001

DO NOT SCALE DRAWING

TOLERANCES  
.XX± ANGULAR  
.XXX± ±

MODEL I.C., DUAL 4 STAGE BINARY COUNTER (74LS393) CODE 109

NEXT ASSY

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DRAWN [Signature] 9-22-80 123203-000 A

CHECK [Signature] 9-26-80

APPR [Signature] 9/26/80 CODE IDENT 52465 SHEET 1 OF 1

FORM 201 (R. 8/77)

123231-000

**NOTES:**

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
- PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
RCA MOTOROLA SGS	CD4502BE MC14502BCP HCF4502BE

123231-0XX STANDARD PART

123231-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

TRUTH TABLE

Dn	INHIBIT	DISABLE	Qn
0	0	0	1
1	0	0	0
X	1	0	0
X	X	1	HIGH IMPEDANCE

DSC: R PART NUMBER 123231-XXX

DO NOT SCALE DRAWING

TOLERANCES  
.XX± ANGULAR  
.XXX± ±

MODEL I.C., STROBED HEX INVERTER/BUFFER-CMOS (4502B) CODE 109

NEXT ASSY

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DRAWN T. LINDMAN 1-29-82 123231-000 C

CHECK [Signature] 1/29/82

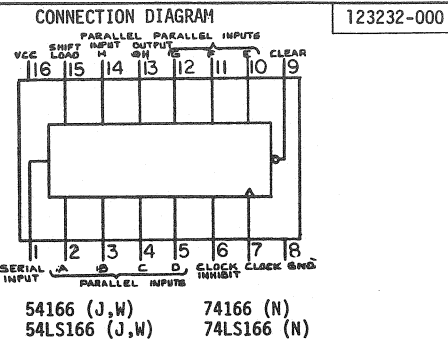
APPR [Signature] 3/26/82 CODE IDENT 52465 SHEET 1 OF 1

FORM 201 (R. 8/77)



- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
  - PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
MOTOROLA	SN74LS166N
NATIONAL	DM74LS166N
TEXAS INST.	SN74LS166AN



Truth Table

Clear	Inputs					Internal Outputs		Output Q <sub>n</sub>
	Shift/Load	Clock Inhibit	Clock	Serial	Parallel A...M	Q <sub>A</sub>	Q <sub>B</sub>	
L	X	X	X	X	X	L	L	L
H	X	L	L	X	X	Q <sub>A0</sub>	Q <sub>B0</sub>	Q <sub>n0</sub>
H	L	L	L	X	a...h	a	b	h
H	H	L	L	H	X	H	Q <sub>An</sub>	Q <sub>Gn</sub>
H	H	L	L	L	X	L	Q <sub>An</sub>	Q <sub>Gn</sub>
H	H	X	H	X	X	Q <sub>A0</sub>	Q <sub>B0</sub>	Q <sub>n0</sub>

H = High Level (steady state), L = Low Level (steady state)  
 X = Don't Care (any input, including transitions)  
 † = Transition from low to high level  
 a...h = The level of steady-state signal at inputs A through H, respectively  
 Q<sub>A0</sub>, Q<sub>B0</sub>, Q<sub>n0</sub> = The level of Q<sub>A</sub>, Q<sub>B</sub>, Q<sub>n</sub>, respectively, before the indicated steady-state input conditions were established  
 Q<sub>An</sub>, Q<sub>Bn</sub> = The level of Q<sub>A</sub>, Q<sub>B</sub>, respectively, before the most recent † transition of the clock

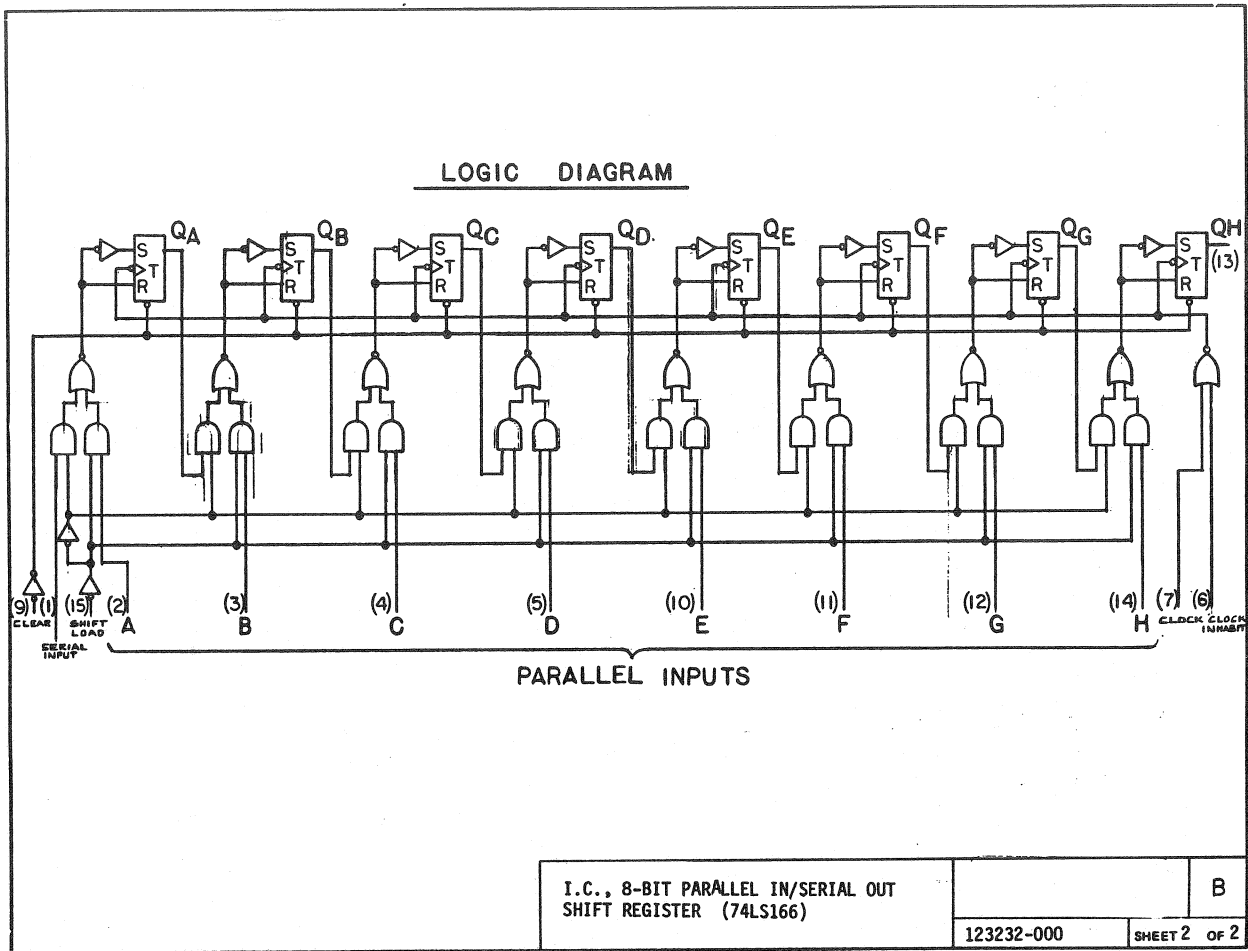
123232-001 STANDARD PART

123232-101 BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

DSC: R PART NUMBER 123232-XXX

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING		I.C., 8-BIT PARALLEL IN/SERIAL OUT SHIFT REGISTER (74LS166)	CODE 109
A	PROD. BEL. ERO 820299 1/15/82	1/15/82	TOLERANCES .XX± ANGULAR .XXX± ±			
B	ECO 12301 12/12/82	12/12/82	MODEL NEXT ASSY		I.C., 8-BIT PARALLEL IN/SERIAL OUT SHIFT REGISTER (74LS166)	B
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF PERKIN-ELMER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PERKIN-ELMER MEMORY PRODUCTS DIVISION.			DRAWN R. Baumgartner 2-2-82 CHECK Sam Mathani 2/3/82 APPR Wes Kendrick 3/30/82	123232-000 CODE IDENT 52465	SHEET 1 OF 2	

FORM 201 (R 11/80)



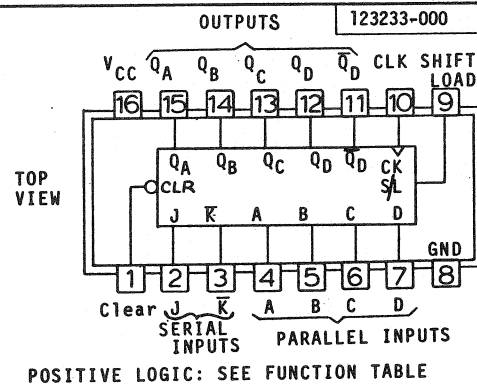
I.C., 8-BIT PARALLEL IN/SERIAL OUT SHIFT REGISTER (74LS166)

123232-000 SHEET 2 OF 2

FORM 202 (R.8/77)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
  - PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
TEXAS INST. SIGNETICS NATIONAL	SN74LS195AN N74LS195N DM74LS195N



POSITIVE LOGIC: SEE FUNCTION TABLE

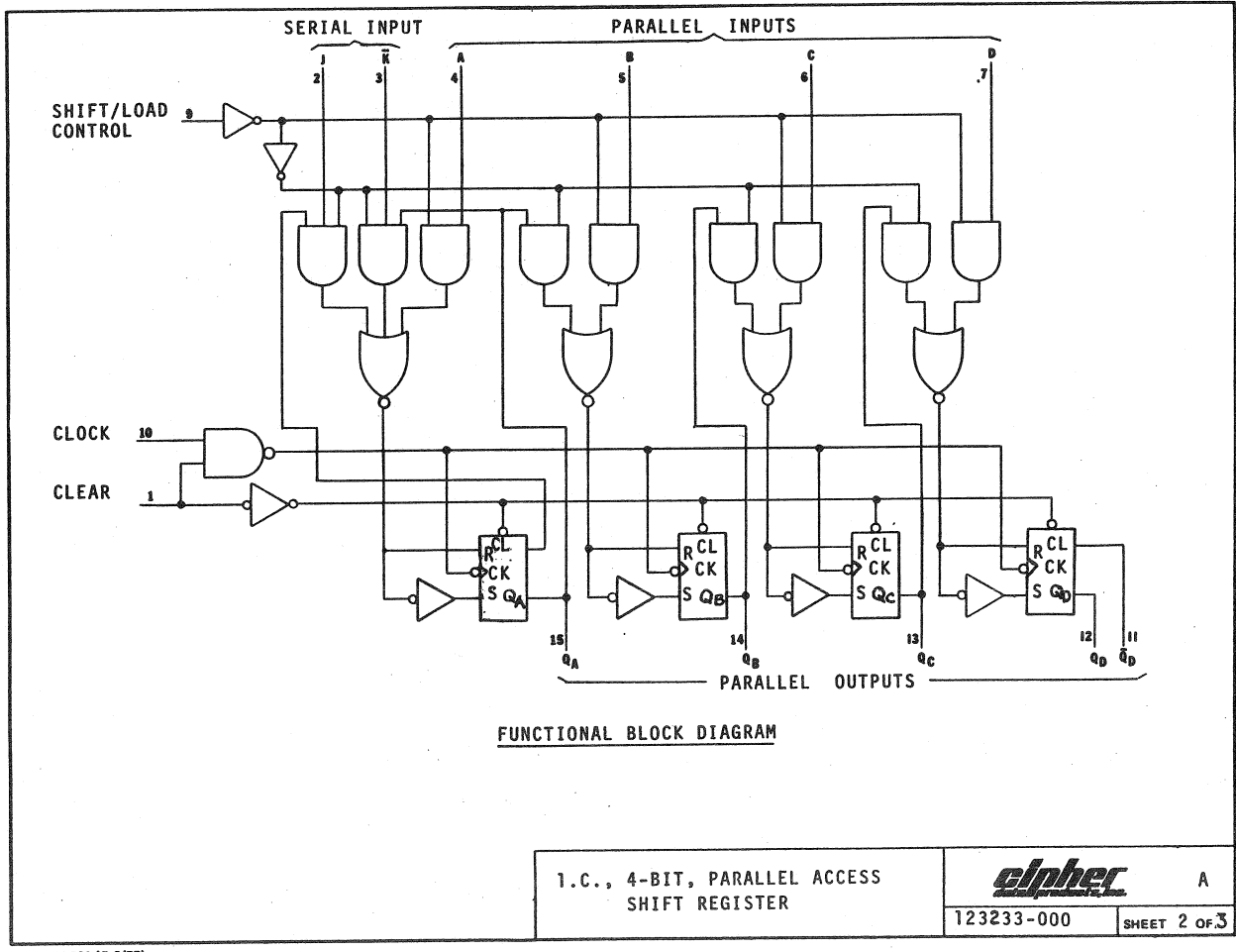
123233-0XX STANDARD PART

123233-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

DSC: R PART NUMBER 123233-XXX

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING		I.C., 4-BIT, PARALLEL ACCESS SHIFT REGISTER	CODE 109
A	PROD. BEL. ERO 820299 1/15/82	1/15/82	TOLERANCES .XX± ANGULAR .XXX± ±			
B	ECO 12301 12/12/82	12/12/82	MODEL NEXT ASSY		I.C., 4-BIT, PARALLEL ACCESS SHIFT REGISTER	A
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF PERKIN-ELMER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PERKIN-ELMER MEMORY PRODUCTS DIVISION.			DRAWN D. WILSON JAN 29 82 CHECK Sam Mathani 2/1/82 APPR Wes Kendrick 2/20/82	123233-000 CODE IDENT 52465	SHEET 1 OF 3	

FORM 201 (R 11/80)



I.C., 4-BIT, PARALLEL ACCESS SHIFT REGISTER

123233-000 SHEET 2 OF 3

FORM 202 (R.8/77)

CLEAR	SHIFT/LOAD	CLOCK	INPUTS				OUTPUTS				
			SERIAL J K	PARALLEL A B C D	Q <sub>A</sub>	Q <sub>B</sub>	Q <sub>C</sub>	Q <sub>D</sub>	Q̄ <sub>D</sub>		
L	X	X	X X	X X X X	L L	L L	H				
H	L	↑	X X	a b c d	a b	c d	d̄				
H	H	L	X X	X X X X	Q <sub>A0</sub> Q <sub>B0</sub>	Q <sub>C0</sub> Q <sub>D0</sub>	Q̄ <sub>D0</sub>				
H	H	↑	L H	X X X X	Q <sub>A0</sub> Q <sub>A0</sub>	Q <sub>Bn</sub> Q <sub>Cn</sub>	Q̄ <sub>Cn</sub>				
H	H	↑	L L	X X X X	L Q <sub>An</sub>						
H	H	↑	H H	X X X X	H						
H	H	↑	H L	X X X X	Q̄ <sub>An</sub> Q <sub>An</sub>	Q <sub>Bn</sub> Q <sub>Cn</sub>	Q̄ <sub>Cn</sub>				

**FUNCTION TABLE**  
H = high level (steady state)  
L = low level (steady state)  
X = irrelevant (any input, including transitions)  
↑ = transition from low to high level.  
a,b,c,d, = the level of steady state input at A,B,C, or D, respectively.  
Q<sub>A0</sub>, Q<sub>B0</sub>, Q<sub>C0</sub>, Q<sub>D0</sub> = the level of Q<sub>A</sub>, Q<sub>B</sub>, Q<sub>C</sub>, or Q<sub>D</sub>, respectively, before the indicated steady state input conditions were established.  
Q<sub>An</sub>, Q<sub>Bn</sub>, Q<sub>Cn</sub> = the level of Q<sub>A</sub>, Q<sub>B</sub>, or Q<sub>C</sub>, respectively, before the most recent transition of the clock.

I.C., 4-BIT PARALLEL ACCESS  
SHIFT REGISTER



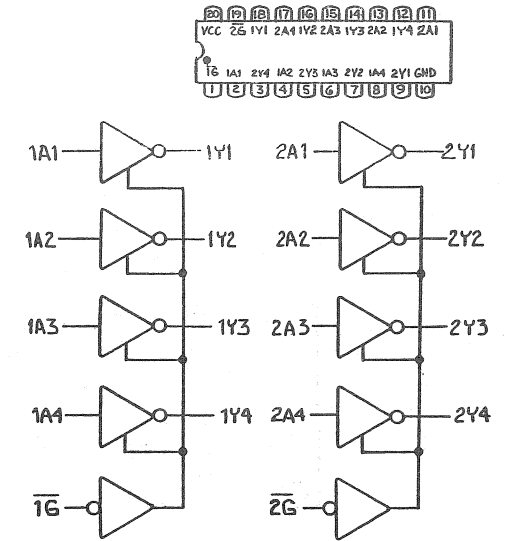
123233-000 SHEET 3 OF 3

FORM 202 (R.8/77)

- NOTES:  
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.  
2. PACKAGE: 20 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-005

VENDOR	VENDOR PART NO.
AMD	SN74S240N
FAIRCHILD	74S240PC
NATIONAL	DM74S240N
T.I.	SN74S240N

123234 -0XX STANDARD PART  
123234 -1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.



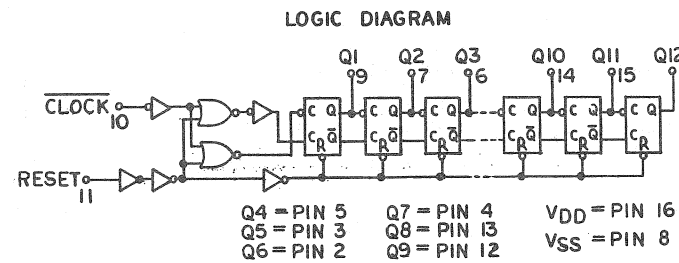
DSC: R PART NUMBER 123234-XXX

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING	TOLERANCES	ANGULAR	MODEL	CODE
A	PROD. REL.	1/29/82		.XX±	±		109
B	ECO 820299	3/30/82		.XXX±	±		
			I.C., OCTAL BUFFER/LINE DRIVER, TRI-STATE OUTPUTS (74S240)				
			DRAWN D. WILSON 1-20-82		123234-000		A
			CHECK Kam Mathraw 1/29/82				
			APPR Jee Kandick 3/30/82		CODE IDENT 52465		SHEET 1 OF 1

FORM 201 (R 11/80)

- NOTES:  
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.  
2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
MOTOROLA	MC14040BCP
NATIONAL	CD4040CN
SGS	HCF4040BE



123235-0XX STANDARD PART  
123235-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

DSC: R PART NUMBER 123235-XXX

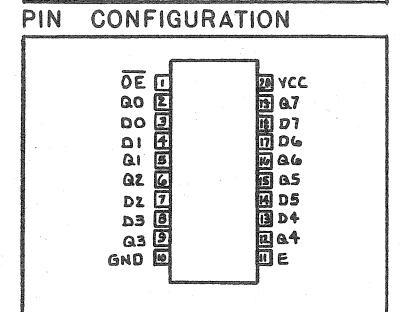
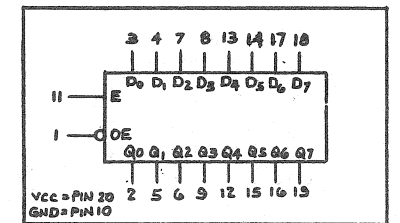
REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING	TOLERANCES	ANGULAR	MODEL	CODE
A	PROD. REL.	1/29/82		.XX±	±		109
B	ECO 12872	3/30/82		.XXX±	±		
			I.C., 12-STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDER (4040)CMOS				
			DRAWN T. LINDMAN 1-29-82		123235-000		B
			CHECK Kam Mathraw 2/1/82				
			APPR Jee Kandick 3/30/82		CODE IDENT 52465		SHEET 1 OF 1

FORM 201 (R 11/80)

- NOTES:  
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.  
2. PACKAGE: 20 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-005

VENDOR	VENDOR PART NO.
NATIONAL	DM74LS373N
AMD	SN74LS373N
T.I.	SN74LS373N
SIGNETICS	N74LS373N
FAIRCHILD	74LS373PC
MOTOROLA	SN74LS373N

123237-0XX STANDARD PART  
123237-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.



DSC: R PART NUMBER 123237-XXX

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING	TOLERANCES	ANGULAR	MODEL	CODE
A	PROD. REL.	1/29/82		.XX±	±		109
B	ECO 12352	3/30/82		.XXX±	±		
			I.C., OCTAL TRANSPARENT LATCH W/3-STATE OUTPUTS (74LS373)				
			DRAWN Baumgarten 1-2-82		123237-000		B
			CHECK Kam Mathraw 2/2/82				
			APPR Jee Kandick 3/30/82		CODE IDENT 52465		SHEET 1 OF 2

FORM 201 (R 11/80)





123240-000

**NOTES:**

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 40 PIN DIP

**PIN CONFIGURATION**

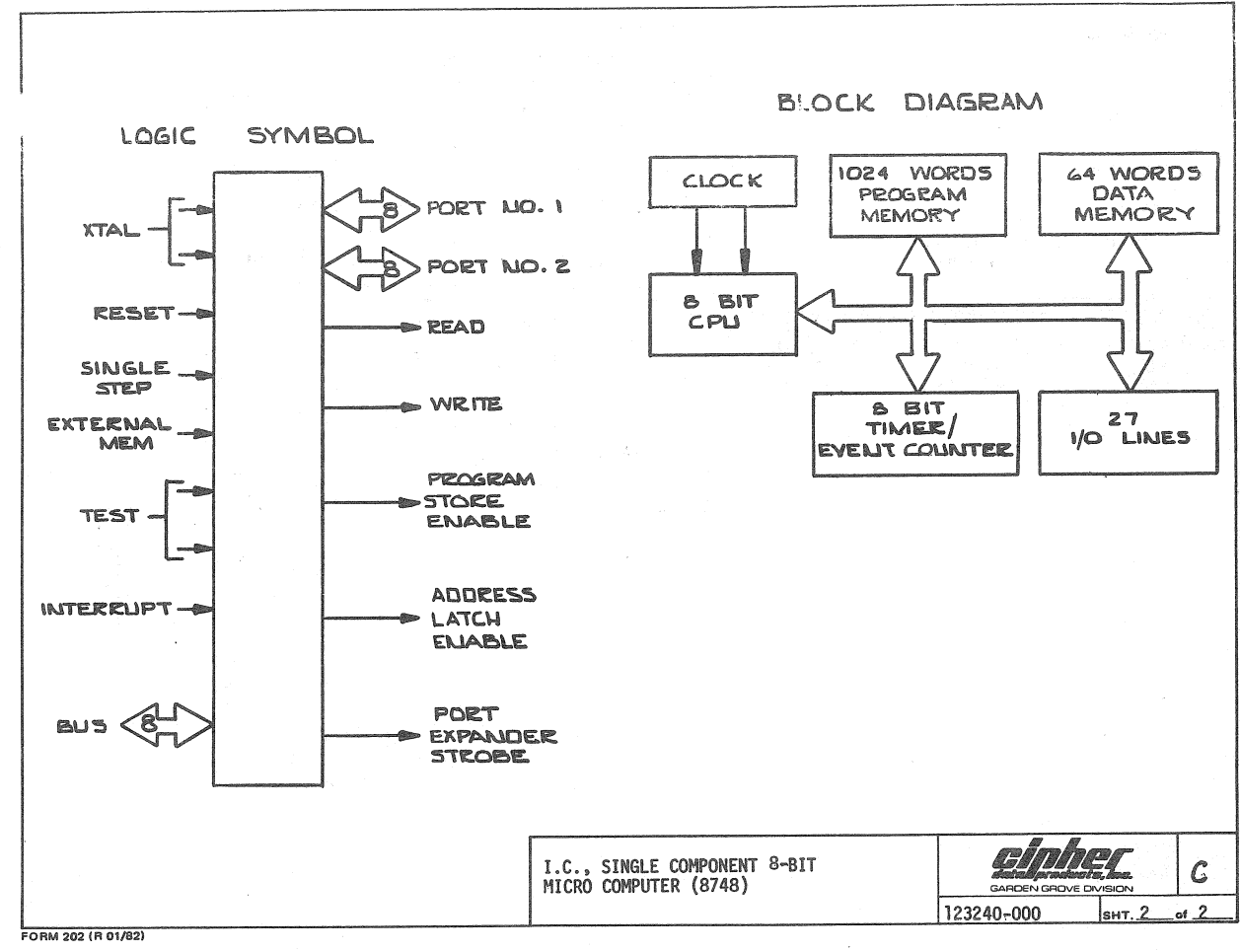
TO	1	40	Vcc
XTAL 1	2	39	T1
XTAL 2	3	38	P27
RESET	4	37	P26
SS	5	36	P25
INT	6	35	P24
EA	7	34	P17
RD	8	33	P16
PSEN	9	M8048	P15
WR	10	M8748	P14
ALE	11	M8055L	P13
DB <sub>0</sub>	12		P12
DB <sub>1</sub>	13		P11
DB <sub>2</sub>	14		P10
DB <sub>3</sub>	15		V <sub>DD</sub>
DB <sub>4</sub>	16		PROG
DB <sub>5</sub>	17		P23
DB <sub>6</sub>	18		P22
DB <sub>7</sub>	19		P21
Vss	20		P20

VENDOR	VENDOR PART NO.
INTEL	D8748
NEC	D8748D

DSC: R PART NUMBER: 123240-001

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING	123240-000		CODE
A	PROD. REL.	5/22/78	TOLERANCES: .XX± ANGULAR .XXX± ±	123240-000		109
B	ECO 12527	8/10/78	MODEL: I.C., SINGLE COMPONENT 8-BIT MICRO COMPUTER (8748)	123240-000		C
C	ECO 12659	8/10/78	NEXT ASSY:	123240-000		C
D	ECO 12659	8/10/78	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	DRAWN: MATTHES 3/1/82	123240-000	C
			CHECK: Sam Makovai 3/2/82	APPR: Jess Kendrick 4/2/82	CODE IDENT: 52465	SHT. 1 of 2

FORM 201 (R 01/82)



125006-000

**NOTES:**

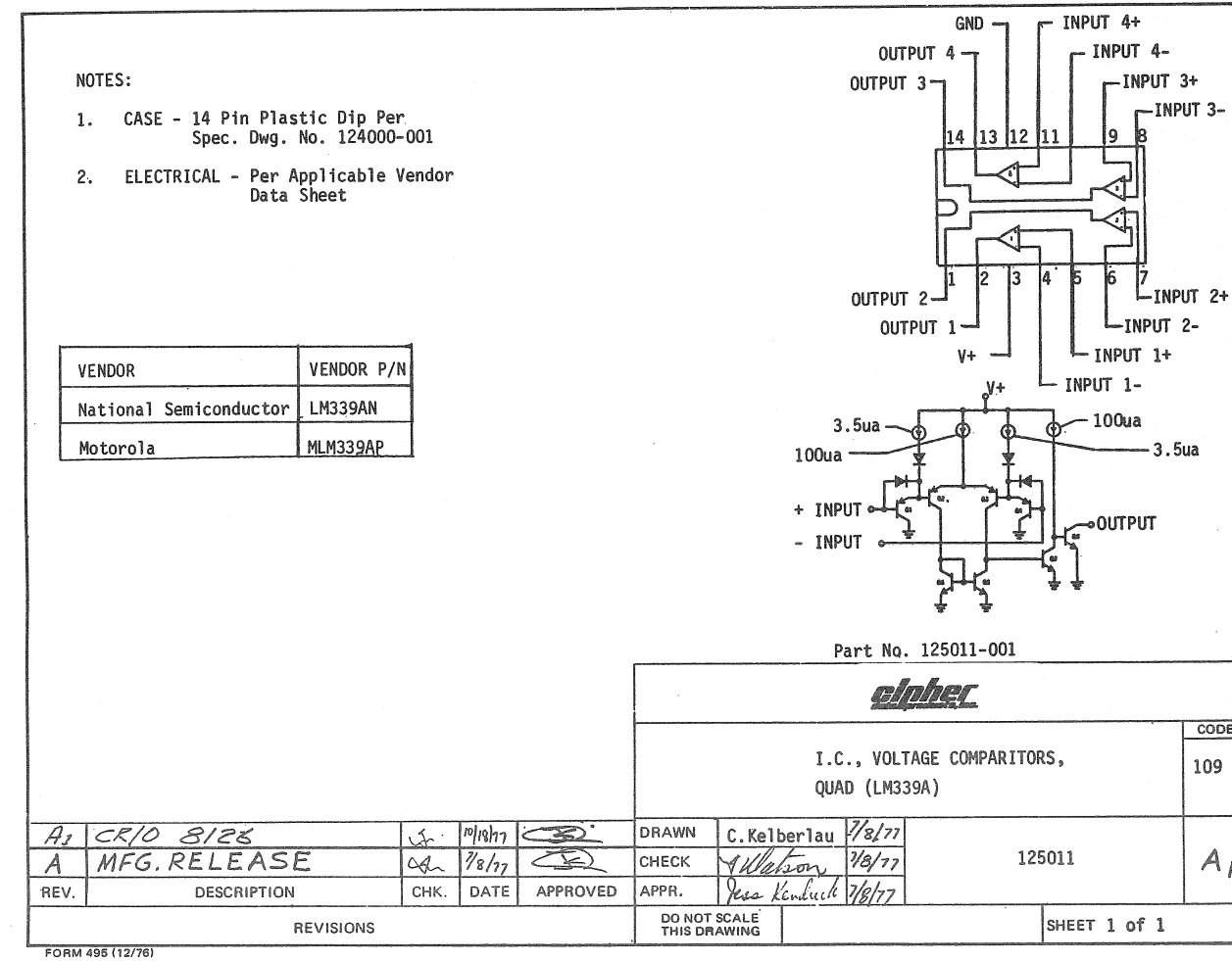
- CASE TYPE: TO-220
- ELECTRICAL: Per Applicable Vendor Data Sheets.

CDP PART NO.	OUTPUT VOLTAGE	FAIRCHILD PART NO.	MOTOROLA PART NO.	TEXAS INSTRUMENT PART NO.	NATIONAL PART NO.	SIGNETICS PART NO.
125006-005	5	JJA 7805UC	MC 7805CT	JJA7805CKC	LM7805CT	JJA7805CU
-006	6	JJA 7806UC	MC 7806CT	JJA7806CKC	LM7806CT	JJA7806CU
-008	8	JJA 7808UC	MC 7808CT	JJA7808CKC	LM7808CT	JJA7808CU
-012	12	JJA 7812UC	MC 7812CT	JJA7812CKC	LM7812CT	JJA7812CU
-015	15	JJA 7815UC	MC 7815CT	JJA7815CKC	LM7815CT	JJA7815CU
-018	18	JJA 7818UC	MC 7818CT	JJA7818CKC	LM7818CT	JJA7818CU

PART NUMBER 125006-XXX SEE TABULATION

REV	DESCRIPTION	APP/DATE	DO NOT SCALE DRAWING	125006-000		CODE
B	CR10 8576	5/22/78	TOLERANCES: .XX± ANGULAR .XXX± ±	125006-000		109
C	ECO 12499	8/10/78	MODEL: I.C., POSITIVE 3 TERMINAL REGULATOR (TO-220 TYPE CASE, 7800 SERIES)	125006-000		D
D	ECO 12499	8/10/78	NEXT ASSY:	125006-000		D
			THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	DRAWN: L. HALE 5/22/78	125006-000	D
			CHECK: V. WATSON 5/22/78	APPR: J. KENDRICK 5/22/78	CODE IDENT: 52465	SHEET 1 OF 1

FORM 201 (R 1/79)

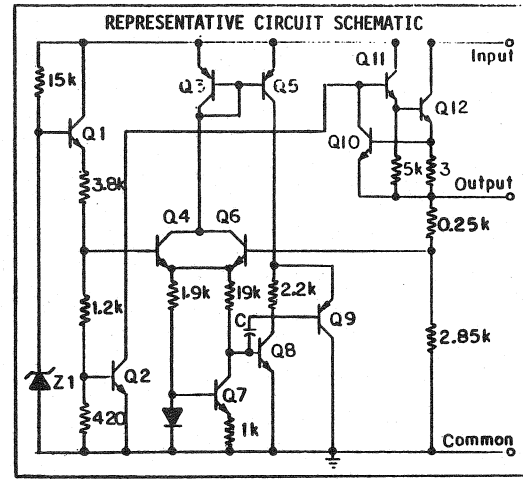


THIS DRAWING CONTAINS PROPRIETARY INFORMATION AND IS UNCLASSIFIED BY DATE 01/11/01 PER PERMITS OF THE COMMERCIAL MEMORY PRODUCTS DIVISION

DESCRIPTION:

1. CASE: TO-92 (JEDEC)
2. ELECTRICAL: Per Applicable Vendor Data Sheets.

P-E P/N	VOLTAGE	MOTOROLA P/N	FAIRCHILD P/N
125017-005	5	MC78L05CP	UA78L05AMC
-012	12	MC78L12CP	UA78L12AMC
-015	15	MC78L15CP	UA78L15AMC



125017-000

P SUFFIX  
CASE 29  
TO-92

- Pin 1. Output  
2. Ground  
3. Input



PART NUMBER 125017-XXX SEE TABULATION

REV	DESCRIPTION	DATE	BY	CHKD	APPD	QTY	UNIT	REMARKS
A	MFG REL	8/26/77						
B	REVISED PER MFG	10/11/79						
C	ECO 10975	11/11/82						

DO NOT SCALE DRAWING		<b>cipher</b> data products, inc.	CODE 109
TOLERANCES			
.XX±	ANGULAR ±		
MODEL		I.C., POSITIVE 3-TERMINAL REGULATOR (78L00CP SERIES)	
NEXT ASSY			
DRAWN	M. R. HOWARD 8/16	125017-000	C
CHECK	J. WATSON 8/26/77		
APPR	J. KENDRICK 8/26/77	CODE IDENT 52465	SHEET 1 OF 1

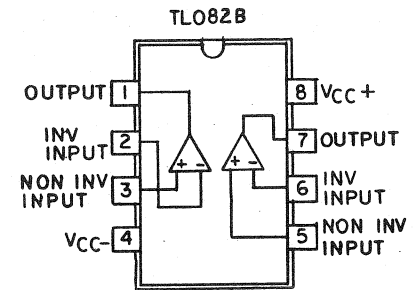
FORM 201 (R 1-78) BISHOP GRAPHICS/ACCUPRESS

125040-000

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
2. PACKAGE: 8 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-003

VENDOR	VENDOR PART NO.
TEXAS INST.	TL082BP
RCA	CA3240E
NATIONAL	LF353N



125040-0XX STANDARD PART

125040-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 125040 -XXX DSC: R

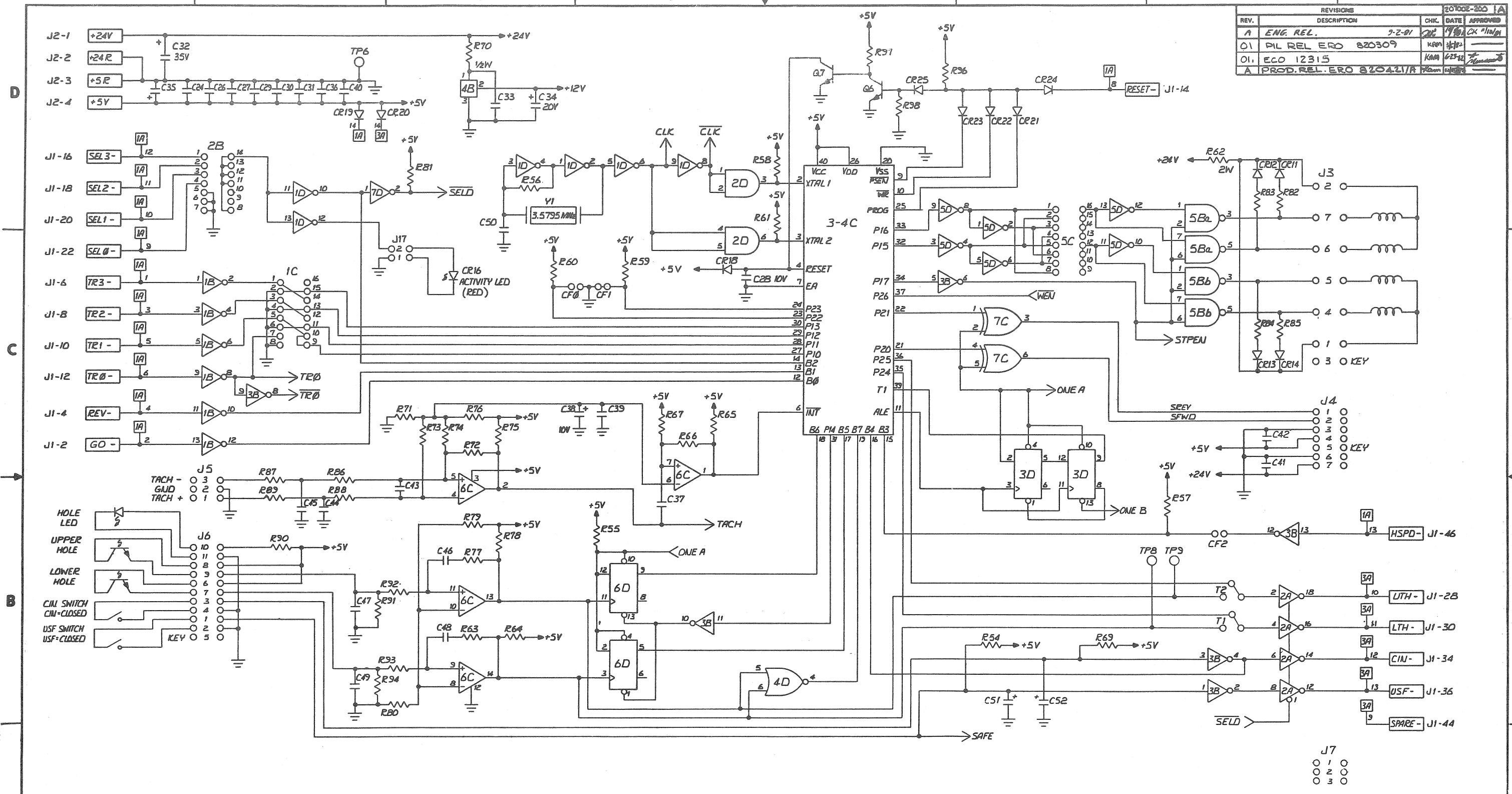
REV	DESCRIPTION	DATE	BY	CHKD	APPD	QTY	UNIT	REMARKS
A	PROD. REL.	8/20/82						

DO NOT SCALE DRAWING		<b>cipher</b> data products, inc.	CODE 109
TOLERANCES			
.XX±	ANGULAR ±		
MODEL		I.C., J-FET INPUT OPERATIONAL AMPLIFIER (TL082B)	
NEXT ASSY			
DRAWN	T. LINDMAN 1-29-82	125040-000	A
CHECK	Kam Makhsous 2/1/82		
APPR	Joe Kendrick 7/30/82	CODE IDENT 52465	SHEET 1 OF 1

FORM 201 (R 11/80)

REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG. REL.	J-2-81	11/11/81	CK #11/81
01	PIL REL ERO 820309	KMM	6/23/81	
01	E.C.O. 12315	KMM	6/23/81	
A	PROD. REL. ERO 820421/A	KMM	11/11/81	



- J7  
 ○ 1 ○  
 ○ 2 ○  
 ○ 3 ○

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1. USE PARTS LIST 207002-001 OR 002.  
 NOTES: UNLESS OTHERWISE SPECIFIED

I C DESIGNATORS								REF DESIGNATORS					
LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND	LAST USED	NGT USED
1A	220/330 TERM	14	7	6C	LM339	3	12	4E	9602	16	8	C52	
2A	74S240	20	10	7C	74LS86	14	7	7E	LM379	-	36B	CR25	CR15, CR17
1B, 3B, 1D, 5D	74LS04	14	7	2D	74LS09	14	7	6E	74LS00	14	7	L10	
4B	MATHEUR/MC	-	3	3D, 6D, 5E	74LS74	14	7	5F, 7F	NE552A	2, 5, 6, 9, 13	-	R38	R68
5Ba, 5Bb	75452B	8	4	4D	74LS02	14	7	2E	QT 2905	-	-	TP9	
3-4C	8048	40, 26	20, 7	7D	7406	14	7	3A	220/330 TERM	16	8	41	
				2G	75451B	8	4					Q7	

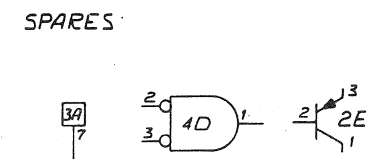
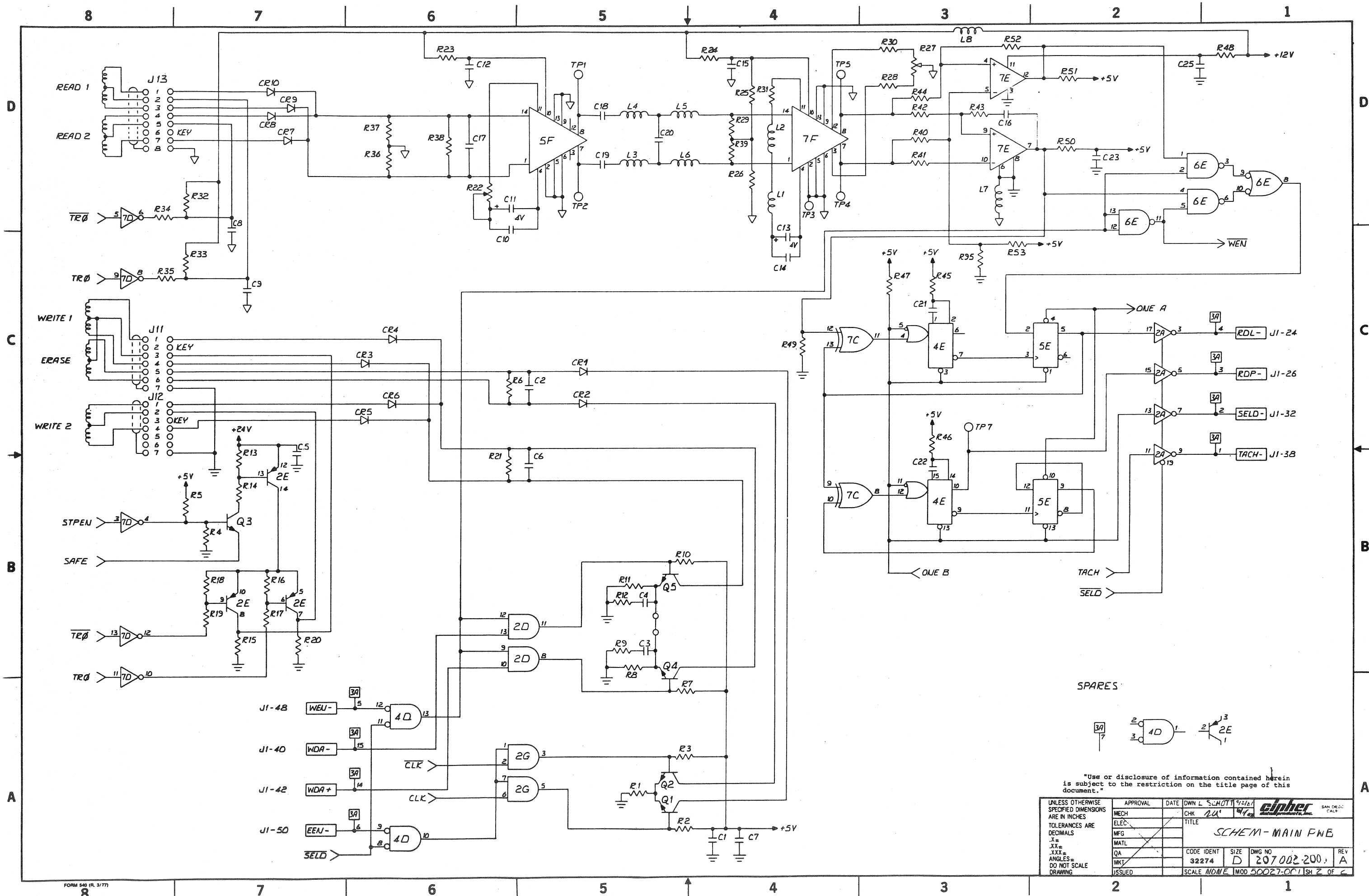
DESC: R

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE DECIMALS  
 1/16" ± .005  
 3/32" ± .005  
 1/8" ± .005  
 1/4" ± .005  
 3/8" ± .005  
 1/2" ± .005  
 3/4" ± .005  
 1" ± .005  
 1 1/4" ± .005  
 1 1/2" ± .005  
 2" ± .005  
 3" ± .005  
 4" ± .005  
 5" ± .005  
 6" ± .005  
 8" ± .005  
 10" ± .005  
 12" ± .005  
 15" ± .005  
 20" ± .005  
 25" ± .005  
 30" ± .005  
 40" ± .005  
 50" ± .005  
 60" ± .005  
 80" ± .005  
 100" ± .005

APPROVAL: [Signature] DATE: 11-11-81  
 MECH: [Signature] DATE: 11-12-81  
 ELEC: [Signature] DATE: 11-13-81  
 MFG: [Signature] DATE: 11-13-81  
 MATL: [Signature] DATE: 11-13-81  
 QA: [Signature] DATE: 11-13-81  
 MGT: [Signature] DATE: 11-13-81  
 ISSUED: [Signature] DATE: 11-13-81

OWN: L. SCHOTT  
 DATE: 11-12-81  
 CHK: JLN  
 TITLE: SCHEM-MAIN PWB  
 CODE IDENT: 92274  
 SIZE: D  
 DWG NO: 207002-200  
 REV: A  
 SCALE: NONE  
 MOD: 50027-001 SH 1 OF 2

13. 7 6 5 4 3 2 1



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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE DECIMALS .X = .XX = .XXX = ANGLES = DO NOT SCALE DRAWING	APPROVAL	DATE	DWN L SCHOTT 9/21/61	
MECH	CHK	1A	9/1/61	
ELEC	TITLE	SCHEM-MAIN PWB		SCALE NONE
MFG	CODE IDENT	SIZE	DWG NO	REV
MATL	32274	D	207002-200	A
QA	ISSUED	MOD	50027-001	SH 2 OF 2

8

7

6

5

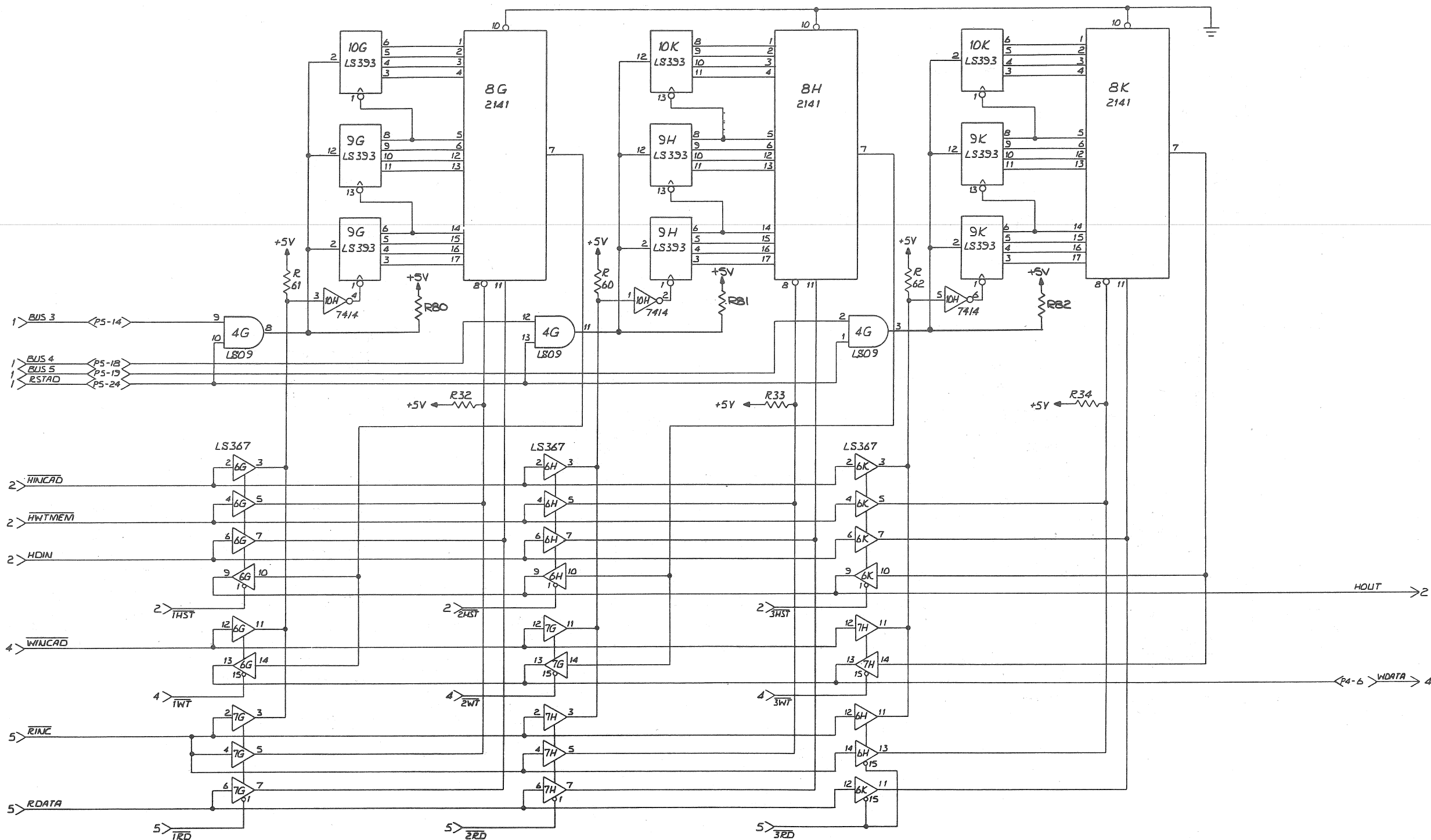
4

3

2

1

BUFFER MEMORIES



15.

FORM 500 (R. 3/77)

8

7

6

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4

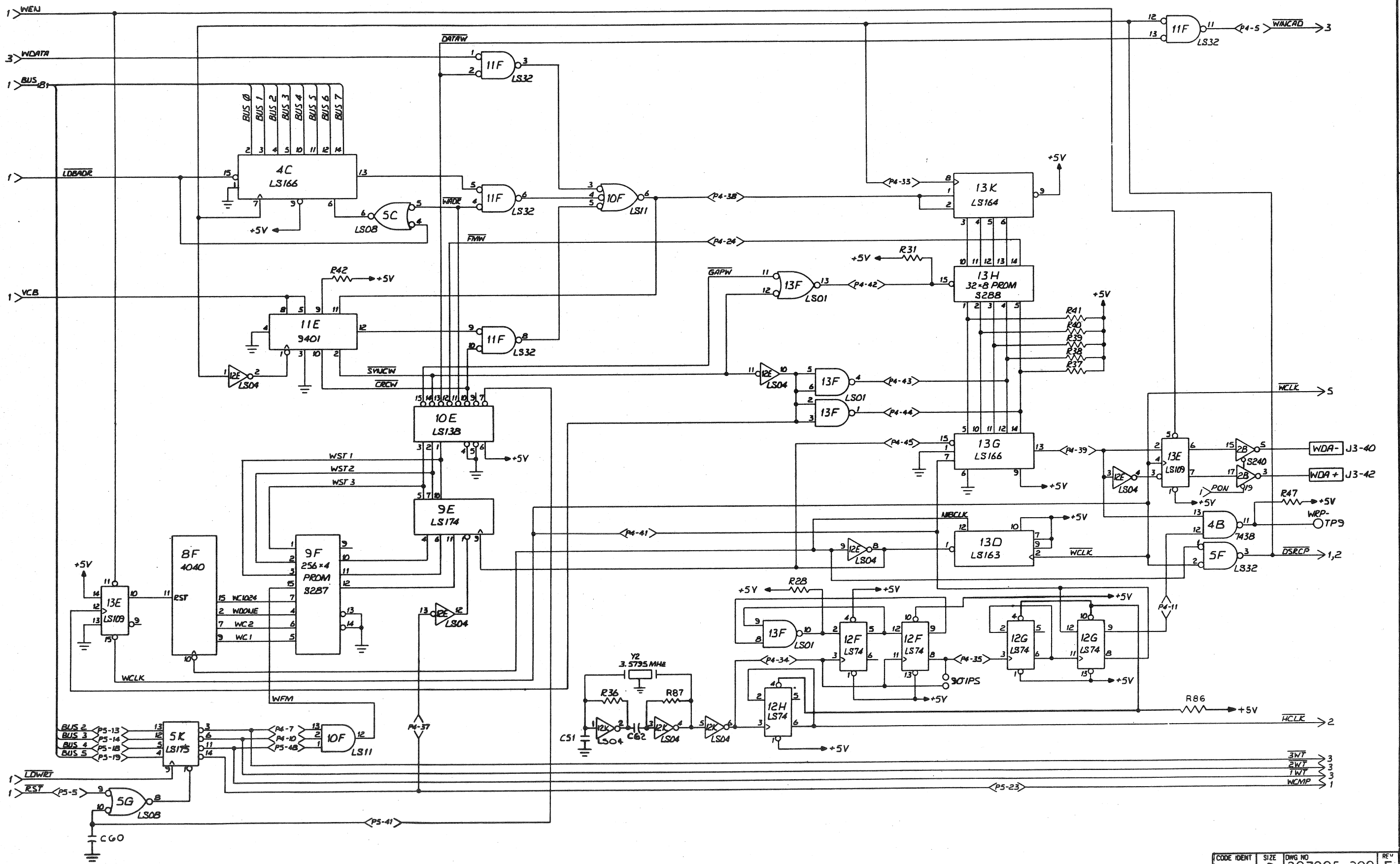
3

2

CODE IDENT	SIZE	DWG NO	REV
32274	D	207005-200	F
SCALE	MOD	SH	OF
1	360601-300	3	2

1 360601-300

WRITE LOGIC



CODE IDENT	SIZE	DWG NO	REV
32274	D	207005-200	F
SCALE / DATE / MOD		SH 4 OF 5	

1360601-300



8

7

6

5

4

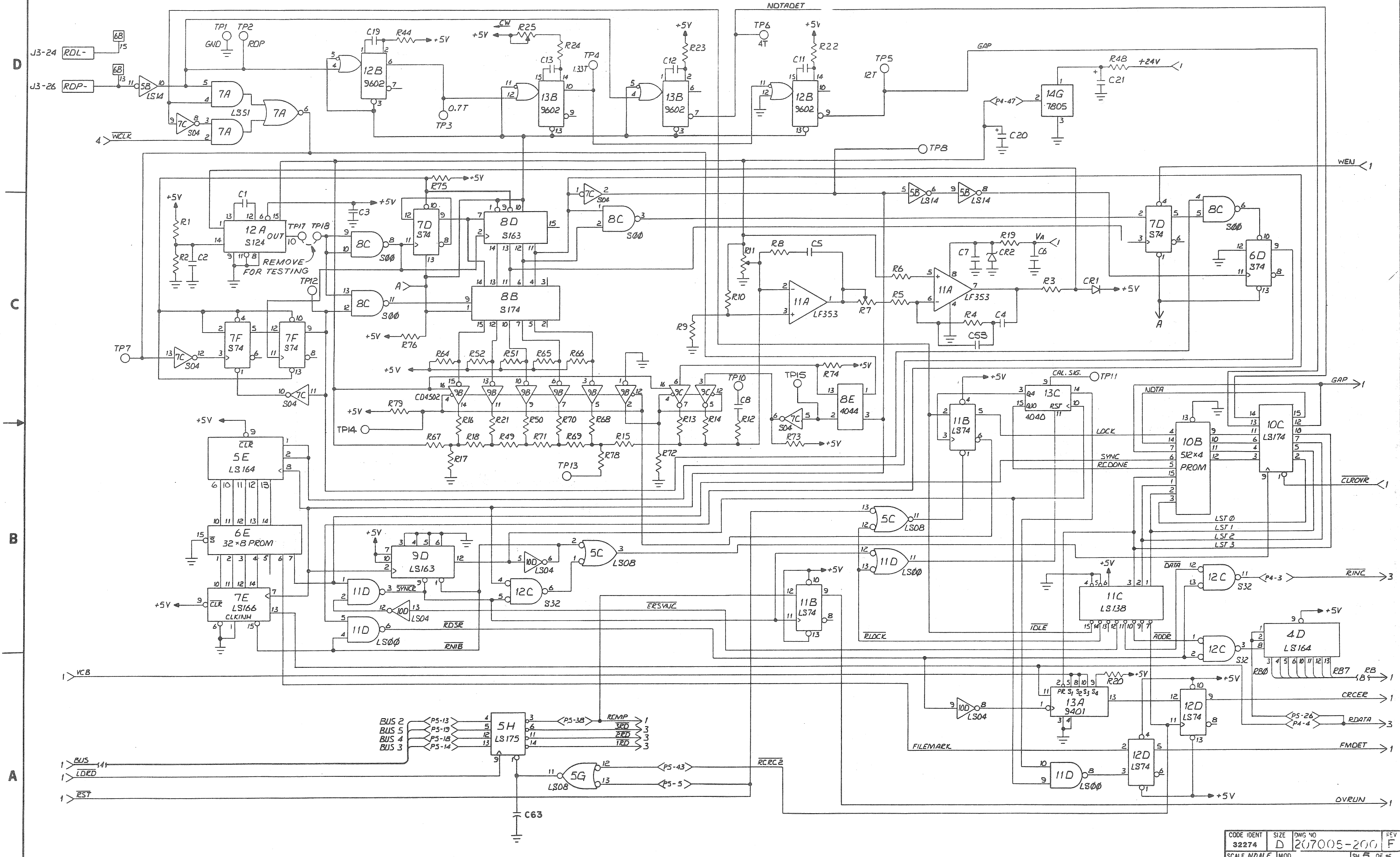
3

2

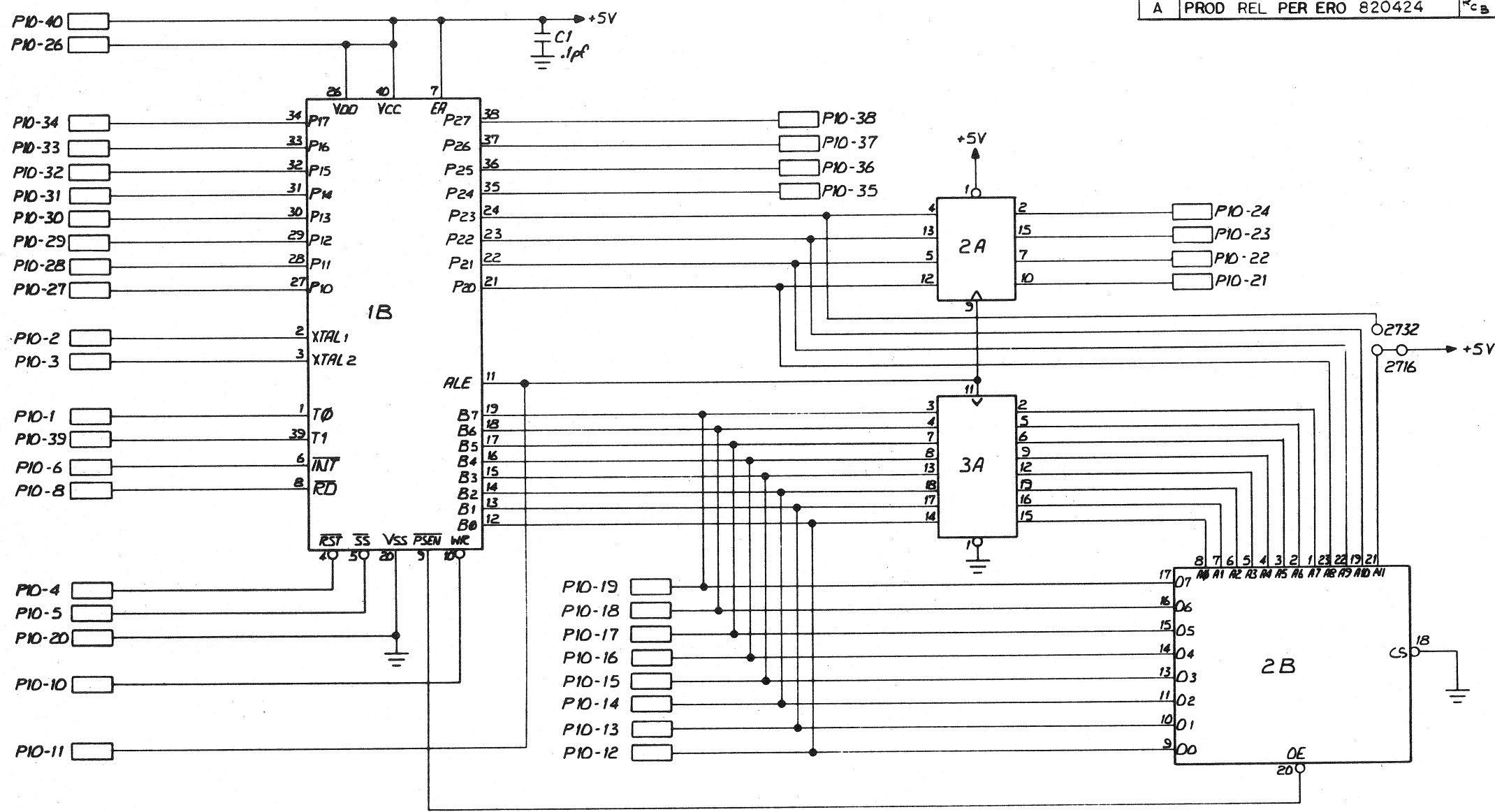
1

READ LOGIC

NDTADET



REVISIONS				207011-200	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL 8-30-81	ZVD	9/1/81	CA 11/3/81	
O1	PIL REL ERO 82030A	KAM	3/5/82		
O1	ECO 12442	KAM	9/21/81	R. Parker	
O12	ECO 12505	Jax	9/21/81	R. Parker	
A	PROD REL PER ERO 820424	ECB	12/81		



IC DESIGNATORS				REF DESIGNATORS	
LOCATION	TYPE	PWR	GND	LAST USED	NOT USED
1B	8035	7,26,40	20	C1	
2B	2716/2732	24	12,18		
2A	74LS175	1,16	8		
3A	74LS373	20	1,10		

D & D MGR	W. Jordan	8-11-81
ME MGR	W. Jordan	8-12-81
DOC MGR	W. Jordan	11-12-81
UL/CSA	W. Jordan	11/1/81

DSC: R

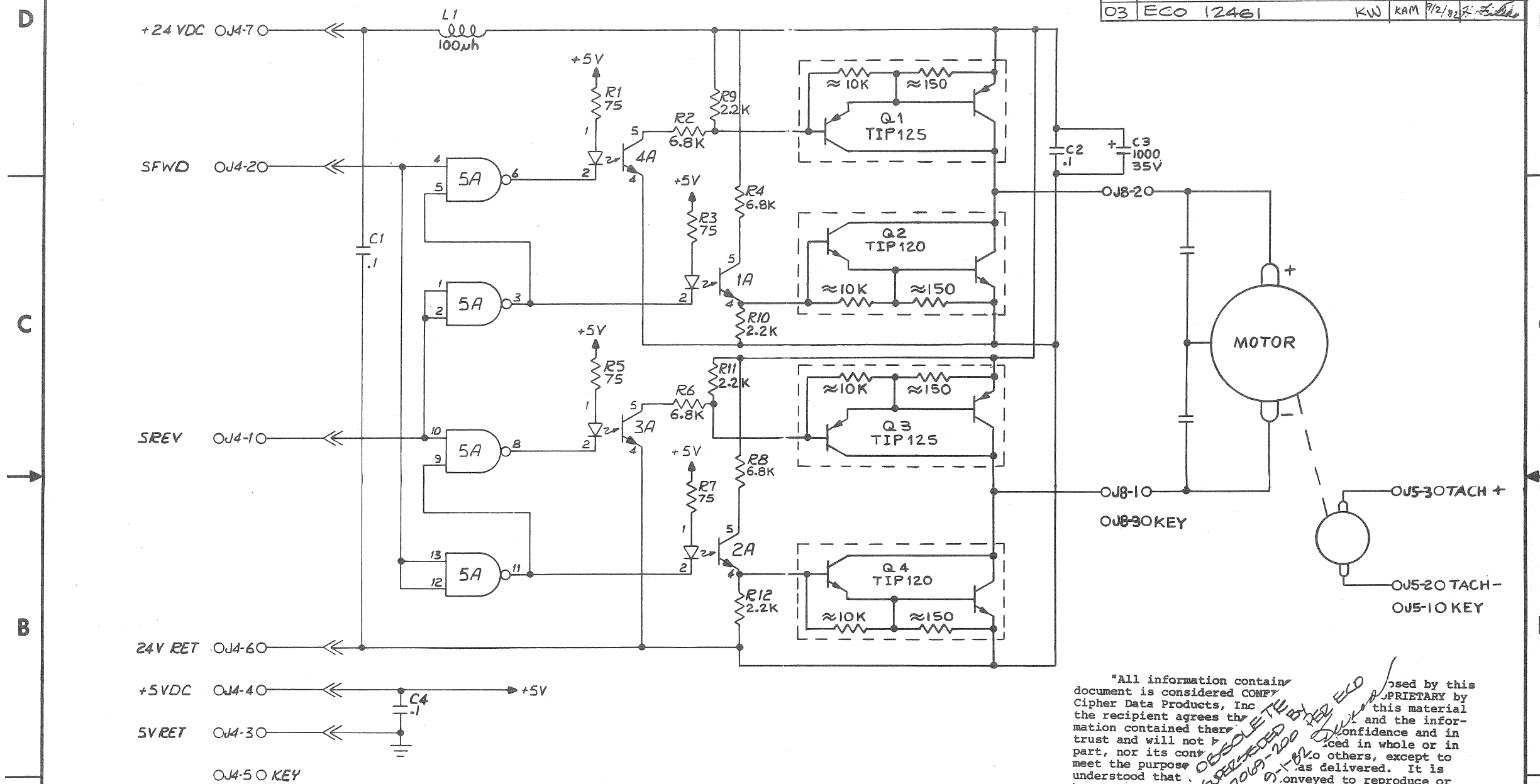
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TOLERANCES ARE DECIMALS		.X =		.XX =		.XXX =		ANGLES =		DO NOT SCALE DRAWING	
APPROVAL	DATE	DWN L. SCHOTT	8/30/81	MECH	W. Jordan	11/18/81	CHK	ZVD	9/1/81	TITLE			32274
ELEC										SCHEM-MICROCOMPUTER EXPANDER, PWB (VERSION 2)			REV
MFG										MATERIAL			SIZE
QA										CODE IDENT			DWG NO
MKT										ISSUED			SCALE
										MOD 40041-001 SH 1 OF 1			1 360601-303

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NOTES: UNLESS OTHERWISE SPECIFIED



REVISIONS				207017-200 13	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL		8-29-81		
01	PIL REL ECO 820309	KAM	3/5/82		
02	ECO 12179	HS	4/27/82		
03	ECO 12461	KW	7/2/82		



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D & D MGR	11/11/81
ME MGR	11/12/81
DOC MGR	11/12/81
UL/CSA	11/11/81

**HISTORICAL RECORD**  
DO NOT DESTROY  
Q-10B

DSC: 7

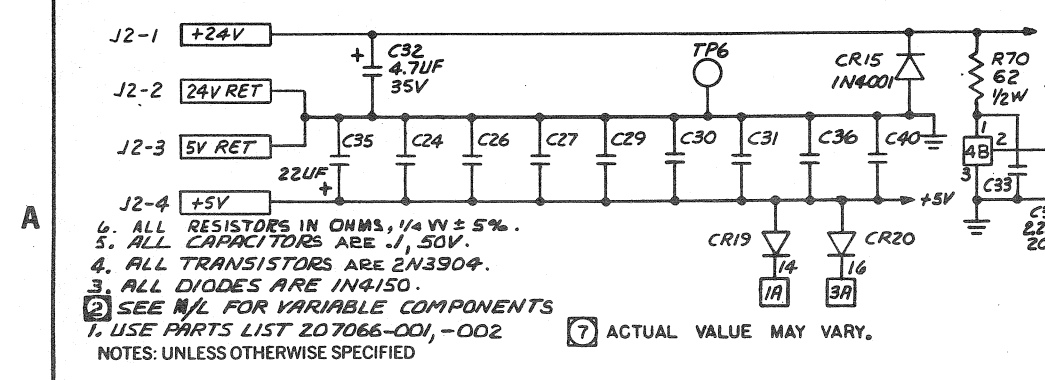
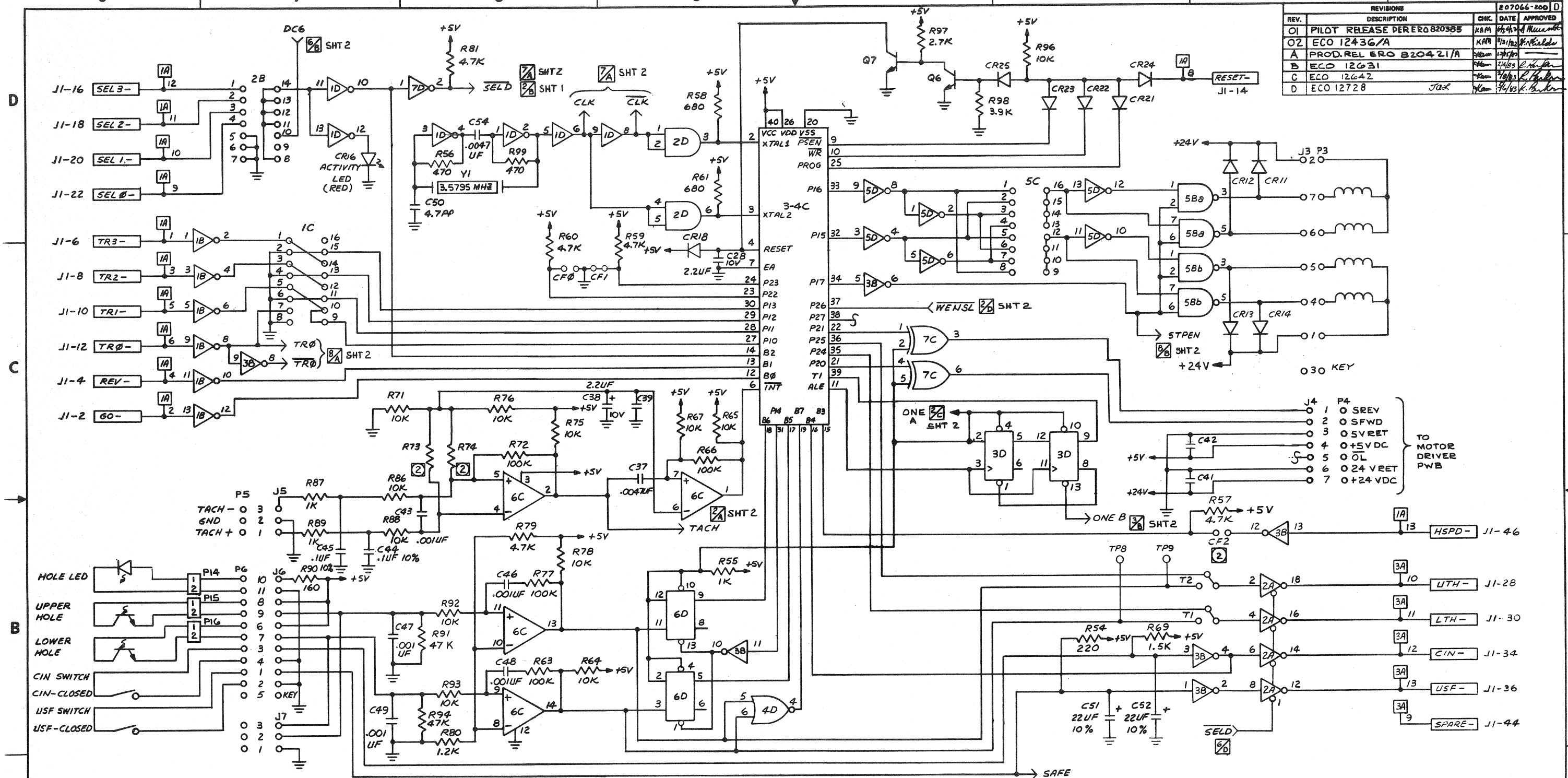
APPROVAL	DATE	DWN L. SCHOTT	8/25/81	
MECH	11/18/81	CHK	7/10	
ELEC	10/15/81	TITLE		
MFG	30/08/81			
MATL				
QA	11/18/81	CODE IDENT	32274	
MKT	11/12/81	SIZE	C	
ISSUED	11/12/81	DWG NO	207017-200	
		REV	03	
		SCALE	NONE	
		MOD	40012-001	
		SH	1 OF 1	

IC DESIGNATORS				REF DESIGNATORS	
LOCATION	TYPE	PWR	GRID	LAST USED	NOT USED
1A, 2A, 3A, 4A	4N2B	-	-	C4	
5A	743B	14	7	L2	
				R12	
				Q4	

2. ALL CAPACITORS IN MICROFARADS.  
1. ALL RESISTORS IN OHMS, 1/4W, 5%  
NOTES: UNLESS OTHERWISE SPECIFIED

FORM 380 (R. 10/77)

REV.	DESCRIPTION	CHK.	DATE	APPROVED
O1	PILOT RELEASE DER ERO B20385	KAM	4/2/82	[Signature]
O2	ECO 12436/A	KAM	4/11/82	[Signature]
A	PROD. REL. ERO B20421/A	[Signature]	4/15/82	[Signature]
B	ECO 12631	[Signature]	4/15/82	[Signature]
C	ECO 12642	[Signature]	4/15/82	[Signature]
D	ECO 12728	Jax	4/15/82	[Signature]



I.C. DESIGNATORS				REF DESIGNATORS			
LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND
1A	1801390 TERN	14	7	6C	LM339	3	12
2A	74LS240	20	10	7C	74LS86	14	7
1B, 3B, 12, 5D	74LS04	14	7	2D	74LS09	14	7
4B	7470LS15MC	3	3D, 6D, 5E	74LS74	14	7	5F, 7F
5Ba, 5Bb	75452B	8	4	4D	74LS02	14	7
3-4C	804B	20, 26	7D	7406	14	7	3A
2G	75451B	8	4				

NOTES UNLESS SPECIFIED			
1.	TOLERANCES	XX ±	ANGULAR
2.	BREAK ALL SHARP EDGES APPROX. .010		
3.	MACH. SURFACES		
4.	ALL DIMS IN INCHES.		
5.	DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		

PART NUMBER

W. Reynolds 4-28-82  
 Van Marrewijk 6/3/82  
 H.L. Field 6/24/82

**52465**

SCALE: D SIZE: 207066-200

MODEL No. 0420-30190

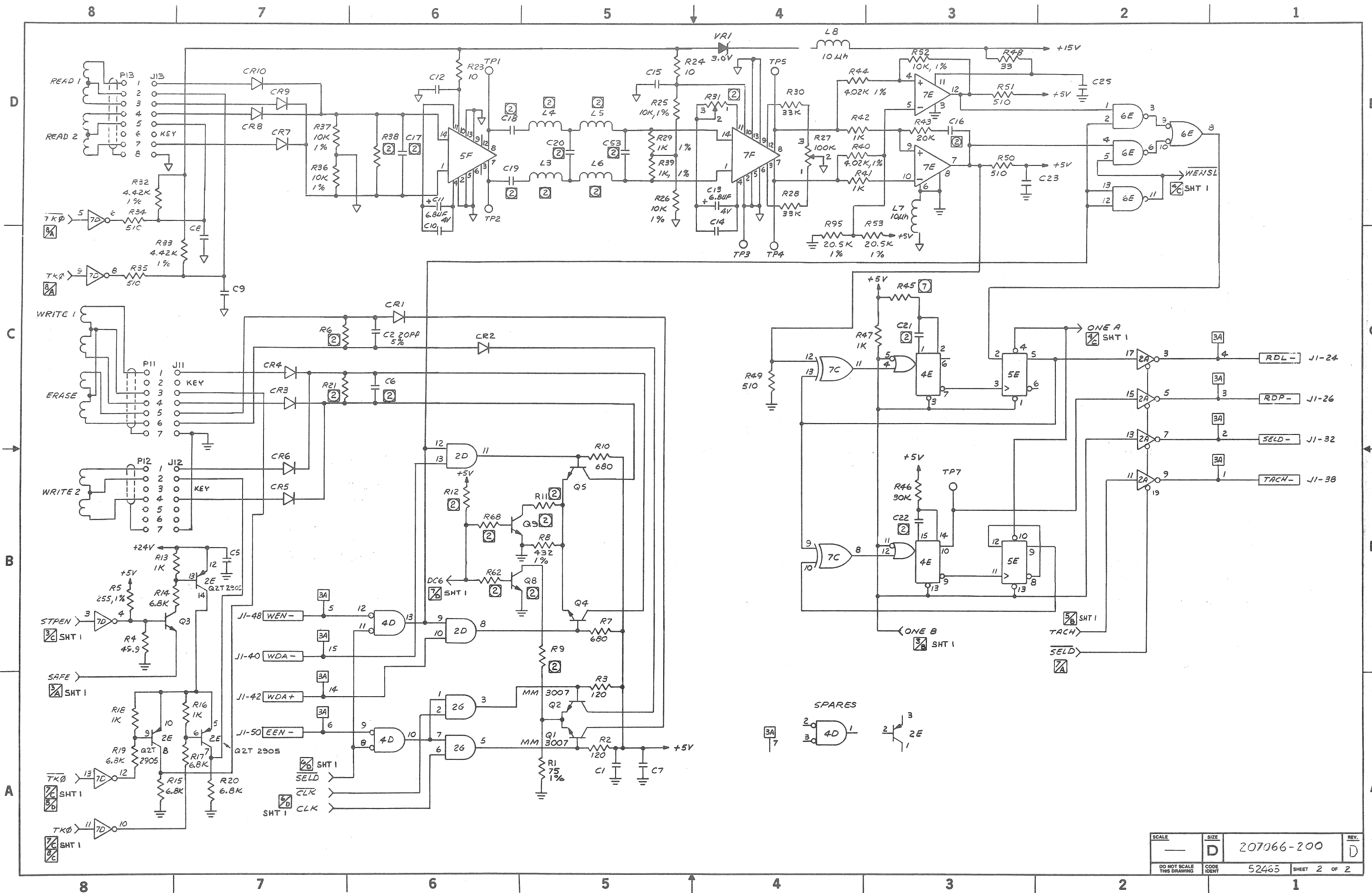
FINISH: [Blank]

CODE: 108

REV: D

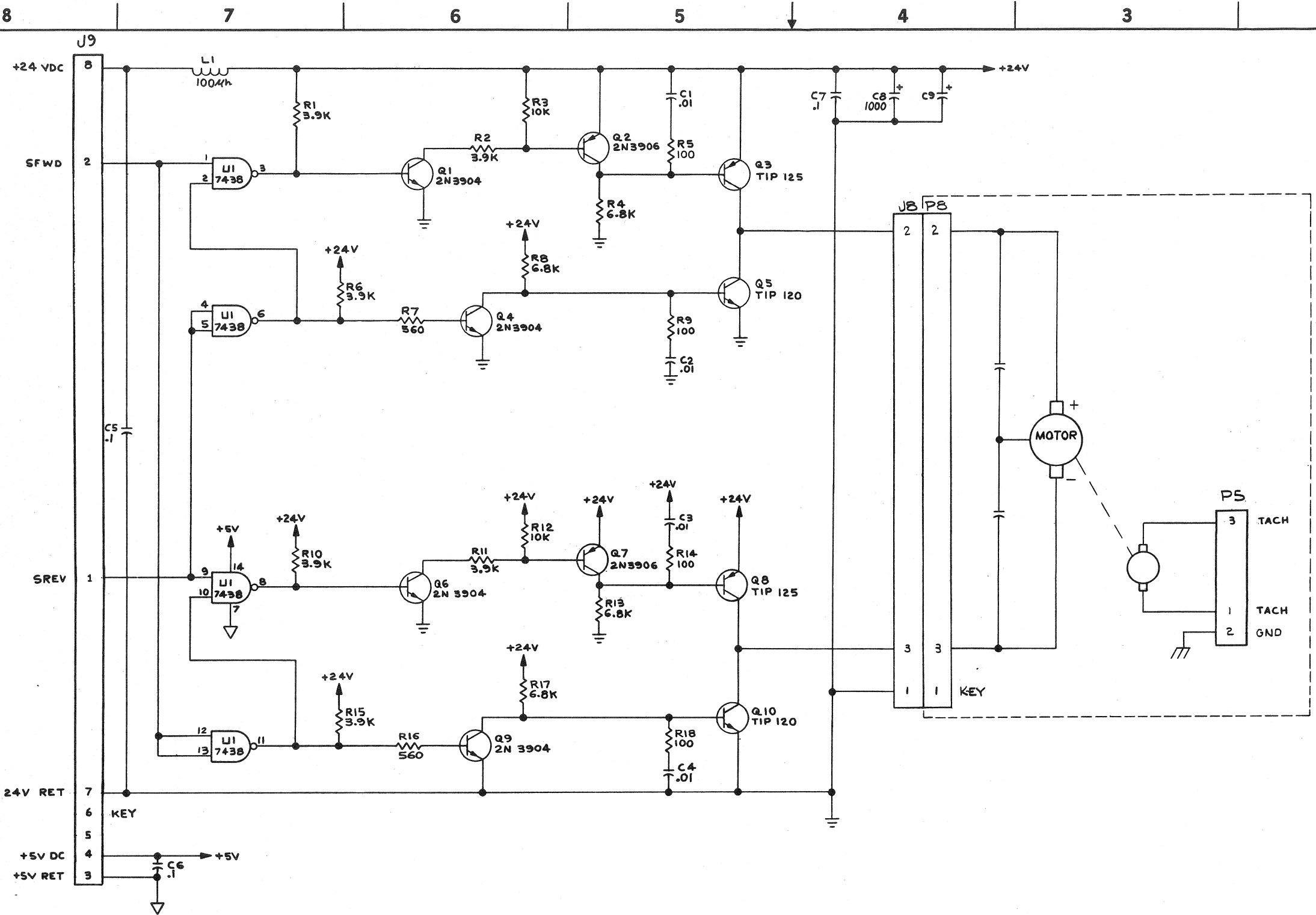
SHEET 1 OF 2

- 6. ALL RESISTORS IN OHMS, 1/4 W ± 5%.
  - 5. ALL CAPACITORS ARE .1, .50V.
  - 4. ALL TRANSISTORS ARE 2N3904.
  - 3. ALL DIODES ARE IN4150.
  - 2. SEE M/L FOR VARIABLE COMPONENTS
  - 1. USE PARTS LIST 207066-001, -002
- NOTES: UNLESS OTHERWISE SPECIFIED
- ACTUAL VALUE MAY VARY.



SCALE	SIZE	REV.
	D	D
DO NOT SCALE THIS DRAWING	CODE IDENT	
	52465	
	SHEET 2 OF 2	

REVISIONS				207069-200	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILCT PEL PER ERO 820561	KW	5-11-81		
02	ECO 12382	JAX	4/13/82		
A	PROD. REL ERO 820421/A	JBM	12/82		
B	ECO 12592	JBM	2-1-83		



HISTORICAL RECORD  
DO NOT DESTROY

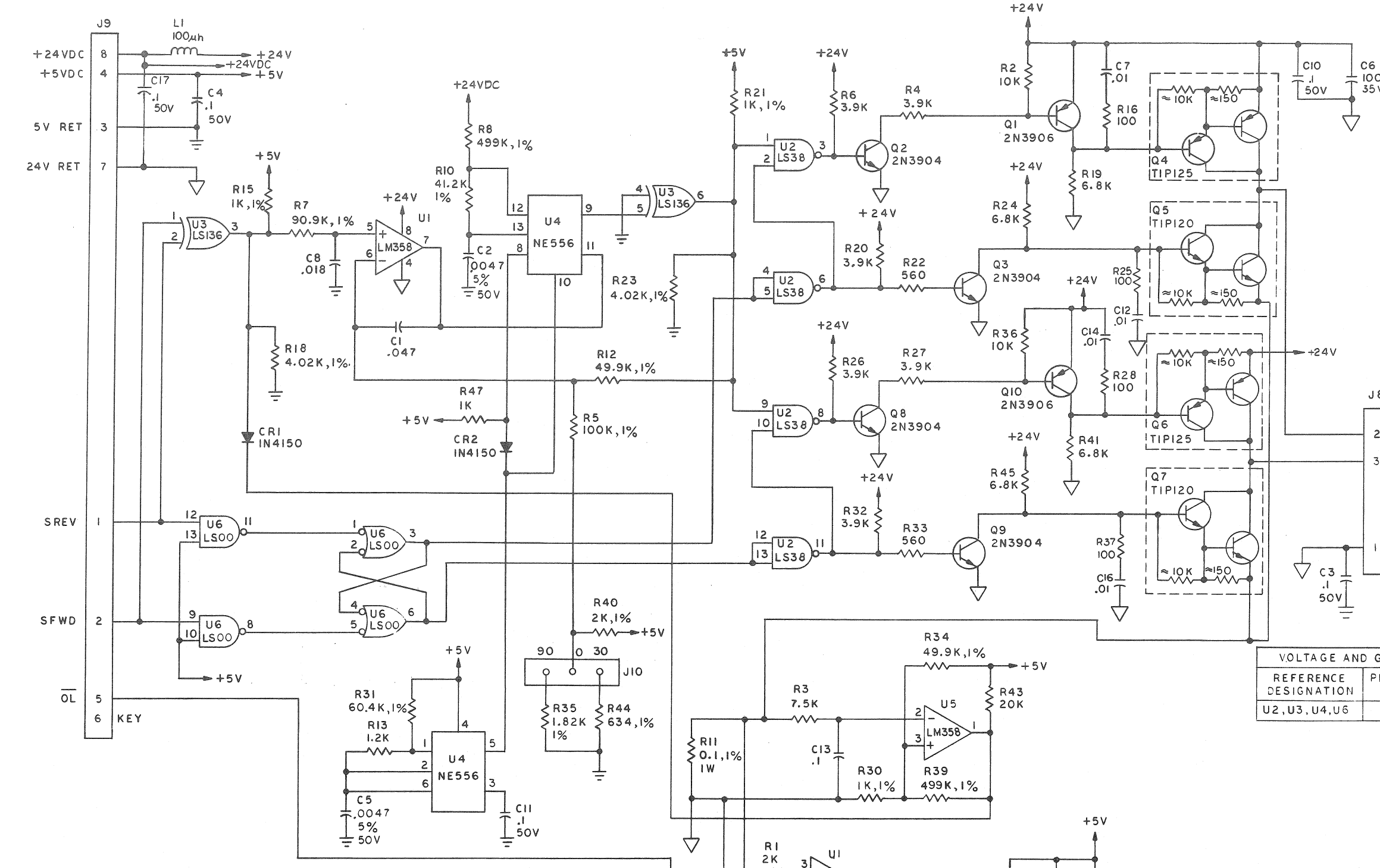
OBsolete  
REPLACED BY: 20707-200  
CR/O #: 12592  
DATE: 2-1-83

2. ALL CAPACITOR VALUES ARE IN MICROFARADS.  
1. ALL RESISTOR VALUES ARE IN OHMS ±5%, 1/4W  
NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207069-200

NOTES UNLESS SPECIFIED 1. TOLERANCES XX = ANGULAR XXX = 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN: Howard H. Smith 4/5/82 CHECK: K. M. Mahan 4/6/82 APPR: J. L. Field 5/13/82		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.		
	MATERIAL:		SCHEMATIC		CODE: Q108
	FINISH:		PWB, MOTOR DRIVER		REV. 3
	MODEL No. QUARTERBACK		SCALE: NONE	SIZE: D	207069-200
	NEXT ASSY: 207358 & 207359		DO NOT SCALE THIS DRAWING	CODE IDENT: 52465	SHEET 1 OF 1

REVISIONS				207076-200
REV.	DESCRIPTION	CHK.	DATE	APPROVED
X1				
01	PILOT REL PER ERC 800448	KAM		
A	PROD. REL PER ERC 820448	PLM		
B	ECO 12738	PLM		



VOLTAGE AND GROUND TABLE

REFERENCE DESIGNATION	PIN NC. +5V	PIN NC. GND
U2,U3,U4,U6	14	7

2. ALL CAPACITOR VALUES IN MICROFARADS ±10%, 100VDC  
 1. ALL RESISTOR VALUES IN OHMS ±5%, 1/4 W  
 NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207076-200

NOTES UNLESS SPECIFIED	DRAWN T. LIIMATI 7-21-82	 Garden Grove Division	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE REPRODUCED OR IN PART, BE DUPLICATED, COPIED, CLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.
1. TOLERANCES .XX± ANGULAR .XXX± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	CHECK 98m Makhari 10/5/82 APPR. R. B. Baker 10/21/82 MATERIAL FINISH MODEL No. QUARTERBACK NEXT ASSY		

SECTION 2

ASSEMBLY DRAWINGS

2.1 INTRODUCTION

This section contains the assembly drawings and material lists for all the assemblies in the Quarterback Tape Drive. These documents are listed in paragraph 2.2. Logic schematics are provided in Section 1 of this Engineering Drawing Package.

The assembly drawings identify every part on any given assembly. Parts are identified either by item number; (e.g., 1, 2, 3, etc.) or by circuit reference number (e.g., R1, C1, U1, etc.). The associated material lists incorporate these identification numbers, together with part description, Cipher part number, and part quantity, i.e., the quantity of a particular part required for a given assembly.

2.2 ASSEMBLY DRAWINGS

The following assembly drawings are provided in numerical sequence, as listed. Included are related material lists.

	Dwg. No.
Assembly, Main PWB . . . . .	.207002-100
Assembly, Controller . . . . .	.207005-100
Assembly, Microcomputer Expander PWB . . . . .	.207011-100
Assembly, Motor Driver PWB . . . . .	.207017-100
Assembly, Main PWB . . . . .	.207066-100
Assembly, Motor Driver PWB . . . . .	.207069-100
Assembly, Diode/Slow Speed Motor Kit 30 lps . . . . .	.207072-100
Assembly, Cable-Motor Driver PWB . . . . .	.207073-100
Assembly, Motor Driver PWB . . . . .	.207076-100
Outline Drawing, Basic Cartridge Tape Drive . . . . .	.207302-001
Outline Drawing, Intelligent Cartridge Tape Drive . . . . .	.207303-001
Assembly, Main Frame . . . . .	.207304-100
Assembly, Drive Motor . . . . .	.207314-100
Assembly, Sensor . . . . .	.207324-100
Assembly, Sensor Harness . . . . .	.207326-100
Assembly, Carriage . . . . .	.207329-100
Pictorial, MTT F420 . . . . .	.207350-100
Pictorial, MTT 0420 . . . . .	.207358-100
Assembly, Main Frame . . . . .	.207393-100
Assembly, Ground Strap Cable . . . . .	.207394-100

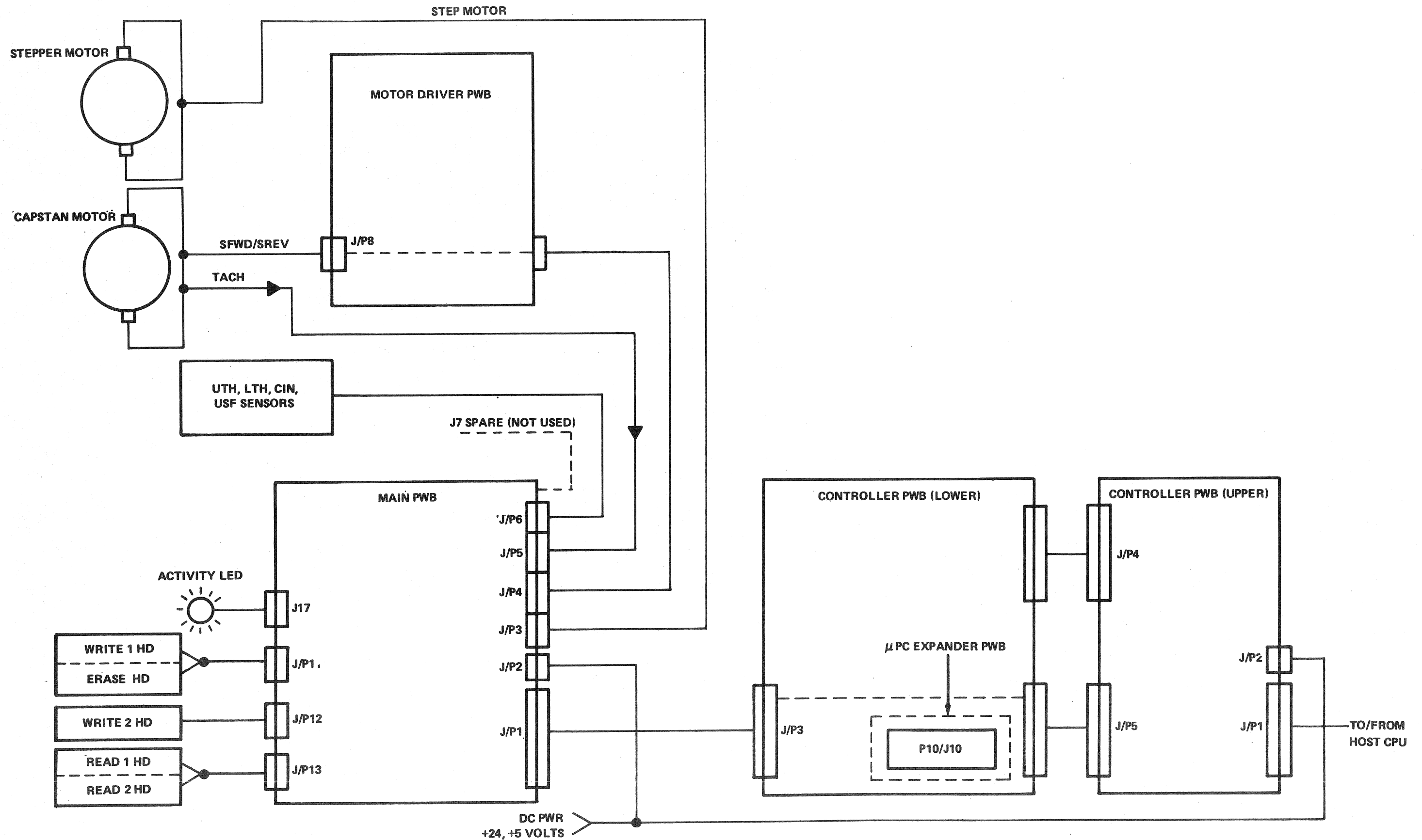


FIGURE 2-1. QUARTERBACK INTELLIGENT TAPE DRIVE, INTERCONNECT DIAGRAM



8

7

6

5

4

3

2

1

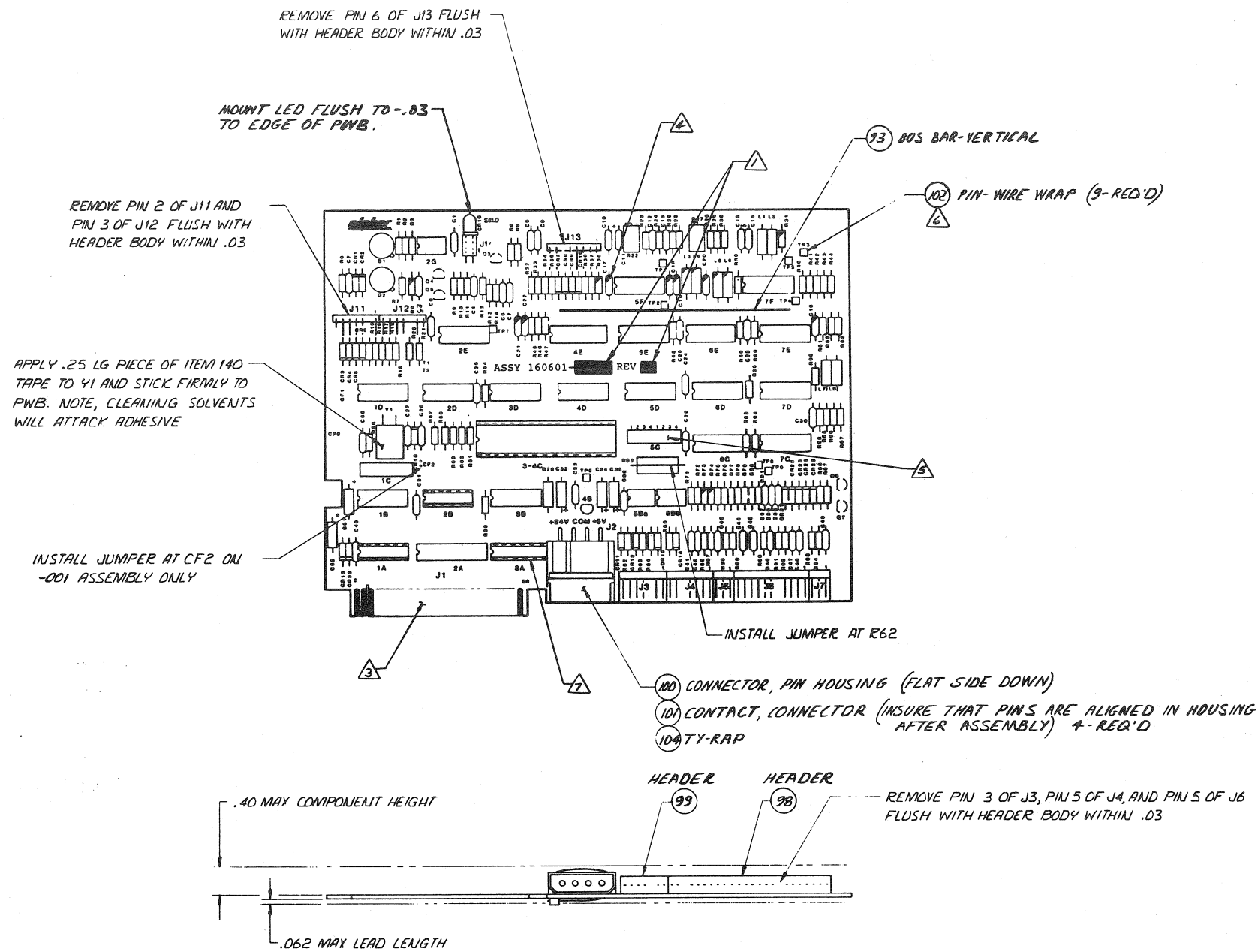
REVISIONS				207002-100	
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	ZVS	11/18/81	CK	11/18/81
O1	PIL REL ERO 820309	KAM	3/5/82		
O2	ECO 12315	KAM			
A	PROD. REL ERO 820421/A	KAM	12/1/82		

D

C

B

A



- ▲ INSTALL COMPONENTS 1A, 3A, 2B, AND 3-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
- ▲ PRESS TEST POINT PINS INTO PWB PRIOR TO FLOW SOLDERING
- ▲ INSTALL ITEM 103 JUMPER CLIPS ON PIN SETS 1 OF HEADER 5C
- ▲ COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSY VERSION
- ▲ MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- 2. FOR SCHEMATIC REFER TO DWG 207002-200
- ▲ MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 IN. HIGH WHITE CHARACTERS PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NO. SEE SEPARATE M/L

D & D MGR	11/18/81
ME MGR	11/18/81
DOC MGR	11/18/81
UL/CSA	

DSC: R

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APPROVAL	DATE	OWN	L	SCHOTT	9/2/81	
MECH	11/21/81	CHK	ZVS	11/18/81		
ELEC	11/18/81	TITLE	ASSY, PWB-MAIN			
MFG	11/18/81	CODE IDENT	32274	SIZE	D	DWG NO
QA	11/18/81	ISSUED	11/18/81	SCALE	1:1	MOD
MKT	11/18/81	DO NOT SCALE DRAWING				

8

7

6

5

4

3

2

1





ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207002 - 001 REV B

ASSEMBLY TITLE ASSY, PWB - MAIN - 30 IPS DSC:R DOC CODE Q 120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes a revision table at the bottom.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207002 - 001 REV B

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207002 - 001 REV B

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207002 - 001 REV B

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207002 - 001 REV B

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE.

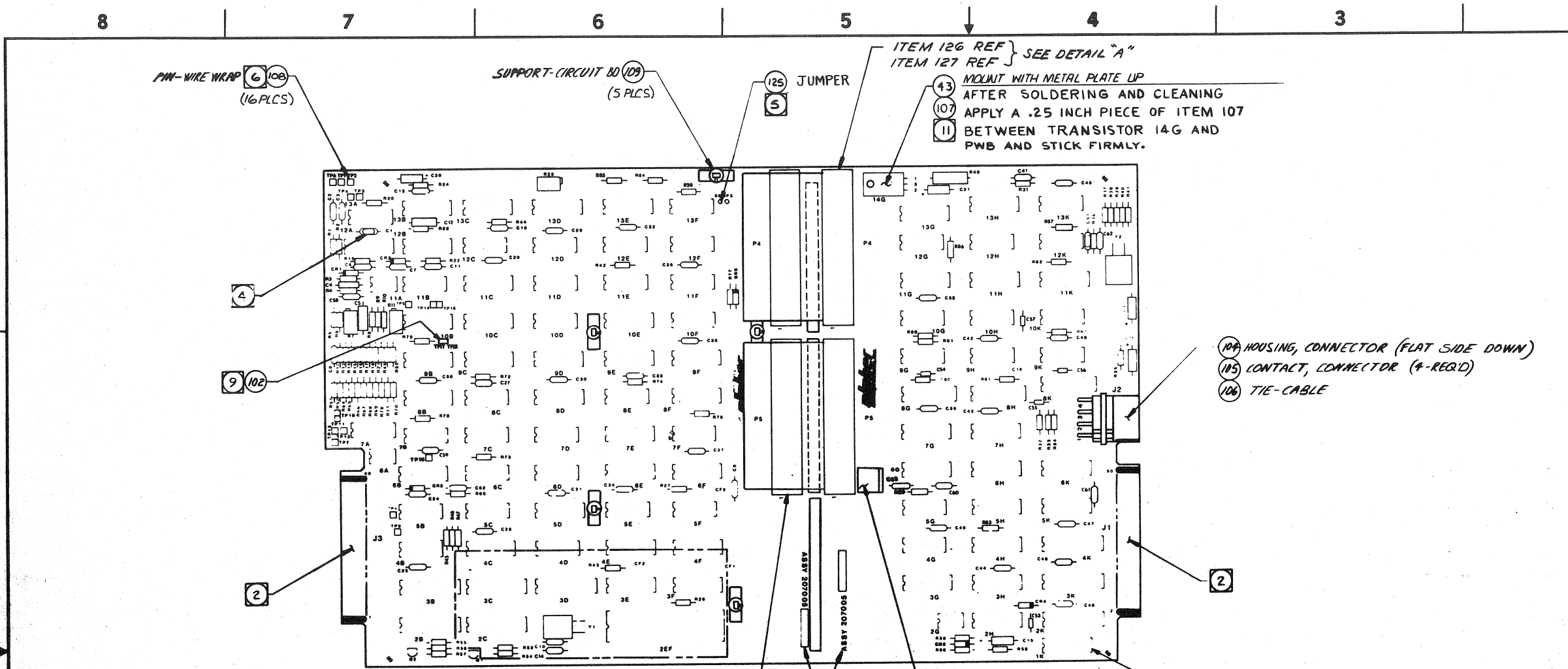


ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207002 - 001 REV B

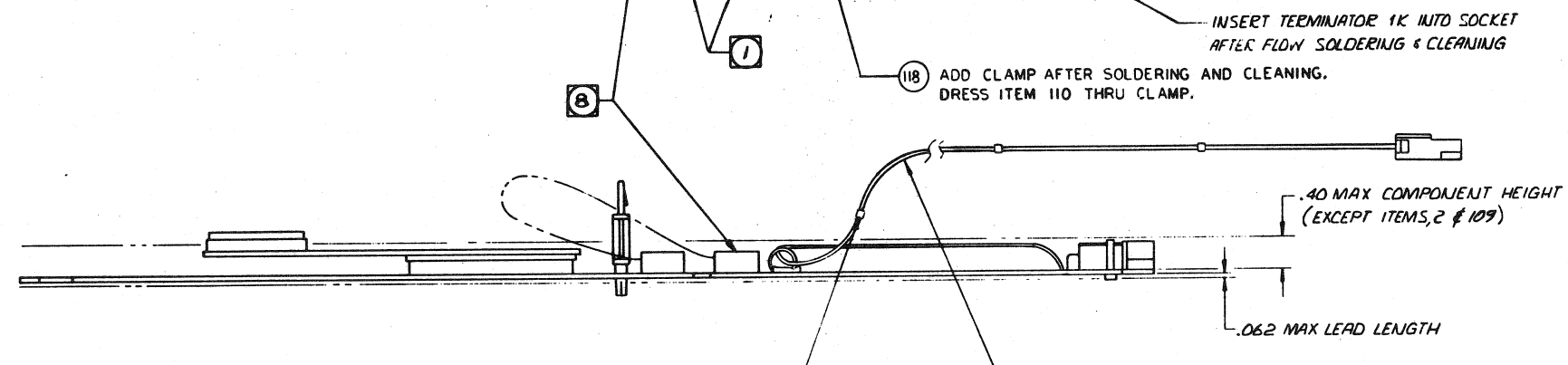
Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE.





REVISIONS			207005-100	C
REV	DESCRIPTION	CHK	DATE	APPROVED
A	ENG REL	LVS	11/17/61	[Signature]
B	INCRP ECC 12192	LA	11/18/61	[Signature]
C	INCRP ECC 12291	LA	11/20/61	[Signature]
D	INCRP ECC 12307	LA	11/20/61	[Signature]
01	PIL REL ERO 820509	KAM	3/18/62	[Signature]
02	ECO 12096	AS	[Signature]	[Signature]
03	ECO 12178	B	[Signature]	[Signature]
04	ECO 12307	ECB	[Signature]	[Signature]
05	ECO 12442	KAM	[Signature]	[Signature]
A	PROD REL ECO 230-2	ECB	[Signature]	[Signature]
B	ECO 12718	JAZ	[Signature]	[Signature]
C	ECO 12849	JAZ	[Signature]	[Signature]

- 104 HOUSING, CONNECTOR (FLAT SIDE DOWN)
- 105 CONTACT, CONNECTOR (#-REQ'D)
- 106 TIE-CABLE



- 9 ADD CLIP AFTER A.T.E. TESTING  
SEE DETAIL 'A' ON SH 2
- ROUTE POWER CABLE ASSEMBLY (ITEM-3) UNDER PWB AS SHOWN. SOLDER TO HOLES 1-4, LOCATED AT REAR OF J2, AFTER FLOW SOLDERING
- PRESS TEST POINT PINS (ITEM-108) INTO PWB PRIOR TO FLOW SOLDERING
- INSTALL "90 IPS" JUMPER (A-002 ASSEMBLY ONLY)

- COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSEMBLY VERSION
- 3. FOR SCHEMATIC REFER TO DWG 207005-200
- WIRE CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- 1. STAMP DASH NO. AND REV LTR USING A PERMANENT AND LEGIBLE MARKING METHOD, (2- PLACES)

PART NO. SEE SEPARATE M/L

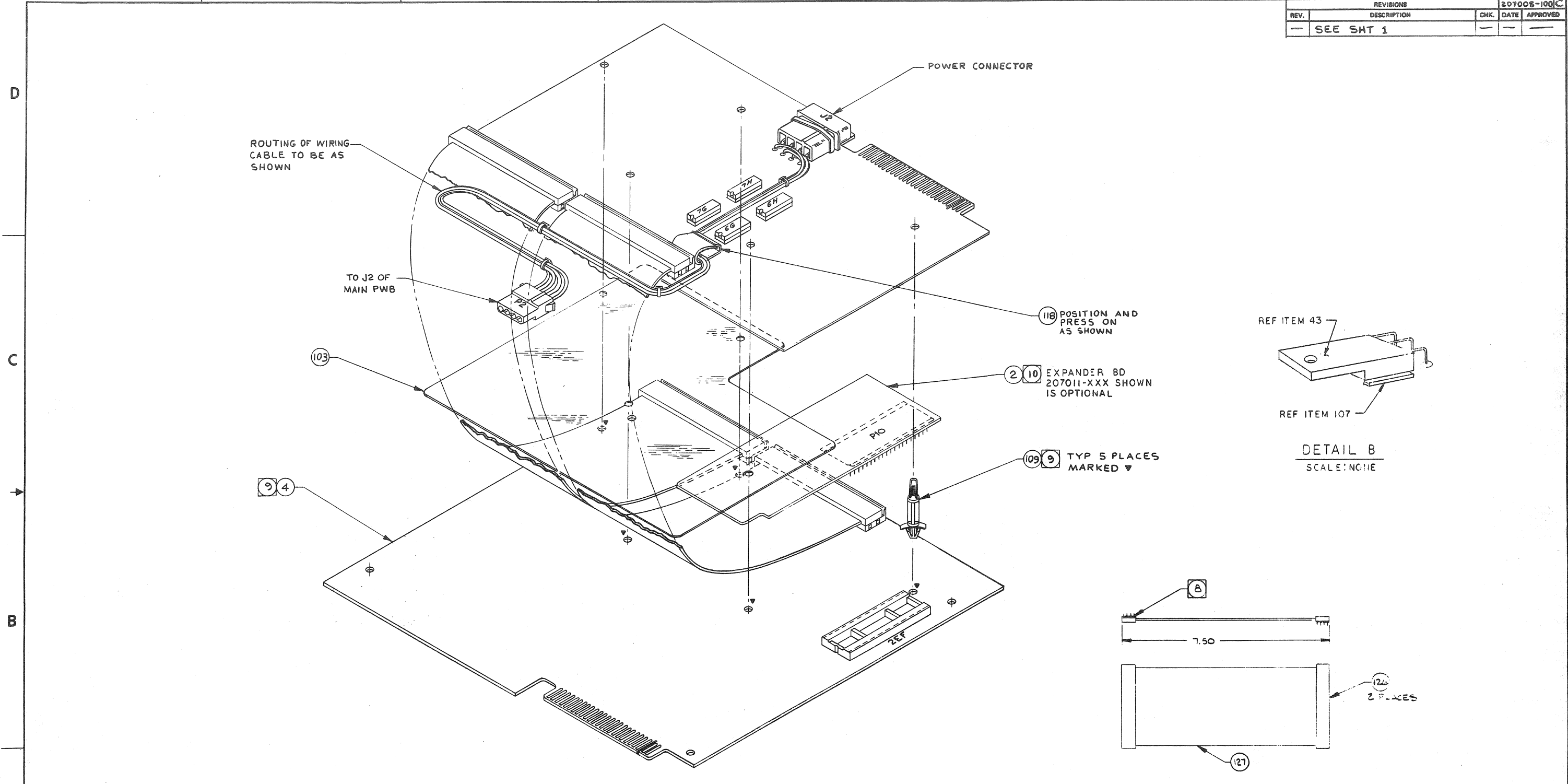
D & D MGR	[Signature]	11/18/61
ME MGR	[Signature]	
DOC MGR	[Signature]	11/12/61
UL/CSA	[Signature]	

DSC:R

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	TOLERANCES ARE DECIMALS	.XX = .XX	.XXX = .XXX	ANGLES =	DO NOT SCALE DRAWING
APPROVAL	DATE	OWN L. SCOTT	11/17/61		
MECH	[Signature]	CHK	[Signature]	TITLE	
ELEC	[Signature]	11/17/61		ASSY, PWB-CONTROLLER	
MFG	[Signature]	11/17/61		CODE IDENT	SIZE
MATL	[Signature]	11/17/61		32274	D
QA	[Signature]	11/17/61		DWG NO	207005-100
MKTG	[Signature]	11/17/61		REV	C
ISSUED	[Signature]	11/17/61		SCALE	1:1
				MOD	50040-001 SH
				OF	2

REVISIONS				207005-100 C	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
-	SEE SHT 1	-	-	-	-



- 1 SEE DETAIL "B"
- 10 PLUG ITEM 2 (MICROCOMPUTER ASSEMBLY) INTO SOCKET OF CONTROLLER PWB AT POSITION 2EF AS SHOWN.
- 9 BREAK ITEM 4 (CONTROLLER PWB) AT SLOTS BETWEEN P4 AND P5 CABLES. CUT OFF EXCESS TABS AND MOUNT PWBS USING ITEM 109 (SUPPORT) AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

SCALE	SIZE	207005-100	REV.
1:1	D		C
DO NOT SCALE THIS DRAWING	CODE IDENT	52465	SHEET 2 OF 2





ASSEMBLY PARTS LIST

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes header information: ASSY, PMB - CONTROLLER - 30 IPS, DSC: R, Q120, S7011, 207005 - 001, REV N.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of assembly parts list.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of assembly parts list.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of assembly parts list.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of assembly parts list.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of assembly parts list.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like I.C. 74LS09, I.C. 74LS240, I.C. 7414, I.C. 74S32, CONN-PC, 50 PIN RIBBON, CAP., CER. 100WVDC±5% 220PF, ASSY DWG CONTROLLER, PRINTED MASTER.

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ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207005 - 002 REV P

ASSEMBLY TITLE ASSY, FWB - CONTROLLER - 90 ips DOC CODE Q120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like SCHEMATIC, EXPANDER, ASSY, 8-BIT MICROCOMPUTER, ASSY, POWER CABLE - CONTROL, PROCESS BOARD, I.C. 74LS00, I.C. 74LS01, I.C. 74LS04, I.C. 74LS08, I.C. 74LS11, I.C. 74LS14, I.C. 74LS32, I.C. 74LS51, I.C. 74LS109, I.C. 74LS138.

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PAGE 1 OF 10



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like I.C. 74LS139, I.C. 74LS153, I.C. CD4502B, I.C. 74LS163, I.C. 74LS164, I.C. 74LS166, I.C. 74LS174, I.C. 74LS175, I.C. 74LS195, I.C. 74LS367, I.C. 74LS374, I.C. 74LS393, I.C. 74S240, I.C. 9602, I.C. 9401, I.C. MC4044P, I.C. 74S124, I.C. MC14040BCP, ASSY, PROM 512 x 4 (READ SEQUENCER), ASSY, PROM 256 x 4 (WRITE SEQUENCER), ASSY, PROM 32 x 8 (READ DECODER).

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PAGE 2 OF 10



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like I.C. MM5257N-25, I.C. TL082P, I.C. LM311, I.C. 74LS74, I.C. 7438, ASSY, PROM 256 X 4 (HOST SEQUENCER), ASSY, PROM 32 X 8 (WRITE ENCODER), I.C. UA7805UC, I.C. 74LS373, I.C. 74S74, I.C. 74S00, I.C. 74S04, I.C. 75452, I.C. 74S163, I.C. 74S174, I.C. 74LS273, SOCKET, DIP - 16 CONTACTS, SOCKET, DIP - 40 CONTACTS, DIODE 1N4150, DIODE, ZENER 1N759A, CRYSTAL 3.579545 MHZ.

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PAGE 3 OF 10



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like CRYSTAL 6.00 MHZ, RESISTOR, 1/4w ±5% 1.0M, RESISTOR, 1/4w ±5% 75, RESISTOR, 1/4w ±5% 3.9K, RESISTOR, 1/4w ±5% 510, RESISTOR, 1/4w ±5% 1K, RESISTOR, 1/4w ±5% 4.7K, RESISTOR, 1/4w ±5% 5.1K, RESISTOR, 1/4w ±5% 10K, RESISTOR, 1/4w ±5% 3.6K, RESISTOR, 1/4w ±5% 33K, RESISTOR, 1/4w ±5% 47K, RESISTOR, 1/4w ±5% 240K, RESISTOR, 1/4w ±1% 49.9, RESISTOR, 1/4w ±5% 20K, RESISTOR, 1/4w ±5% 5.6K, RESISTOR, 1/4w ±5% 82K, RESISTOR, 1/4w ±1% 255, RESISTOR, 1/4w ±1% 20K.

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ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes parts like RESISTOR, 1/4w ±1% 10K, RESISTOR, 1/4w ±1% 40.2K, RESISTOR, 1/4w ±5% 270 OHMS, RESISTOR, 1w ±5% 100, POTENTIOMETER 1/4w, 50K, POTENTIOMETER 1/4w, 10K, TERMINATOR, 16 PIN, 180/390 OHM, CAP., TANT. 10v+20% 2.2uf, CAP., TANT. 10v +20% 4.7uf, CAP., TANT. 10v +20% 22uf, CAP., TANT. 35v +20% 4.7uf, CAP., CER. 50v ±5% 4700pf NPO, CAP., CER. 50v -20+80% 0.10uf Z5U, CAP., CER. 100v ±5% 300pf NPO, CAP., CER. 100v ±5% 15pf NPO, CAP., CER. 100V ±5% 8.2pf NPO, CAP., CER. 50v ±5% 390pf NPO, CAP., CER. 50v ±5% 2700pf NPO.

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ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include components like capacitors, transistors, and resistors.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 002 REV P

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include integrated circuits, wires, and printed masters.



ASSEMBLY PARTS LIST

ASSEMBLY TYPE: ASSY, PWB - CONTROLLER - 30 IPS DSC:R DOC CODE: Q120 S 7 0 1 1 M P 207005 - 003 REV L

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes a schematic and various components. Includes a signature block for J. MAY dated 01-11-83.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV L

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include integrated circuits and resistors.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV L

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include sequencers, decoders, and various ICs.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV L

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include sockets, diodes, and resistors.



### ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						12	13	
M P	100155 - 164		71	RESISTOR, 1/4w ±1% 49.9	R53			
M P	101156 - 203		72	RESISTOR, 1/4w ±5% 20K	R72			
M P	101156 - 562		73	RESISTOR, 1/4w ±5% 5.6K	R4			
M P	101156 - 154		74	RESISTOR, 1/4w ±5% 150K	R12			
M P	100155 - 232		75	RESISTOR, 1/4w ±1% 225	R54			
M P	100155 - 414		76	RESISTOR, 1/4w ±1% 20K	R9, 10, 15, 16, 21, 50 68, 70		8	
M P	100155 - 385		77	RESISTOR, 1/4w ±1% 10K	R18, 49, 69, 71		4	
M P	100155 - 443		78	RESISTOR, 1/4w ±1% 40.2K	R17, 67		2	
M P	101156 - 271		79	RESISTOR, 1/4w ±5% 270 OHMS	R63			
M P	100067 - 101		80	RESISTOR, 1/4w ±5% 100	R48			
M P	138002 - 503		81	POTENTIOMETER 1/4w, 50K	R11			
M P	138002 - 103		82	POTENTIOMETER 1/4w, 10K	R25, R7		2	
M P	<del>138002 - 503</del>		<del>83</del>	<del>POTENTIOMETER 1/4w, 50K</del>	<del>R7</del>			
M P	142032 - 002		84	TERMINATOR, 16 PIN, 180/390 OHM	IK			
M P	102768 - 225		85	CAP., TANT. 10v ±20% 2.2uf	C15			
M P	102768 - 475		86	CAP., TANT. 10v ±20% 4.7uf	C20			
M P	102768 - 226		87	CAP., TANT. 10v ±20% 2.2uf	C16			
M P	102769 - 475		88	CAP., TANT. 35v ±20% 4.7uf	C17, 21		2	
M P	102668 - 472		89	CAP., CER. 50v ±5% 4700pf NPO	C4			

FORM 798 (R 03/82) (Continuation)

PAGE 5 OF 9



### ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						12	13	
M P	102665 - 104		90	CAP., CER. 50v -20-80% 0.10uf Z5U	C2, 3, 6, 7, 8, 24-50		32	
M P	102669 - 301		91	CAP., CER. 100v ±5% 300pf NPO	C9, 10, 60, 61, 63		5	
M P	102667 - 563		92	CAP., CER. 100v ±10% .056uf X7R	C5			
M P	102669 - 150		93	CAP., CER. 100v ±5% 15pf NPO	C14			
M P	102669 - 330		94	CAP., CER. 100v ±5% 33pf NPO	C1			
M P	102669 - 911		95	CAP., CER. 100v ±5% 910pf NPO	C13			
M P	102668 - 122		96	CAP., CER. 50v ±5% 1200pf NPO	C19			
M P	102668 - 822		97	CAP., CER. 50v ±5% 8200pf NPO	C12			
M P	102666 - 479		98	CAP., CER. 50v ±5% 4.7pf	C51			
M P	102669 - 561		99	CAP., CER. 100v ±5% 560pf NPO	C52			
M P	151031 - 001		100	TRANSISTOR, PNP 2N3906	Q1			
M P	151030 - 001		101	TRANSISTOR, NPN 2N3904	Q2			
M P	104903 - 001		102	CLIP, JUMPER .025 SQ POST	TP17-18		1	
M P	207338 - 001		103	SHIELD, CABLE				
M P	105084 - 001		104	CONNECTOR-HOUSING, 4 PIN	J2			
M P	106019 - 001		105	CONTACT, PIN	J2		4	
M P	100171 - 002		106	TY-RAP 1/16 -1%	J2			
M P	150107 - 001		107	TAPE, DOUBLE COATED POLYURETHANE FOAM	I4G		5	06
M P	100360 - 001		108	PIN, WIRE WRAP .025 SQ.	TP1-18		18	

FORM 798 (R 03/82) (Continuation)

PAGE 6 OF 9



### ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						12	13	
	147805 - 001		109	SUPPORT, CIRCUIT BOARD			5	
M P	100171 - 001		110	TY-RAP 1/16 to 5/8			3	
M P	102668 - 272		111	CAP., CER. 50v ±5% 2700pf NPO	C11		1	
M P	102664 - 103		112	CAP., CER. 50v -20% +80% 0.01uf Z5U	C53-C57		5	
M P	102667 - 102		113	CAP., CER. 100 WVDC ±10% 1000 pf	C62		1	
M P	-		114					
M P	101156 - 682		115	RESISTOR, 1/4w ±5% 6.8K	R83		1	
M P	101156 - 331		116	RESISTOR, 1/4w ±5% 330	R84		1	
M P	101156 - 221		117	RESISTOR, 1/4w ±5% 220	R85		1	
M P	104804 - 001		118	CLAMP, CABLE			1	
M P	-		119					
M P	123123 - 001		120	I.C. 74LS09	4G		1	
M P	123246 - 001		121	I.C. 74LS240	2K		1	
M P	123001 - 001		122	I.C. 7414	10H		1	
M P	123074 - 001		123	I.C. 74S32	12C		1	
M P	105008 - 006		126	CONN-PC, 50 PIN RIBBON	P4,5		4	
M P	101045 - 001		127	CABLE, FLAT			15	06
M P	102669 - 221		128	CAP., CER. 100WVDC ±5% 220PF	C59		1	
M P	207005 - 100		130	ASSY DWG CONTROLLER			0	
M P	207003 - 001		131	PRINTED MASTER			0	

FORM 798 (R 03/82) (Continuation)

PAGE 7 OF 9

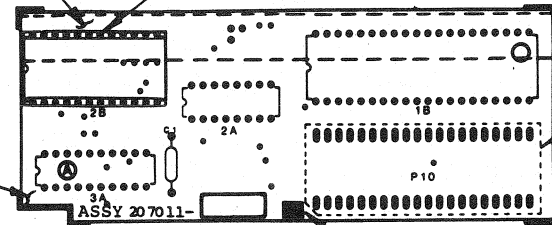
REVISION		207011-100			
LTR	DESCRIPTION	DWN	DATE	APVD	DATE
A	ENG REL	LS	1/14/82	CK	1/1/82
O1	PIL REL ERO 820309	BB	2/4/82		
O1	ECO 12121	BB	KAM 3/29/82	2/6/82	1/6/82
O12	ECO 12442	KM	1/21/82	2/1/82	1/21/82
O13	ECO 12505	JAR	1/21/82	1/21/82	1/21/82
A	PROD REL PER ERO 820424	RC	1/27/82		

INSTALL 4" LONG PIECE OF ITEM 10 (TAPE) TO UNDERSIDE OF PWB AFTER FLOW SOLDERING AND CLEANING.

INSTALL COMPONENT 2B (ITEM 9) IN SOCKET X2B AFTER FLOW SOLDERING AND CLEANING.

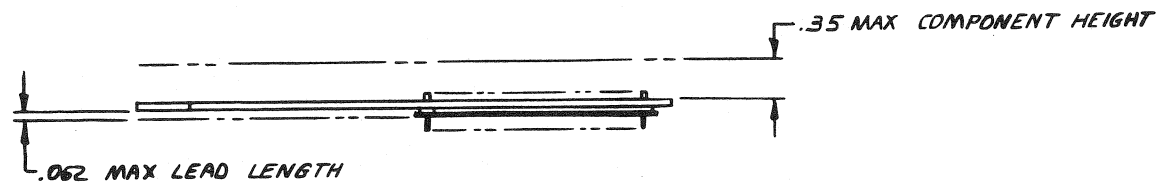
PWB-MICROCOMPUTER EXPANDER

2



7 CONNECTOR-P10 (INSTALL FROM FAR SIDE AFTER FLOW SOLDERING)

207011-100  
REV A



D & D MGR	1/29/82
ME MGR	2-10-82
DOC MGR	1-27-82
UL/CSA	2/1/82
FACR NO.	NONE

APPROVAL		DATE	DWN	L. SCHOTT	1/14/82	cipher		SAN DIEGO CALIF
MECH	2-1/82	CHK	Shel	1/27/82				
ELEC	1/21/82	TITLE	PWB ASSY-MICROCOMPUTER EXPANDER					
MFG	1/21/82							
MATL	1/21/82							
QA	1/21/82							
MKTG	1/21/82							
ISSUED	1/21/82							
SCALE	1-1	MOD	40049-001	SH	1	OF	1	

2. FOR SCHEMATIC REFERENCE SEE, DWG. 207011-200.

STAMP REVISION LETTER USING A PERMANENT AND LEGIBLE MARKING METHOD.

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ARC.SCH 40041-001

ARCH. #/L 20077-007 1 160601-009 ce



ASSEMBLY PARTS LIST

S 7 0 1 1 207011 - 001 C

ASSEMBLY TITLE: ASSY, PWB - MICROCOMPUTER EXPANDER DSC: R DOC CODE: Q 120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include items like SCHEMATIC, PROCESS BOARD, I.C. P8035, I.C. 74LS175PCB, I.C. SN74LS373N, CAP., CER. 50v -20+80% 0.1uf, CONNECTOR - DIP PLUG, SOCKET - DIP, 24 CONTACTS, ASSY, PROM 2K X 8, TAPE, URETHANE FOAM, PRINTED MASTER, ASSY DWG.

Prepared by: Sue Redmond, 1-14-82. Checked by: [Signature], 1-26-82. Design Engineer: [Signature], 1-29-82. DWG REL NO.: 820287, DATE: 2/1/82. NEXT ASSEMBLY: 207005-001. MODEL NO.: F420-30/90.



ASSEMBLY PARTS LIST

S 7 0 1 1 207011 - 002 B

ASSEMBLY TITLE: ASSY, PWB - MICROCOMPUTER EXPANDER DSC: R DOC CODE: Q120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include items like SCHEMATIC, PROCESS BOARD, I.C. P8035, I.C. 74LS175PCB, I.C. SN74LS373N, CAP., CER. 50v -20+80% 0.1uf, CONNECTOR - DIP PLUG, SOCKET - DIP, 24 CONTACTS, ASSY, PROM 2K X 8, TAPE, URETHANE FOAM, PRINTED MASTER, ASSY DWG.

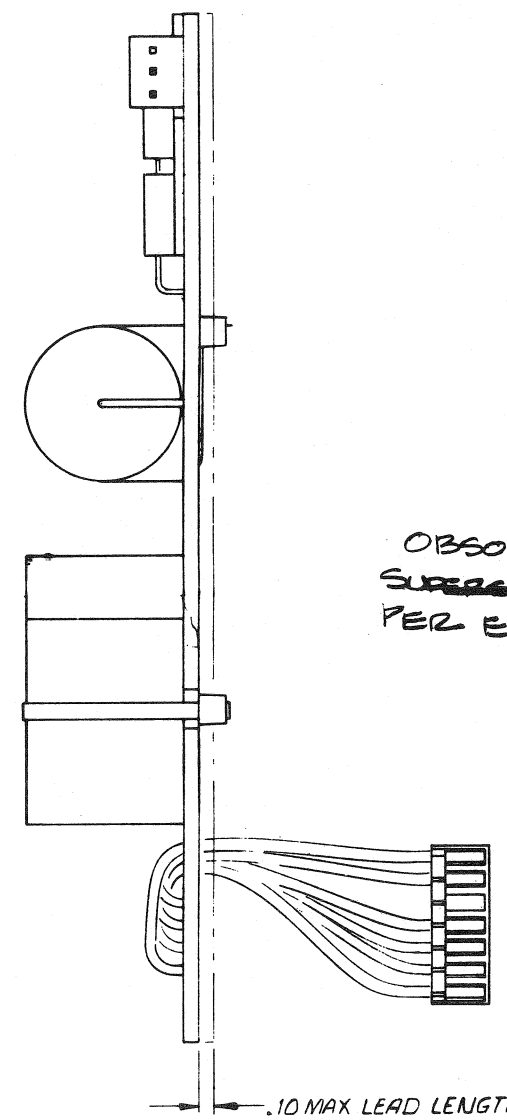
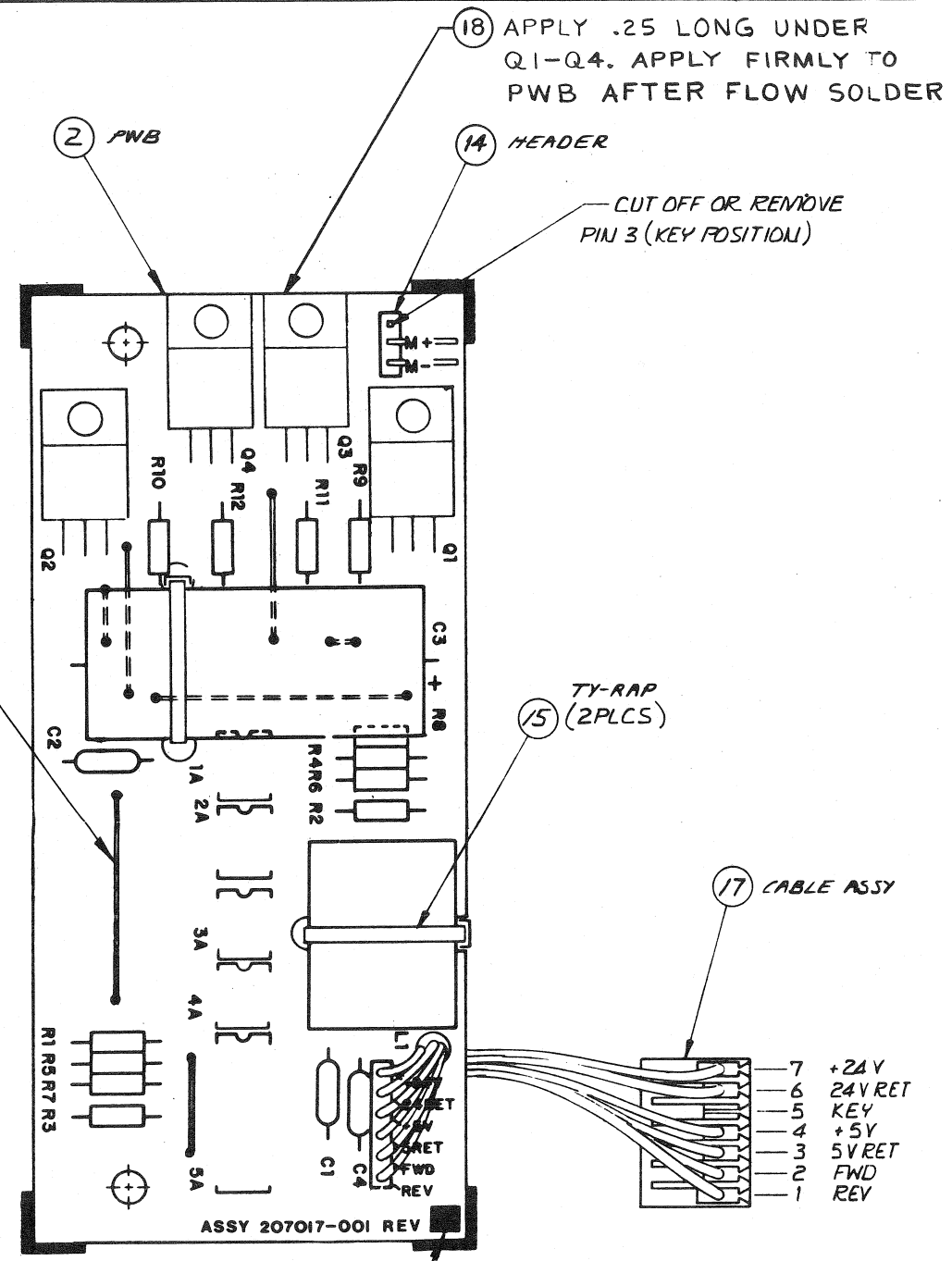
Prepared by: S. HENCKE, 01-17-83. Checked by: [Signature], 1/17/83. Design Engineer: [Signature], 1/17/83. DWG REL NO.: 820455, DATE: 01/17/83. NEXT ASSEMBLY: 207005-003. MODEL NO.: F420-30/90.

4 3 2 1

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG. REL	LVS	9-25-81	CK 1143-81
01	PIL REL ERO 820309	KAM	9/28/81	
02	ECO 12179	MS	KAM	12/20/81
03	ECO 12243	JAZ	KAM	1/20/82
04	ECO 12461	KW	KAM	9/2/82

D  
C  
B  
A

D  
C  
B  
A



STAMP REVISION LETTER USING A PERMANENT AND LEGIBLE MARKING METHOD.

1. FOR SCHEMATIC REFERENCE SEE DWG 207017-200.

NOTES: UNLESS OTHERWISE SPECIFIED

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DSC: 7

D & D MGR	11/2-81
ME MGR	11-12-81
DOC MGR	11-12-81
UL/CSA	11/1/81

PART NO. SEE SEPARATE M/L

Q-120

APPROVAL	DATE	DWN L. SCHOTT	9/29/81						
MECH	11/12-81	CHK	2/11/82						
ELEC	11/19/81	TITLE	ASSY PWB MOTOR DRIVER						
MFG	3/20/81	CODE IDENT	32274	SIZE	C	DWG NO	207017-100	REV	0-
MATL	1/1/81	ISSUED	7/1/81	SCALE	2:1	MOD	40011-001	SH	1 OF 1



ASSEMBLY PARTS LIST

S 7 0 1 1 207017 - 001

ASSEMBLY TITLE: ASSY, PWB - MOTOR DRIVER DSC:4 DOC CODE: Q 120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes items like SCHEMATIC, PROCESS BOARD, PHOTOTRANSISTOR, TRANSISTOR, RESISTOR, CAP., INDUCTOR, and HEADER.

Table with columns: PREPARED BY, CHECKED BY, DESIGN ENGINEER, DATE, DIVISION, DATE, NEXT ASSEMBLY, MODEL NO. Includes handwritten signatures and dates.



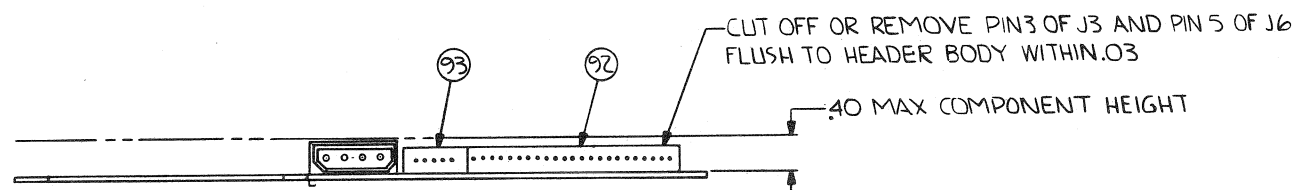
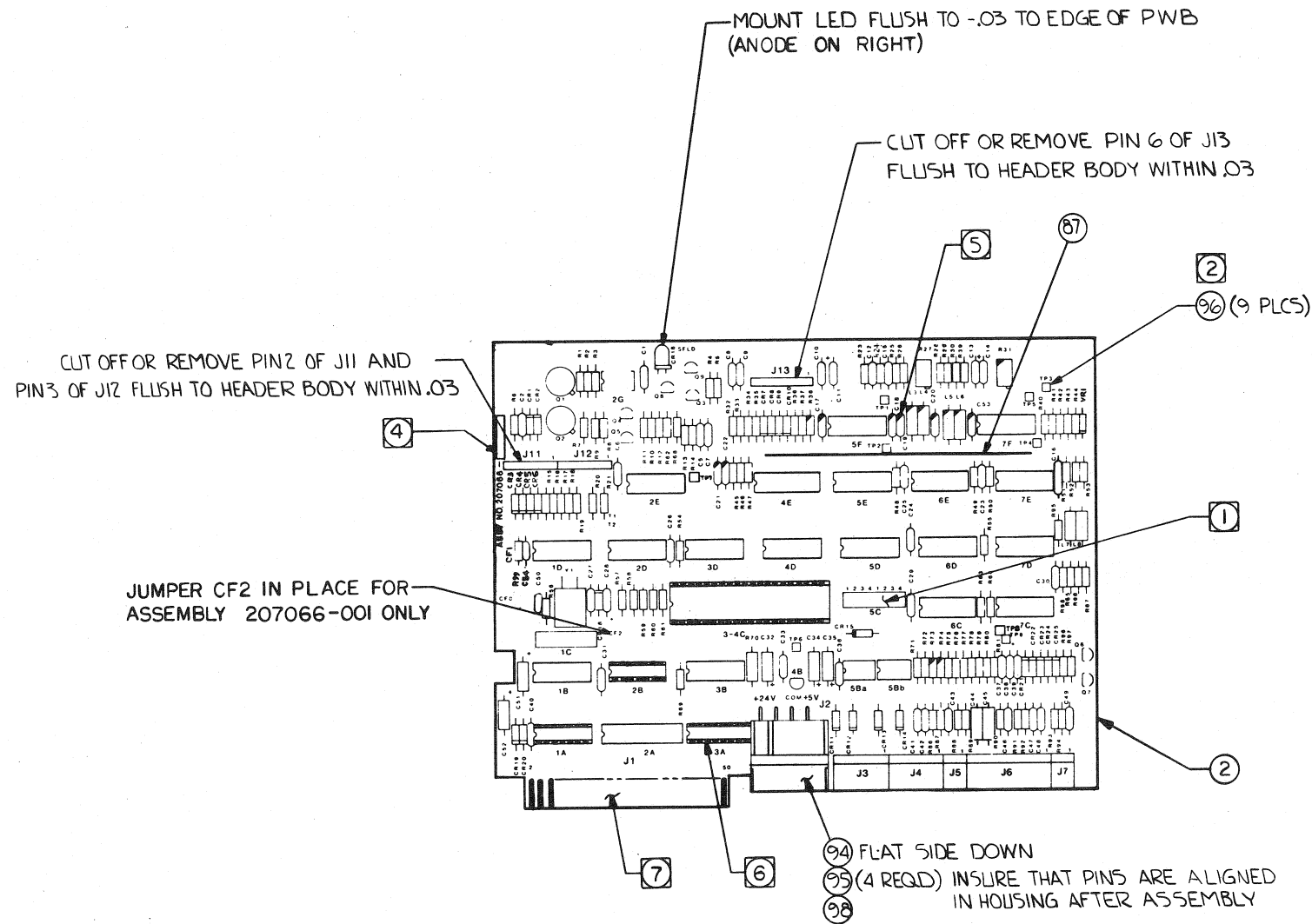
ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207017 - 001

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes items like TY-RAP, WIRE, ASSY, TAPE, and PRINTED MASTER.



REVISIONS				207066-100B	
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO B20372 W	KAM			
02	ECO 12436/A	JdZ			
A	PROD. REL ERO B20421/A	KAM			
B	ECO 12642				



- ⑦ MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- ③ INSTALL COMPONENTS 1A, 3A, 2B, 3C-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
- ② COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSEMBLY VERSION
- ④ MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .J2 CHARACTERS PER CIPHER DATA SPEC 100037-001
- 3. REFERENCE SCHEMATIC DIAGRAM 207066-200
- ② PRESS TEST POINT PIN INTO PWB PRIOR TO FLOW SOLDERING
- ① INSTALL ITEM 97, JUMPER CLIPS ON PIN SETS I OF HEADER 5C

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES XX± ANGULAR ± XXX± ± 2. BREAK ALL SHARP EDGES APPROX .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN D. WILSON 3-5-82 CHECK <i>[Signature]</i> 6/7/82 APPR. <i>[Signature]</i> 6/9/82	<p>THIS DRAWING IS THE PROPERTY OF CIPHER DATA PRODUCTS, INC. IT IS TO BE USED FOR THE MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.</p>	CODE W20		
	MATERIAL FINISH		QTY REQD. 1		
	MODEL No. 0420-30/90		SCALE 1:1	SIZE D 207066-100	REV. B
	NEXT ASSY		DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1
	DSC:R				



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 001 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes sub-tables for PREPARED BY, CHECKED BY, DESIGN ENGINEER, and DATE.

FORM 755 (R 06/80)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 002 REV F

ASSEMBLY TITLE ASSY, PWB - MAIN - 90 IPS DOC CODE Q120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes a revision table at the bottom.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207066 - 002 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207066 - 002 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207066 - 002 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207066 - 002 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207066 - 002 REV F

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes assembly title 'ASSY, PWB - MAIN - 30 IPS' and various part numbers like 207066, 207065, 940222.

FORM 755 (R 03/82)

PAGE 1 OF 7



ASSEMBLY PARTS LIST (CONTINUATION)

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of parts list with numbers like 123239, 125011, 125017.

FORM 755 (R 03/82) (Continuation)

PAGE 2 OF 7



ASSEMBLY PARTS LIST (CONTINUATION)

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of parts list with numbers like 101156, 101155, 101156.

FORM 755 (R 03/82) (Continuation)

PAGE 3 OF 7



ASSEMBLY PARTS LIST (CONTINUATION)

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of parts list with numbers like 100155, 100155, 100155.

FORM 755 (R 03/82) (Continuation)

PAGE 4 OF 7



ASSEMBLY PARTS LIST (CONTINUATION)

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of parts list with numbers like 102667, 102665, 102667.

FORM 755 (R 03/82) (Continuation)

PAGE 5 OF 7



ASSEMBLY PARTS LIST (CONTINUATION)

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Continuation of parts list with numbers like 120916, 120915, 120915.

FORM 755 (R 03/82) (Continuation)

PAGE 6 OF 7





### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
207066 - 200	1	SCHEMATIC		0							
207065 - 001	2	PROCESS BOARD		1							
940222 - 001	3	ASSY, 8 BIT MICROCOMPUTER (MASKED ROM VERSION)	3-4C (207030-002 Alternate)	1							
123029 - 001	4	I.C. 74LS00	6E	1							
123030 - 001	5	I.C. 74LS02	4D	1							
123031 - 001	6	I.C. 74LS04	1B, 3B, 1D, 5D	4							
123123 - 001	7	I.C. 74LS09	2D	1							
123036 - 001	8	I.C. 74LS74	3D, 6D, 5E	3							
123038 - 001	9	I.C. 74LS86	7C	1							
123234 - 001	10	I.C. 74S240	2A	1							
101139 - 001	11	I.C. 75451	2G	1							
101031 - 001	12	I.C. 75452	5Ba, 5Bb	2							
100331 - 001	13	I.C. 7406	7D	1							
100234 - 001	14	I.C. 9602	4E	1							

PREPARED BY: Sue Redmond DATE: 7-13-82 E 12728  
 CHECKED BY: Sam Nakhrai DATE: 1/4/83 D 12642  
 DESIGN ENGINEER: D. Hutton DATE: 1/11/83 C 12636  
 DWG REL NO: B20430 DATE: 1/04/83  
 NEXT ASSEMBLY: 207358  
 MODEL NO: 0420-90

FORM 796 (R 03/82)

PAGE 1 OF 7



### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
123239 - 001	15	I.C. LM319	7E	1							
125011 - 001	16	I.C. LM339	6C	1							
125017 - 015	17	I.C. MA78L15	4B	1							
101032 - 001	18	I.C. NE592	5F, 7F	2							
146014 - 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2							
146014 - 016	20	SOCKET, DIP - 16 CONTACTS	3A	1							
146014 - 040	21	SOCKET, DIP 40 CONTACTS	3-4C	1							
120909 - 003	22	HEADER, PROGRAM - DIP	2B	1							
151032 - 001	23	TRANSISTOR, PNP Q2T2905	2E	1							
151030 - 001	24	TRANSISTOR, NPN 2N3904	Q3-7	5							
151033 - 001	25	TRANSISTOR, NPN MM3007	Q1, 2	2							
107029 - 001	26	DIODE 1N4001	CR15	1							
107201 - 001	27	DIODE 1N4150	CR1-14, CR18-25	22							
107005 - 001	28	LED, INDICATOR MV5054-2	CR16	1							
106500 - 114	29	CRYSTAL - 3.579545 MHZ	Y1	1							
101156 - 100	30	RESISTOR, 1/4W ±5% 10	R23, 24	2							
101156 - 330	31	RESISTOR, 1/4W ±5% 33	R48	1							
100155 - 164	32	RESISTOR, 1/4W ±5% 49.9	R4	1							
101156 - 121	33	RESISTOR, 1/4W ±5% 120	R2, 3	2							

FORM 796 (R 03/82) (Continuation)

PAGE 2 OF 7



### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
101156 - 161	34	RESISTOR, 1/4W ±5% 160	R90	1							
101156 - 221	35	RESISTOR, 1/4W ±5% 220	R54	1							
101156 - 471	36	RESISTOR, 1/4W ±5% 470	R56, 99	2							
101156 - 511	37	RESISTOR, 1/4W ±5% 510	R34, 35, 49, 50, 51	5							
101156 - 681	38	RESISTOR, 1/4W ±5% 680	R7, 10, 58, 61	4							
101156 - 102	39	RESISTOR, 1/4W ±5% 1K	R13, 16, 18, 41, 42, 47, 55, 73, 74, 87, 89	11							
101156 - 122	40	RESISTOR, 1/4W ±5% 1.2K	R80	1							
101156 - 152	41	RESISTOR, 1/4W ±5% 1.5K	R69	1							
101156 - 272	42	RESISTOR, 1/4W ±5% 2.7K	R97	1							
101156 - 302	43	RESISTOR, 1/4W ±5% 3K	R38	1							
101156 - 392	44	RESISTOR, 1/4W ±5% 3.9K	R98	1							
101156 - 472	45	RESISTOR, 1/4W ±5% 4.7K	R57, 59, 60, 79, 81	5							
101156 - 682	46	RESISTOR, 1/4W ±5% 6.8K	R14, 15, 17, 19, 20	5							
101156 - 103	47	RESISTOR, 1/4W ±5% 10K	R64, 65, 67, 71, 75, 76, 78, 86, 88, 92, 93, 96	12							
101156 - 203	48	RESISTOR, 1/4W ±5% 20K	R43	1							
101156 - 303	49	RESISTOR, 1/4W ±5% 30K	R46	1							
101156 - 333	50	RESISTOR, 1/4W ±5% 33K	R28, 30	2							
101156 - 473	51	RESISTOR, 1/4W ±5% 47K	R91, 94	2							
101156 - 104	52	RESISTOR, 1/4W ±5% 100K	R63, 66, 72, 77	4							

FORM 796 (R 03/82) (Continuation)

PAGE 3 OF 7



### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
100155 - 181	53	RESISTOR, 1/4W ±1% 75	R1	1							
100155 - 232	54	RESISTOR, 1/4W ±1% 255	R5	1							
100155 - 254	55	RESISTOR, 1/4W ±1% 432	R8	1							
100155 - 289	56	RESISTOR, 1/4W ±1% 1K	R29, 39	2							
100155 - 347	57	RESISTOR, 1/4W ±1% 4.02K	R40, 44	2							
100155 - 351	58	RESISTOR, 1/4W ±1% 4.42K	R32, 33	2							
100155 - 385	59	RESISTOR, 1/4W ±1% 10K	R25, 26, 36, 37, 52	5							
100155 - 415	60	RESISTOR, 1/4W ±1% 20.5K	R53, 95	2							
100064 - 620	61	RESISTOR, 1/2W ±5% 62	R70	1							
142027 - 001	62	TERMINATOR - 14 PIN 180/390 OHM	1A	1							
142032 - 002	63	TERMINATOR - 16 PIN 180/390 OHM	3A	1							
138002 - 104	64	POTENTIOMETER 1/2W, 100K	R27	1							
138002 - 502	65	POTENTIOMETER 1/2W, 5K	R31	1							
102768 - 225	66	CAP., TANT. 10v ±20% 2.2uf	C28, C38	2							
102871 - 225	67	CAP., TANT. 20v ±20% 2.2uf	C34	1							
102769 - 475	68	CAP., TANT. 35v ±20% 4.7uf	C32	1							
102870 - 685	69	CAP., TANT. 4v ±20% 6.8uf	C11, 13	2							
102768 - 226	70	CAP., TANT. 10v ±20% 22uf	C35, 51, 52	3							
102667 - 472	71	CAP., CER. 100v ±10% .0047uf	C37, 54	2							

FORM 796 (R 03/82) (Continuation)

PAGE 4 OF 7



### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
102667 - 102	72	CAP., CER. 100v ±10% .001uf	C43, 46-49	5							
102665 - 104	73	CAP., CER. 50v -20+80% .1uf	C1, 5, 7-10, 12, 14, 15, 23, 27, 29-31, 33, 36, 39-42	23							
102667 - 104	74	CAP., CER. 100v ±10% .1uf	C44, 45	2							
102673 - 479	75	CAP., CER. 100v ±10% 4.7pf	C50	1							
102669 - 200	76	CAP., CER. 100v ±5% 20pf	C2, C53	2							
102669 - 330	77	CAP., CER. 100v ±5% 33pf	C16, 21, 22	3							
102669 - 101	81	CAP., CER. 100v ±5% 100pf	C20	1							
102669 - 391	82	CAP., CER. 100v ±5% 390pf	C18, 19	2							
102669 - 301	83	CAP., CER. 100v ±5% 300pf	C17	1							
122502 - 001	84	INDUCTOR 10uh ±5% 290ma	L7, 8	2							
122502 - 008	85	INDUCTOR 270uh ±5% 129ma	L3, 4	2							
122502 - 004	86	INDUCTOR 120uh ±5% 124ma	L5, 6	2							
102002 - 001	87	BUS BAR - VERTICAL		1							
100143 - 002	88	PAD, TRANSISTOR TO-5	Use with Q1, Q2	2							
120905 - 011	89	HEADER, DOUBLE ROW, STRAIGHT	5C	1							
120916 - 001	90	HEADER, RIGHT ANGLE	J13	1							
120916 - 002	91	HEADER, RIGHT ANGLE	J11, 12	1							
120915 - 024	92	HEADER, RIGHT ANGLE	J4-7	1							
120915 - 007	93	HEADER, RIGHT ANGLE	J3	1							

FORM 796 (R 03/82) (Continuation)

PAGE 5 OF 7



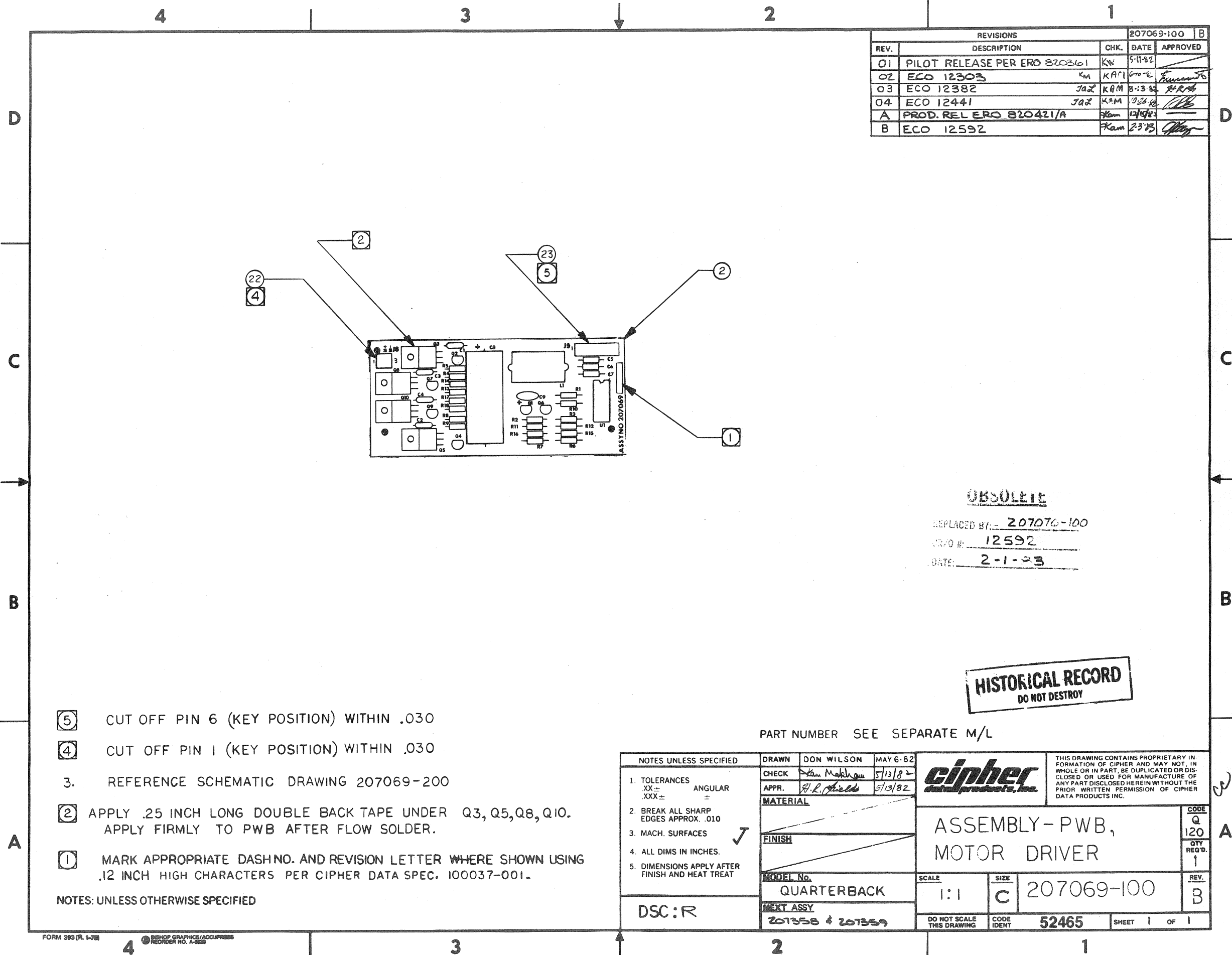
### ASSEMBLY PARTS LIST

ASSEMBLY TITLE		DSC: R		DOC CODE: Q120		S 7 0 1 1 M P		207066 - 004		REV G	
19	28	12	13	14	15	16	17	18	19	20	21
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY	U.M. CODE	WHOLE	DECIMAL	U.M. CODE			
105084 - 001	94	CONNECTOR-HOUSING, 4 PIN	J2	1							
106019 - 001	95	CONTACT, PIN	J2	4							
100360 - 004	96	PIN, WIRE WRAP .025 SQ.	TP1-9, CF-0	11							
104903 - 001	97	CLIP, JUMPER .025 SQ. POST	5C	2							
100171 - 001	98	TY-RAP 1/16-1 1/4	J2	1							
101058 - 024	99	DIODE, ZENER 1N5225B	VR1	1							
100											
207066 - 100	101	ASSEMBLY DRAWING		0							
207064 - 001	102	PRINTED MASTER		0							
100377 - 002	113	PIN		2							
900908 - 001	114	TEST PROCEDURE	SELECT R45	0							

FORM 796 (R 03/82) (Continuation)

PAGE 6 OF 7

REVISIONS				207069-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT RELEASE PER ERO 820361	KW	5-11-82		
02	ECO 12303	KM	KAM	6-10-82	<i>Furman</i>
03	ECO 12382	Jad	KAM	8-3-82	<i>J.R.H.</i>
04	ECO 12441	Jad	KAM	10-26-82	<i>[Signature]</i>
A	PROD. REL ERO 820421/A	Kam	12/15/82		
B	ECO 12592	Kam	2-3-83		<i>[Signature]</i>



**OBsolete**

REPLACED BY: 207076-100  
 D/D #: 12592  
 DATE: 2-1-83

**HISTORICAL RECORD**  
 DO NOT DESTROY

- ⑤ CUT OFF PIN 6 (KEY POSITION) WITHIN .030
- ④ CUT OFF PIN 1 (KEY POSITION) WITHIN .030
- 3. REFERENCE SCHEMATIC DRAWING 207069-200
- ② APPLY .25 INCH LONG DOUBLE BACK TAPE UNDER Q3, Q5, Q8, Q10. APPLY FIRMLY TO PWB AFTER FLOW SOLDER.
- ① MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 INCH HIGH CHARACTERS PER CIPHER DATA SPEC. 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES XX± ANGULAR XXX± ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT DSC:R	DRAWN	DON WILSON	MAY 6-82		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.				
	CHECK	<i>[Signature]</i>	5/13/82						
	APPR.	<i>[Signature]</i>	5/13/82						
	MATERIAL								
FINISH			ASSEMBLY-PWB, MOTOR DRIVER	CODE Q 120 QTY REQ'D 1					
MODEL No.	QUARTERBACK		SCALE	1:1	SIZE	C	207069-100	REV.	B
NEXT ASSY	207358 & 207359		DO NOT SCALE THIS DRAWING	CODE IDENT	52465	SHEET	1	OF	1



**alber** HISTORICAL RECORD ASSEMBLY PARTS LIST

DO NOT DESTROY  
 GARDEN GROVE DIVISION  
 ASSEMBLY TITLE: ASSY, PNB-MOTOR DRIVER  
 DDC CODE: Q120  
 S 7 0 1 1 207069 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
-	1					
207068 - 001	2	PROCESS BOARD		1		
100336 - 001	3	I.C. 7438		1		
-	4					
151027 - 002	5	TRANSISTOR, NPN TIP120	REPLACED BY: - 207076-001	2		
151028 - 002	6	TRANSISTOR, PNP TIP125	CR/O #: 12592	2		
151030 - 001	7	TRANSISTOR, NPN 2N3904	DATE: 2-1-83	4		
151031 - 001	8	TRANSISTOR, PNP 2N3906		2		
-	9					
101156 - 101	10	RESISTOR, 1/4W ± 5% 100	R5, R9, R14, R18	4		
101156 - 561	11	RESISTOR, 1/4W ± 5% 560	R7, R16	2		
101156 - 392	12	RESISTOR, 1/4W ± 5% 3.9K	R1, R2, R6, R10, R11, R15	6		
101156 - 682	13	RESISTOR, 1/4W ± 5% 6.8K	R4, R8, R13, R17	4		
101156 - 103	14	RESISTOR, 1/4W ± 5% 10K	R3, R12	2		

FORM 786 (R 03/82) PAGE 1 OF 3

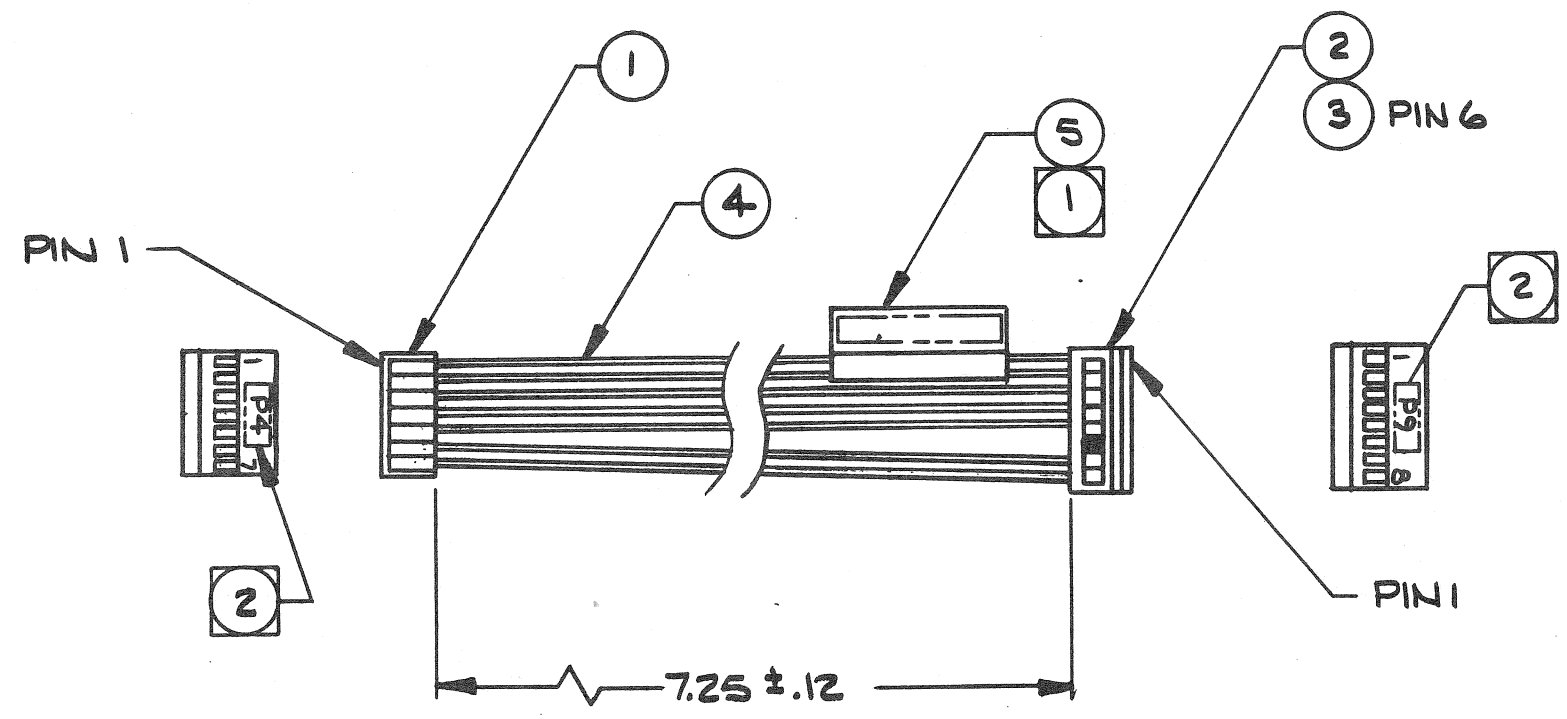
**alber** ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 207069 - 001 REV B

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
-	15					
102608 - 108	16	CAP, ELEC 35V-10% + 50% 1000uf	C8	1		
102665 - 104	17	CAP, CER. 50V-20 + 80% .1uf	C5, C6, C7	3		
102667 - 103	18	CAP, CER. 100V ± 10% .01uf	C1, C2, C3, C4	4		
-	19					
122522 - 001	20	INDUCTOR, HIGH CURRENT FILTER ± 10% 100uh	L1	1		
-	21					
120917 - 003	22	HEADER, STRAIGHT 3-PIN	J8	1		
120917 - 008	23	HEADER, STRAIGHT 8-PIN	J9	1		
-	24					
150107 - 001	25	TAPE, DOUBLE COATED POLYURETHANE FOAM	Q3, Q5, Q8, Q10	1	0.6	
207069 - 200	26	SCHEMATIC	REF	0		
207069 - 100	27	ASSY. DWG	REF	0		
207067 - 001	28	MASTER ARTWORK	REF	0		
-	29					
-	30					
-	31					
-	32					
-	33					

FORM 786 (R 03/82) (Continuation) PAGE 2 OF 3

REVISIONS				207070-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/4/82	—	




P4		P9
1	S REV	1
2	S FWD	2
3	+5 RET	3
4	+5V	4
5	OL	5
	KEY	6
6	+24 RET	7
7	+24V	8

PART NUMBER SEE SEPARATE M/L

- 2 MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 1 MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

NOTES UNLESS SPECIFIED		DRAWN MATTHES 8/24/82		 Garden Grove Division		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
1. TOLERANCES .XX ± — ANGULAR .XXX ± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK Kam Mahrawi 6/1/82 APPR. [Signature] 11/4/82					
DSC: R		MATERIAL		ASSY, CABLE-MOTOR DRIVER PWB, 90 IPS		QTY REQD. 1 REV. A	
		FINISH		SCALE 1/1		SIZE B 207070-100 A	
		MODEL No. QB		DO NOT SCALE THIS DRAWING		CODE IDENT SHEET 1 OF 1	
		NEXT ASSY					







ASSEMBLY PARTS LIST

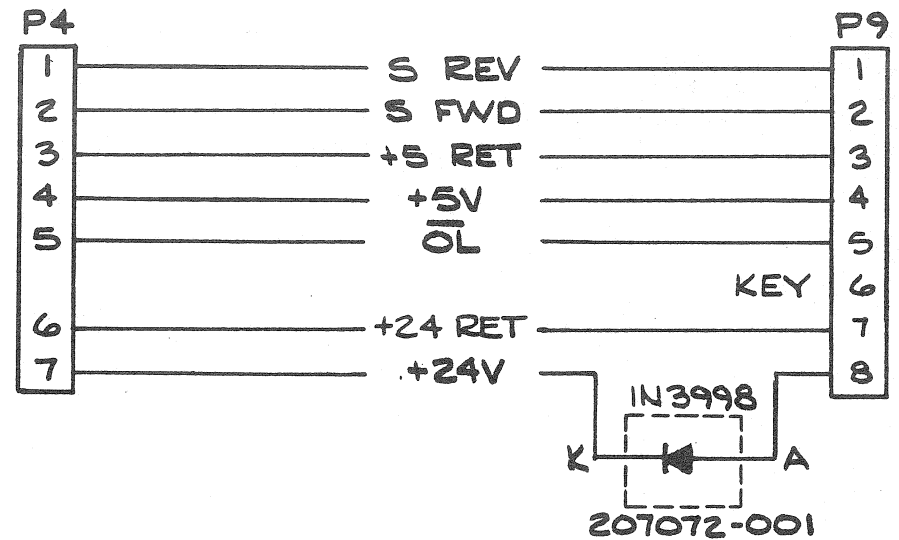
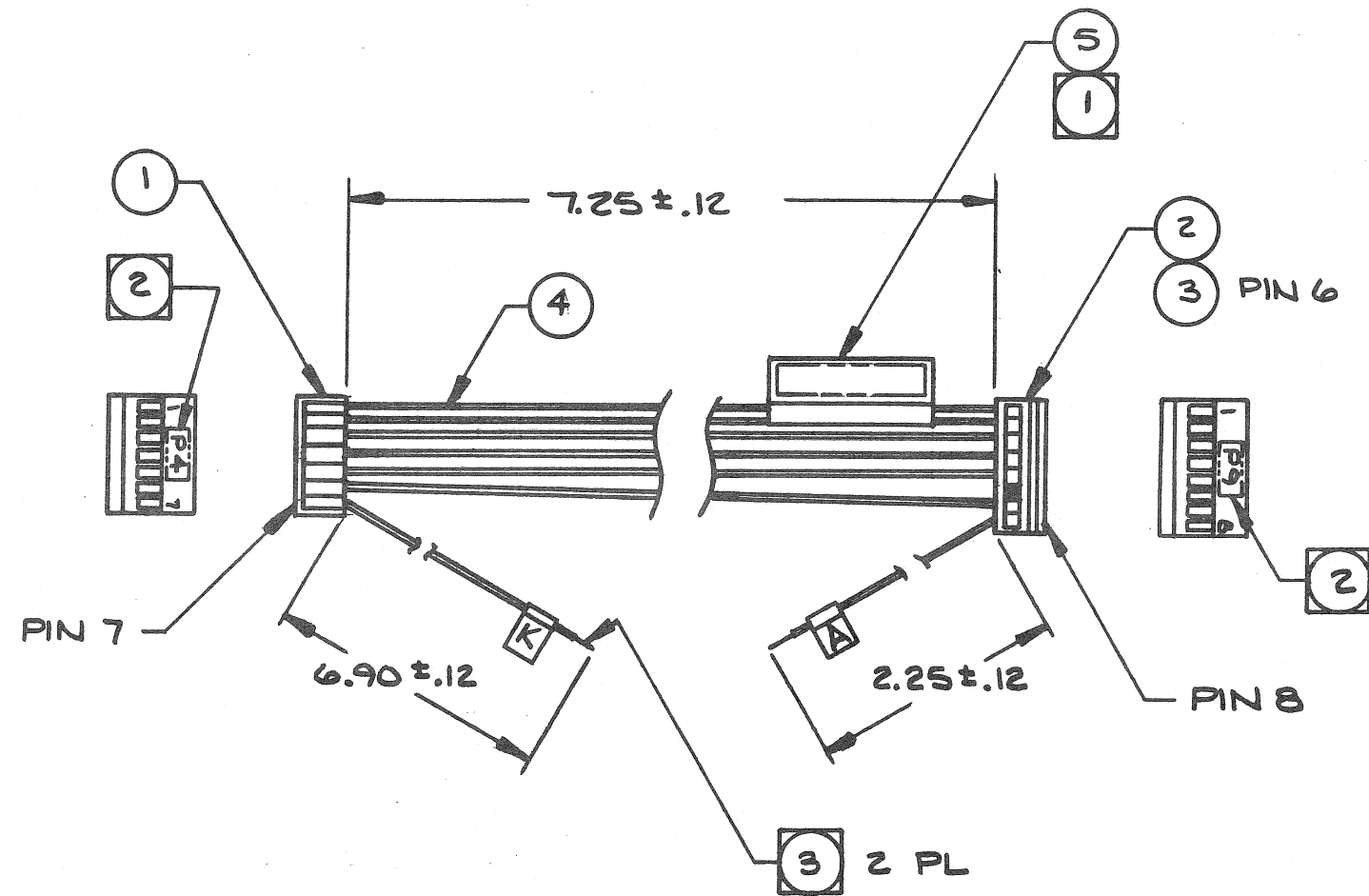
S 7 0 1 1 M P 207072-001 A  
ASSEMBLY PARTS NUMBER

ASSEMBLY TITLE: ASSY, DIODE - MOTOR DRIVER, 30 IPS DSC:R DOC CODE: Q100

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207318 - 001	1	HEATSINK - ZENER DIODE		1		
107044 - 001	2	DIODE, ZENER 10w 1N3998		1		
136004 - 500	3	NUT, HEX MACH	#10	1		
150527 - 001	4	TERMINAL - LOCKING LUG		1		
120100 - 001	5	THERMAL COMPOUND		A/R		
207072 - 100	6	ASSY DWG		0		
-						
-						
-						
-						
-						
-						
-						
-						
-						

PREPARED BY	T. Scott	DATE	5-24-82	DWG REL NO.	060482	DATE	06 04 82
CHECKED BY	John Mathews	DATE	5/24/82	NEXT ASSEMBLY	207359	MODEL NO.	0420-30
DESIGN ENGINEER	G. P. [Signature]	DATE	6/14/82	REV	ECO	DATE / SIGNATURE	

REVISIONS				207073-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	



- ③ STRIP WIRE ENDS BACK .19 AND LABEL AS SHOWN.
- ② MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- ① MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX ± — ANGULAR .XXX ± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN MATTHES 5/20/82 CHECK Kam Malhousi 6/1/82 APPR. G. Perez 4/1/82	 Garden Grove Division	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.		
	MATERIAL FINISH MODEL No. QB NEXT ASSY			ASSY, CABLE - MOTOR DRIVER PWB, 30 IPS	CODE Q115 QTY REQD. 1
	DSC : R	SCALE 1/1 SIZE B		207073-100	REV. A
	DO NOT SCALE THIS DRAWING CODE IDENT			SHEET 1 OF 1	





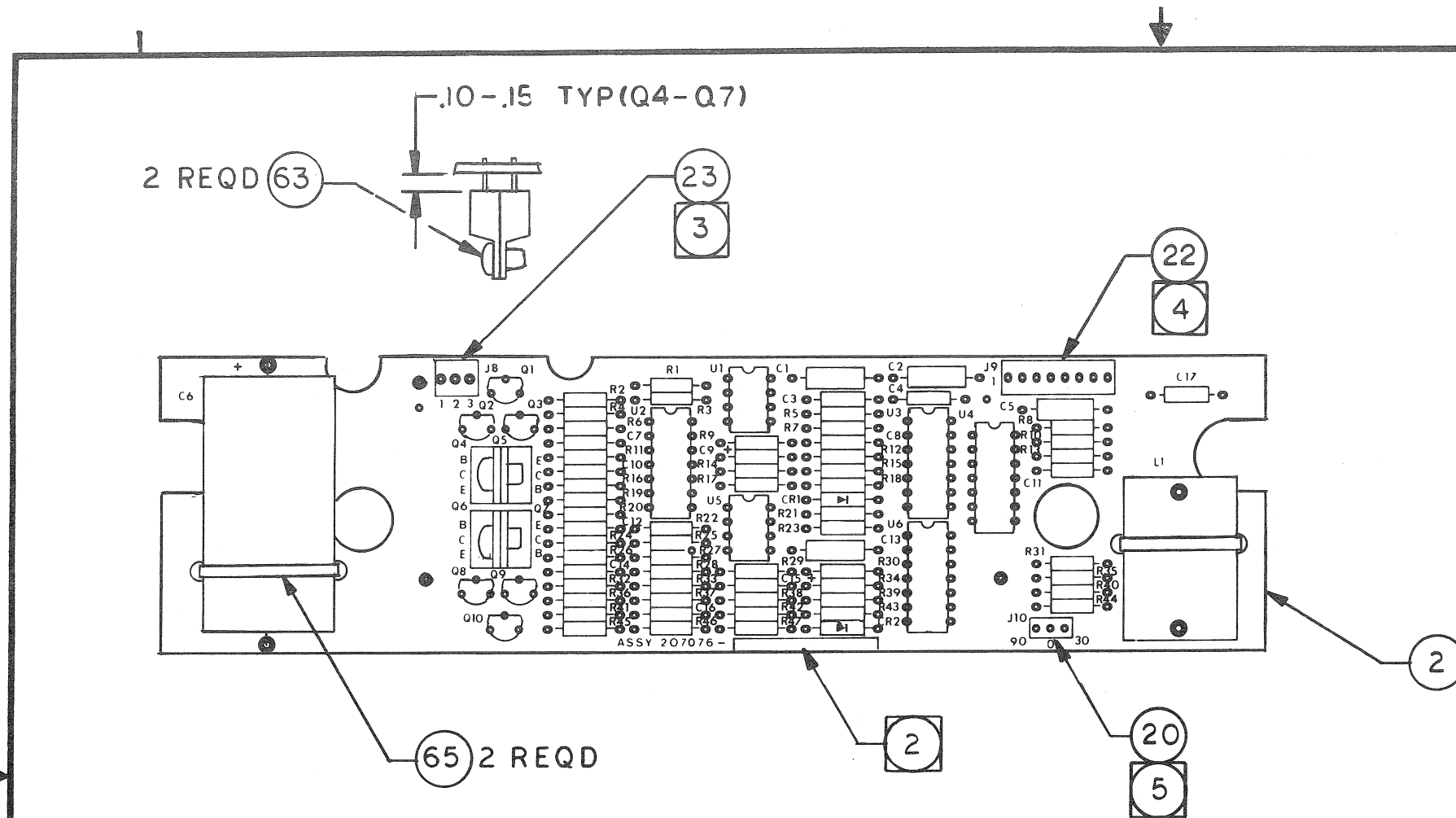
ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207073 - 001 A

ASSY, CABLE - MOTOR DRIVER PWB, 30 IPS DSC: R Q115

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
105081-607	1	CONNECTOR HSG - 7 POS.	P4	1		
105081-608	2	CONNECTOR HSG - 8 POS.	P9	1		
130006-001	3	KEY, CONNECTOR HSG		1		
100053-926	4	WIRE, HOOKUP	26 AWG WHITE	58		06
133500-001	5	CABLE MARKER		1		
207073-100	6	ASSY DWG		0		
-						
-						
-						
-						
-						
-						
-						
-						

PREPARED BY T. Scott	DATE 5-24-82	ISS 8/24/82	DATE 5/24/82	DWG REL NO. 820703	DATE 05 24 82
CHECKED BY D. Makrow	DATE 5/24/82	PROD. REL PER	DATE 6/14/82	REV 01	DATE/SIGNATURE 4/24/82
DESIGN ENGINEER G. Perry				REV ASSEMBLY 207359	
				MODEL NO. 0420-30	



REVISIONS				207076-100	D
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
XI					
OI	PILOT REL PER ERO 820426	KMM			
A	PROD. REL PER ERO 820448	Kam	1/24/83		
B	ECO 12595	Jax	3/23/83	R. Parker	
C	ECO 12616		4/5/83	R. Parker	
D	REVISED AND REDRAWN PER ECO 12738	Kam	8/9/83	R. Parker	

6. SECURE C6 WITH RTV AFTER ASSEMBLY.
5. INSTALL JUMPER ON J10 FROM CENTER PIN TO APPROPRIATE PIN INDICATING DESIRED SPEED
4. CUT OFF PIN 6 (KEY POSITION) WITHIN .030
3. CUT OFF PIN 1 (KEY POSITION) WITHIN .030
2. MARK PART NUMBER, APPROPRIATE DASH NUMBER AND LATEST REVISION LETTER PER CIPHER DATA PRODUCTS SPEC 100037-001
1. FOR SCHEMATIC SEE DRAWING NUMBER 207076-200
- NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX ± — ANGULAR .XXX ± — = — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES — ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN	T.LINDMAN	8-4-82	 Garden Grove Division	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
	CHECK	Kam Mahajan	10/5/82			
	APPR.	R. Parker	10/6/82			
	MATERIAL	ASSEMBLY - MOTOR DRIVER			CODE	Q
	FINISH				QTY REQ'D	1
MODEL No.	QUARTERBACK			SCALE	1/1	
NEXT ASSY				SIZE	B	
DSC:R				207076-100		
DO NOT SCALE THIS DRAWING				CODE IDENT		
SHEET				1	OF 1	



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207076-001 D

ASSEMBLY TITLE MOTOR DRIVER DSC: R DOC CODE Q 120

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes handwritten signatures and dates.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207076-001 D

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207076-001 D

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207076-001 D

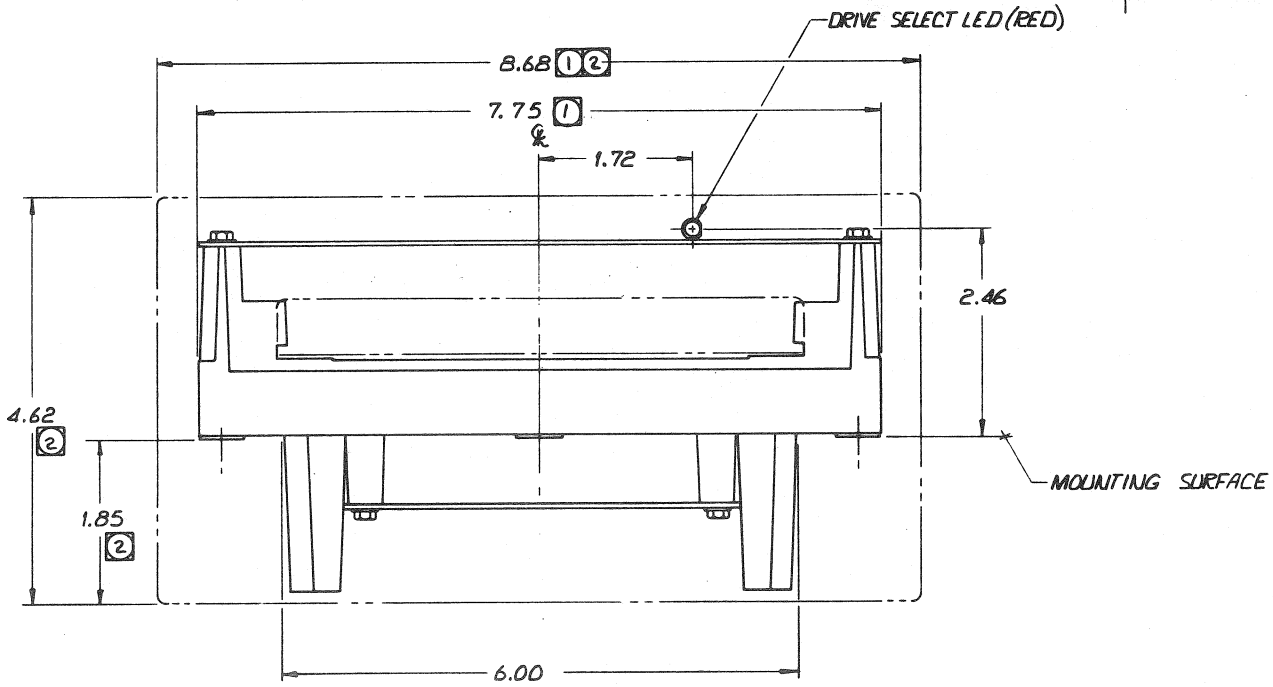
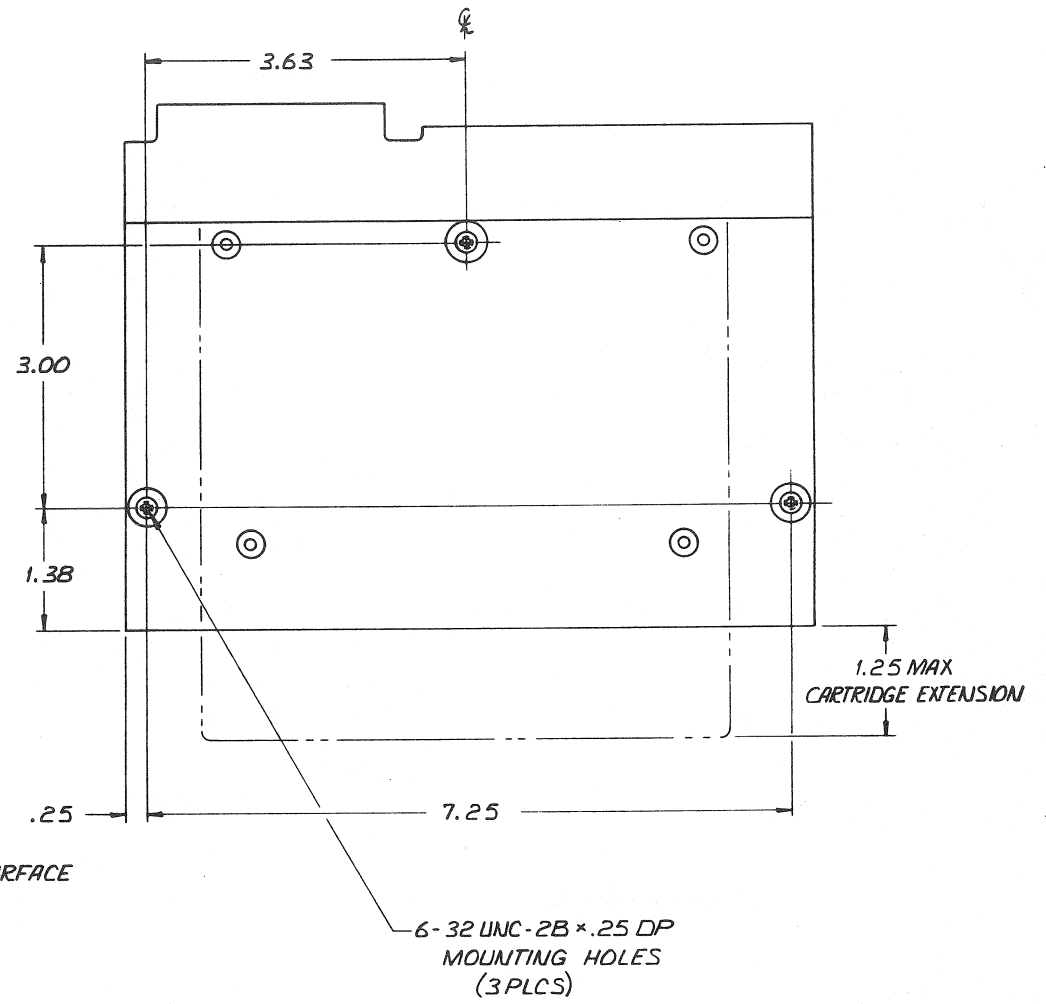
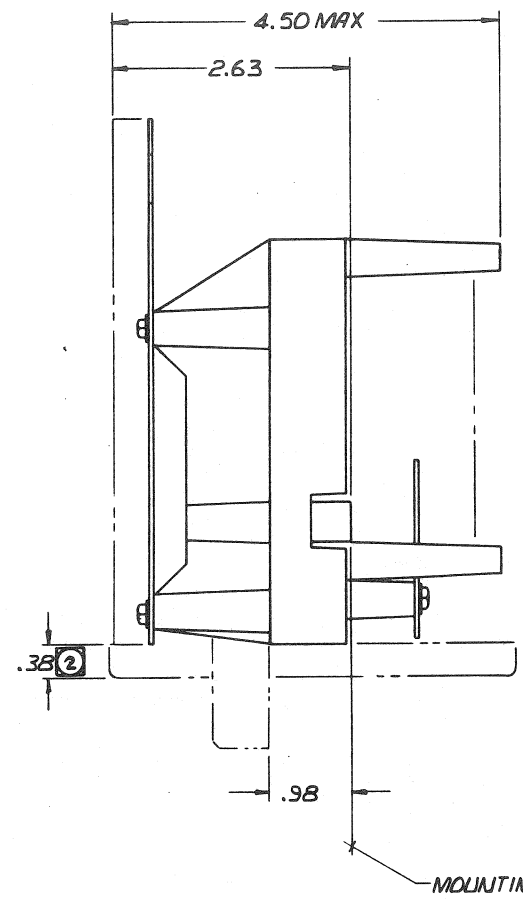
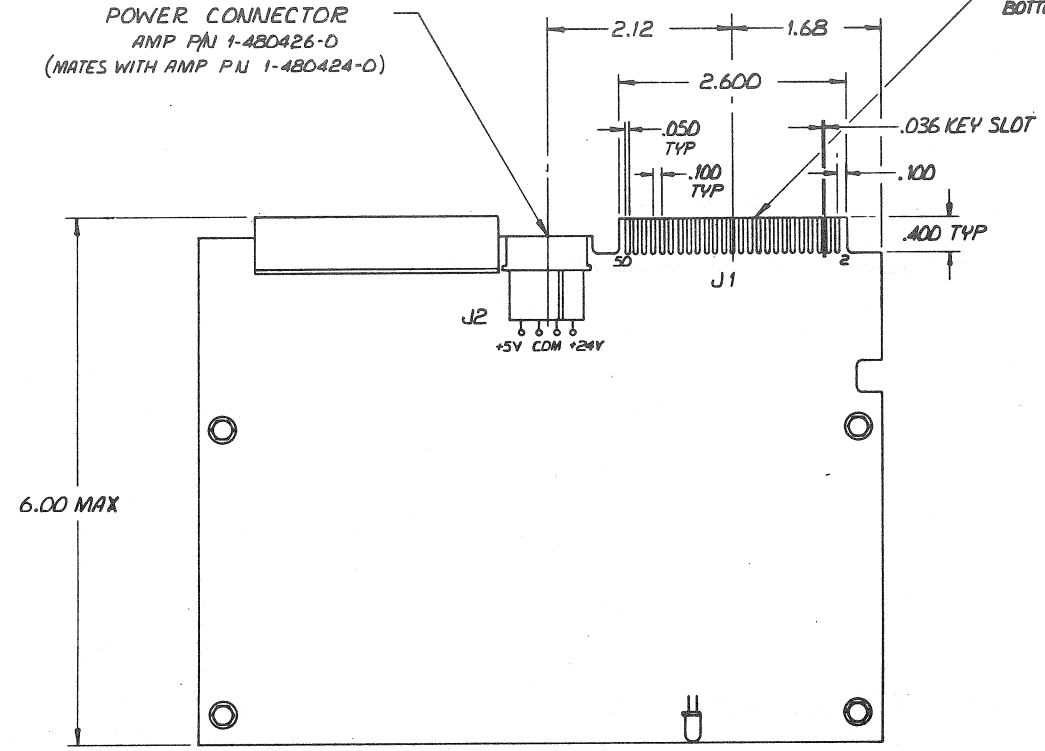
Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE.

8 7 6 5 4 3 2 1

REVISIONS				207302-001A	
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	NP	7/26/81	CK	7/27/81
O1	FIL REL ERO 820309	KAM	3/5/82		
O1	ECO 12350	KAM	8/19/82		
A	PROD REL ERO 820421/A				

POWER CONNECTOR  
AMP P/N 1-480426-D  
(MATES WITH AMP P/N 1-480424-D)

INPUT/OUTPUT CONNECTOR  
TOP (COMPONENT) SIDE: EVEN NUMBERED FINGERS  
BOTTOM (SOLDER) SIDE: ODD NUMBERED FINGERS  
(MATES WITH 3M P/N 3415-0001 OR EQUIV.)



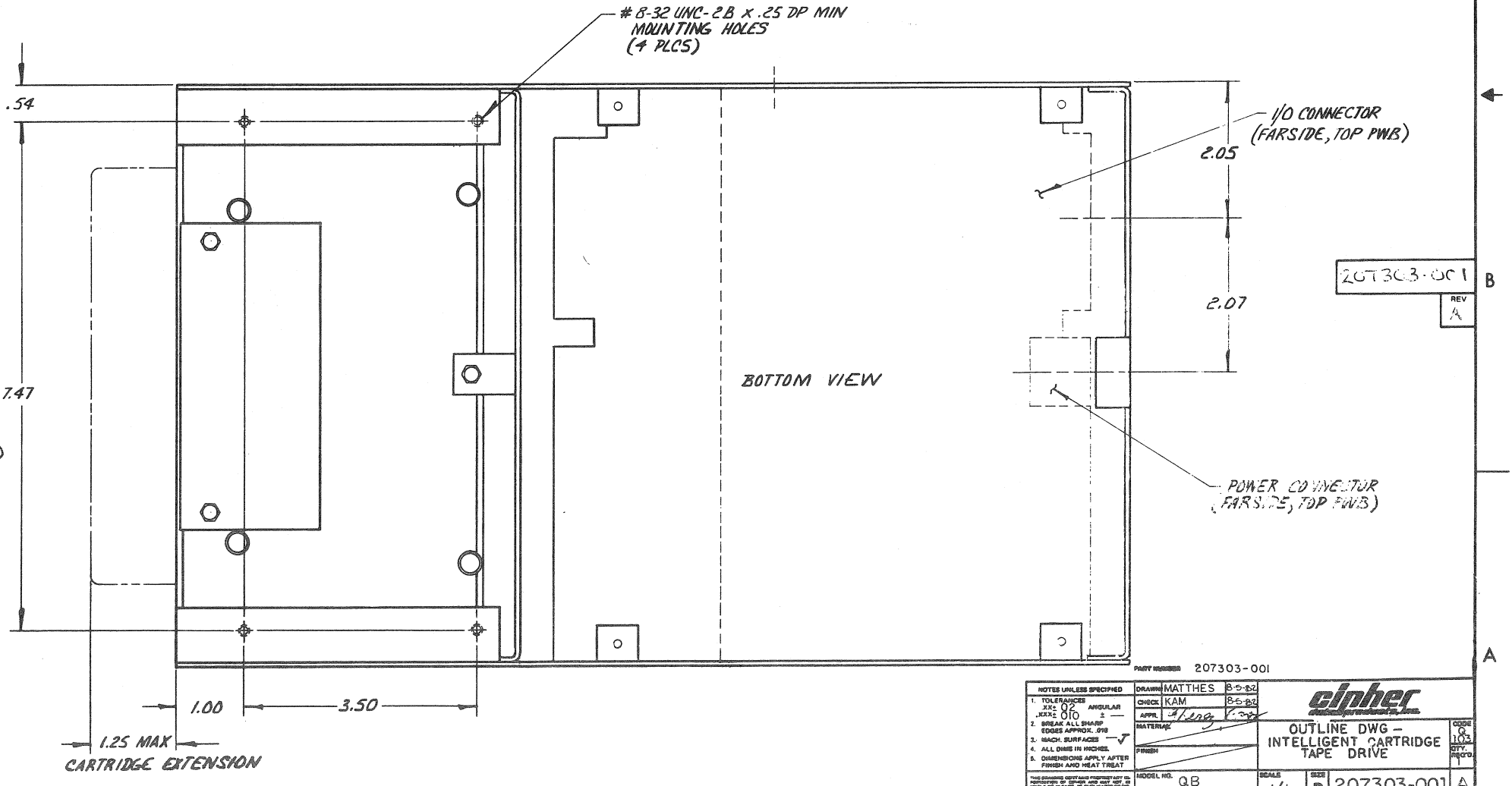
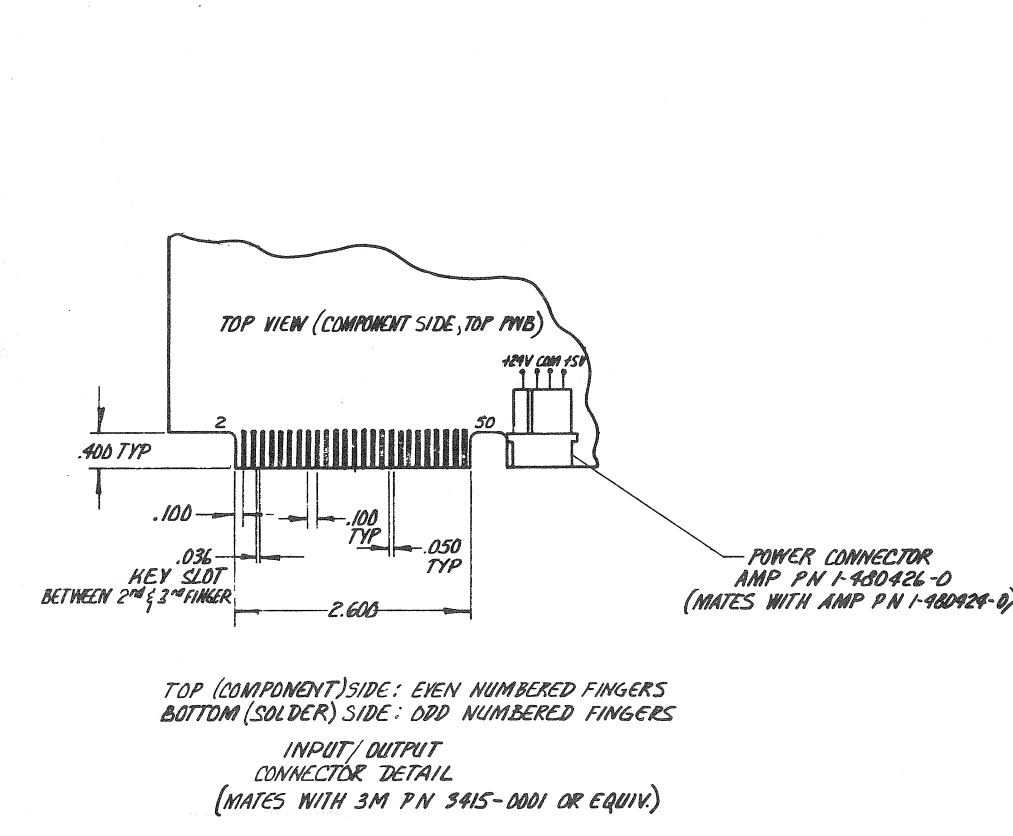
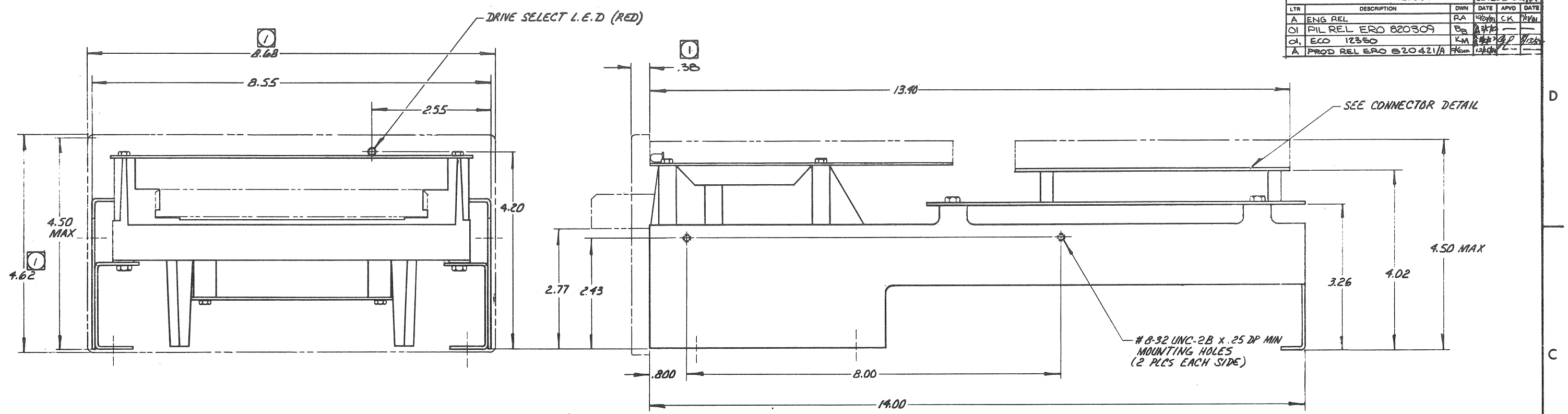
(2) OPTIONAL FRONT PLATE DIMENSIONS  
(1) SYMMETRICAL ABOUT Q WITHIN .01  
NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207302-001

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX ± .02 ANGULAR .XXX ± .010 ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN	MATTHES	8-3-82		CODE Q 103 QTY. REQ'D 1
	CHECK	KAM	8-3-82		
	APPR.	<i>[Signature]</i>	7-31-82		
	MATERIAL				
FINISH			MODEL NO. QB	SCALE 1/1	SIZE D
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.			NEXT ASSY 207350	DO NOT SCALE THIS DRAWING	CODE IDENT 52465
				SHEET 1 OF 1	1-460601-307

8 7 6 5 4 3 2 1

REVISION					
LTR	DESCRIPTION	DWN	DATE	APVD	DATE
A	ENG REL	RA	12/29/81	CK	1/1/82
01	PIL REL ERO 820309	B	8/2/81		
01	ECO 12380	KM	8/2/81		1/28/82
A	PROD REL ERO 820421/A	KM	12/10/81		



OPTIONAL FRONT PLATE DIMENSIONS.

NOTES UNLESS SPECIFIED		DRW: MATTHES 8-5-82		OUTLINE DWG - INTELLIGENT CARTRIDGE TAPE DRIVE	103 REV.
1. TOLERANCES	± .02 ANGULAR	CHECK: KAM 8-5-82			
2. BREAK ALL SHARP EDGES APPROX. .015		APPR: J. LAG 1-27-82			
3. MACH. SURFACES		MATERIAL: 303 STAINLESS STEEL	FINISH: POLISHED	MODEL NO. QB	SCALE: 1/1
4. ALL DIMS IN INCHES				207303-001	146051-308
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT					

DSC:R







ASSEMBLY PARTS LIST

S 7 0 1 1 207304 - 001 REV B

ASSEMBLY TITLE ASSY, MAIN FRAME DSC:R DOC CODE Q100

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include: 207314 - 001 ASSY, DRIVE MOTOR; 207324 - 001 ASSY, SENSOR; 207309 - 001 ROLLER - DETENT (MOLDED); 207308 - 001 SPRING - DETENT; 135001 - 001 MOUNT - SHOCK; 145026 - 306 SCREW - WASHER HD HEX 6-32X3/8; 145027 - 306 SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD; 145027 - 304 SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD; 100256 - 002 WASHER - BELLEVILLE; 163010 - 003 WASHER - FLAT; 145026 - 308 SCREW - WASHER HD HEX, INDENTED 6-32 X 1/2; 100465 - 003 ADHESIVE-ACCELERATOR; 207311 - 001 MAIN FRAME; 207329 - 001 ASSY, CARRIAGE.

Prepared by Sue Redmond, DATE 1-15-82, DWG REL NO. 820287, DATE 2 1 82, PART ASSEMBLY 207358/207359, MODEL NO. 0420-30/90.

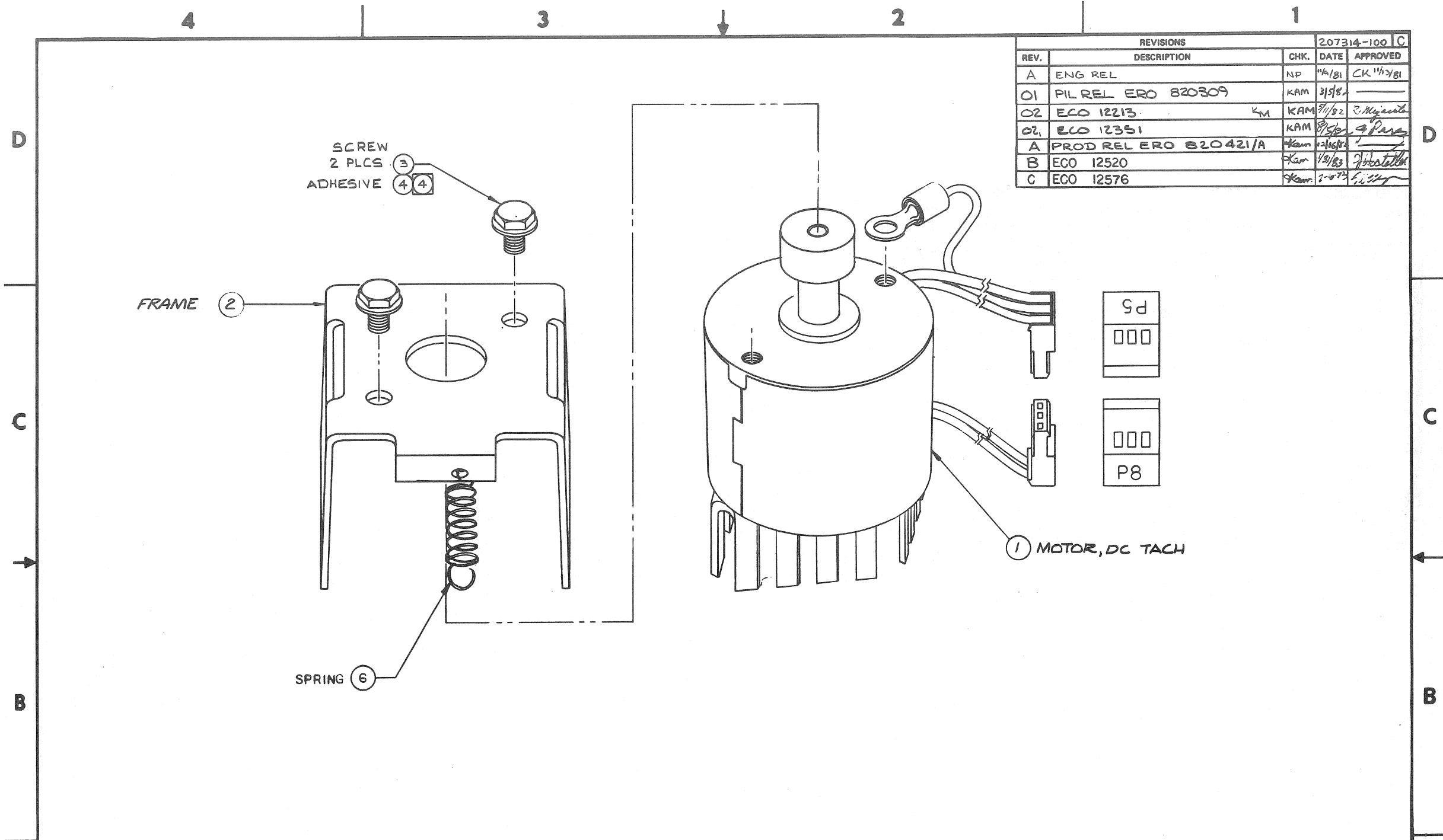


ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207304 - 001 REV B

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Rows include: 207304 - 100 ASSEMBLY DRAWING; 207377 - 001 BRACKET, DRIVE MOTOR; 207376 - 001 SPRING, CARTRIDGE; 100050 - 301 WASHER, FLAT NYLON .192 ID X .50 OD X .010; 100293 - 104 SCREW, BUT. HD. BLK 4-40 X 1/4.

REVISIONS					207314-100	C
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL	NP	11/1/81	CK	11/3/81	
01	PIL REL ERO 820309	KAM	3/5/81			
02	ECO 12213	KM	7/1/82	R. M. ...		
02	ECO 12351	KAM	8/5/81	J. ...		
A	PROD REL ERO 820421/A	Kam	12/16/81			
B	ECO 12520	Kam	1/9/83	J. ...		
C	ECO 12576	Kam	2-10-77	J. ...		



- 5 MARK REFERENCE DESIGNATION PER CDP SPEC 100013-001
- 4 APPLY ONE DROP OF ADHESIVE TO EACH SCREW BEFORE INSTALLATION
- 3. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

2. CONFIGURATION WITH SHORT CAPSTAN SHANK AND LONG MOTOR SHAFT IS ACCEPTABLE.  
 1. ORIENT SEAM ON DRIVE MOTOR CASE AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE W/L

DRAWN	MATTHES	7-29-82	<b>cipher</b> data products, inc.		CODE Q 100
CHECK	MAKHANI	7-29-82			
APPR.	<i>J. ...</i>	1/31/83			QTY. REQ'D. 1
MATERIAL				ASSY, DRIVE MOTOR	
FINISH					
MODEL NO.	QB	SCALE	2/1	SIZE	C
NEXT ASSY	207304	DO NOT SCALE THIS DRAWING	CODE IDENT	52465	SHEET 1 OF 1
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.					

DSC:R

FORM 383 (R. 10/77)

1160601-421



ASSEMBLY PARTS LIST

S 7 0 1 1 207314 -001 C

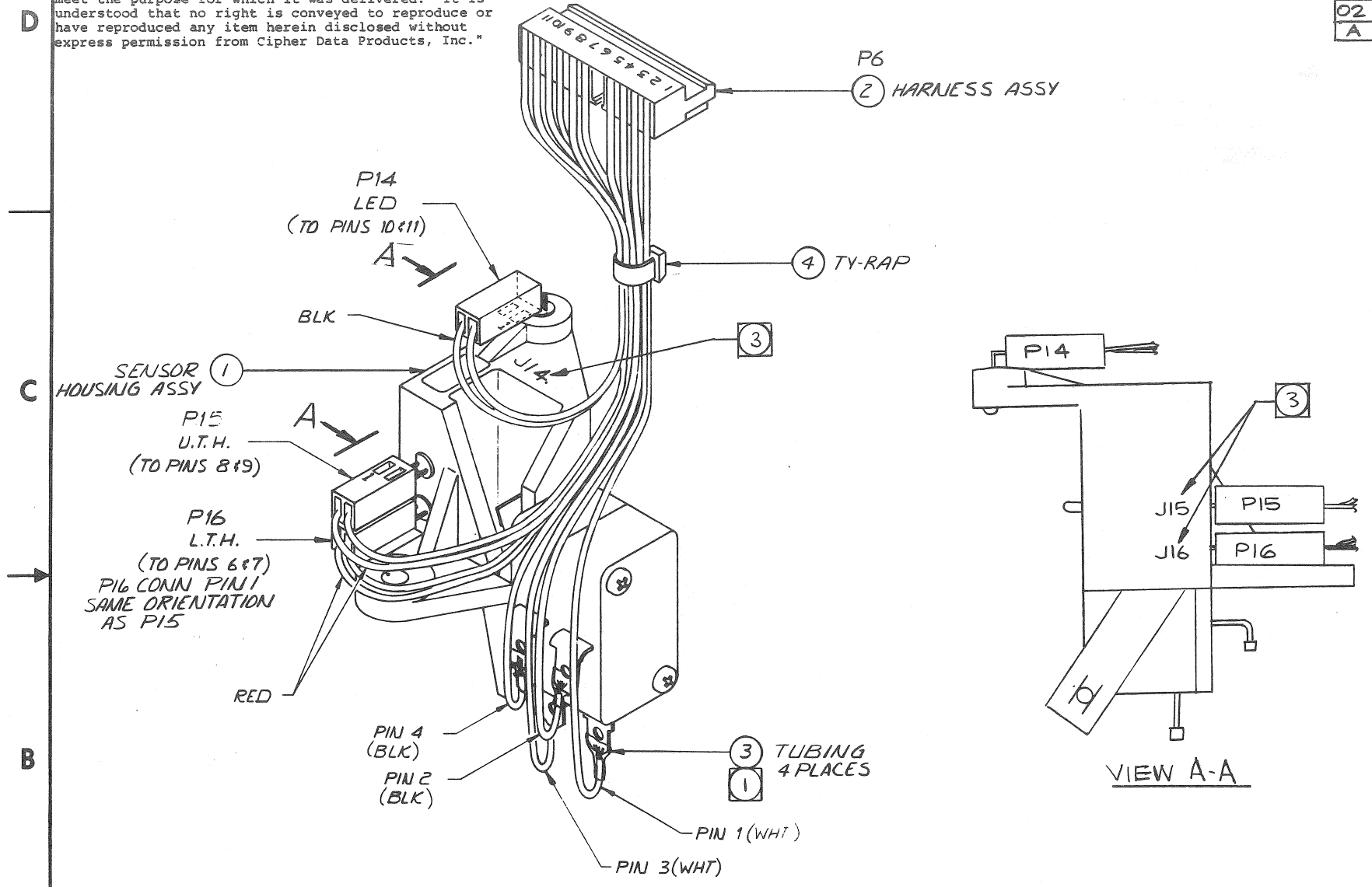
ASSEMBLY TITLE ASSY, DRIVE MOTOR DSC:R DSC CODE @100

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207362 - 001	1	MOTOR, DC TACH		1		
207315 - 001	2	FRAME, MOTOR		1		
145026 - 304	3	SCREW, WASHER HD HEX 6-32 X 1/4		2		
100303 - 004	4	ADHESIVE / SEALANT (LOCTITE)	BLUE	A/R		
207314 - 100	5	ASSEMBLY DRAWING		0		
207379 - 001	6	SPRING, CAPSTAN		1		
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

PREPARED BY	Sue Redmond	DATE	1-15-82	REV	B	12520	1/15/82	DATE	820287	DATE	2 1 1 8 2
CHECKED BY	J.P.S.	DATE	1-26-82	REV	A	12520	1/26/82	DATE	820287	DATE	2 1 1 8 2
DESIGN ENGINEER	J.P.S.	DATE	1-27-82	REV	02	12213	1/27/82	DATE	207304	DATE	2 1 1 8 2
		DATE		REV	01	12576	1/27/82	DATE	0420-30/90	DATE	2 1 1 8 2

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REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/81	CK 11/3/81
01	PIL REL ERO 820309	KAM	3/5/82	
01	ECO 12351	KM	8/5/82	9 Pers
02	ECO 12464	KM	7/2/82	5/2/82
A	PROD REL ERO 820421/A	SKM	11/82	



- ③ RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 2. BAG & TAG PART NO., APPROPRIATE DASH NO & LATEST REVISION LEVEL PER CDP SPEC 100037-001
- ① SOLDER WIRES TO SWITCH, COVER WITH ITEM 3 TUBING.

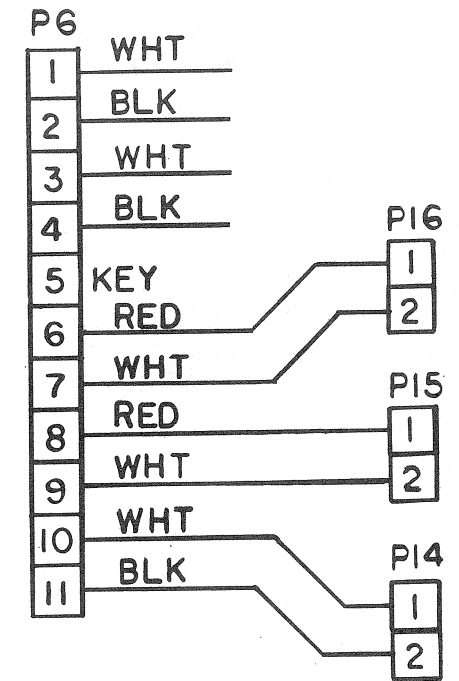
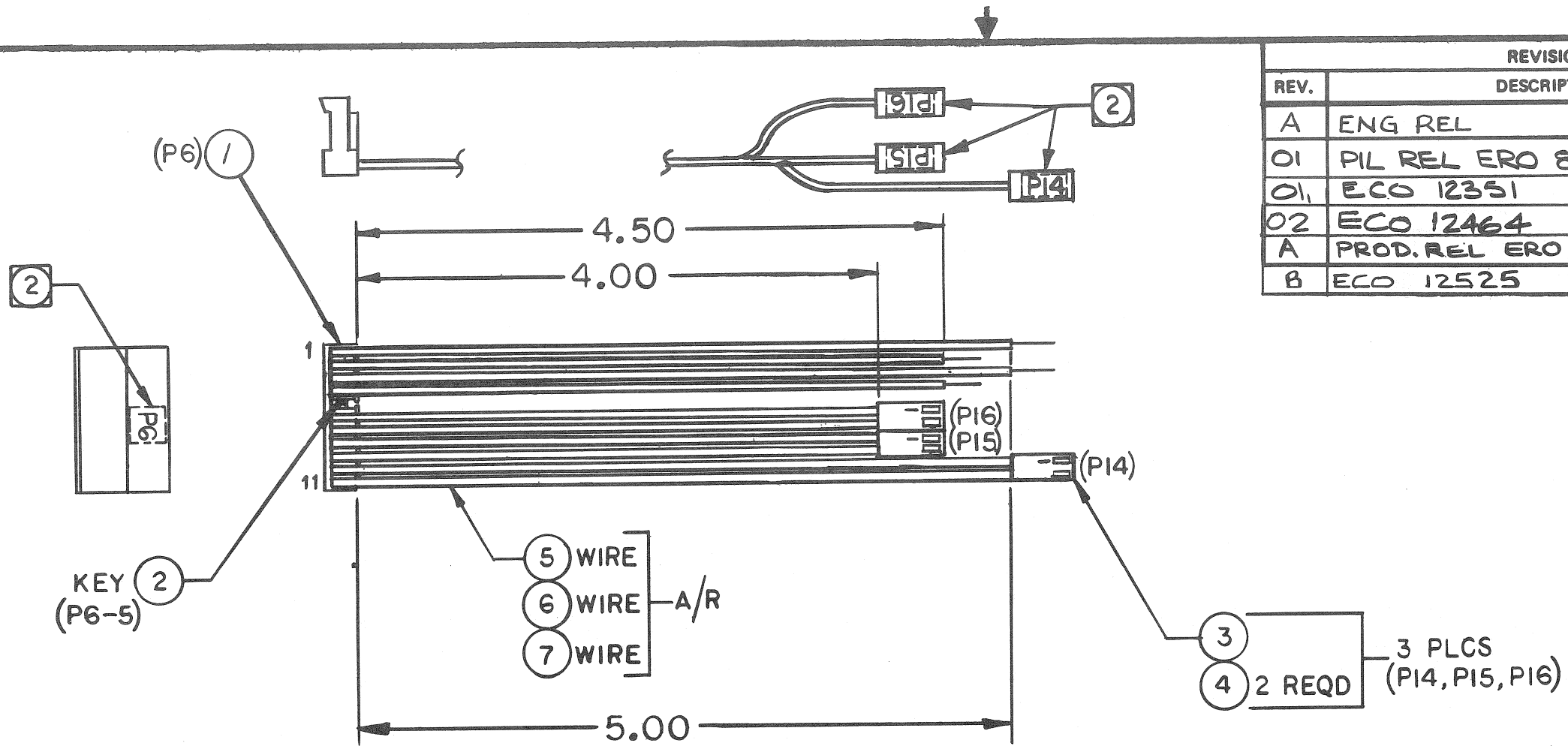
NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-29-82	<b>cipher</b> data products, inc.	SENSOR ASSY	CODE Q 100 QTY. REQ'D 1
1. TOLERANCES .XX± ——— ANGULAR .XXX± ——— ±	CHECK	KAM	7-29-82			
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.					
3. MACH. SURFACES ✓	MATERIAL			SCALE 2/1	SIZE C	207324-100
4. ALL DIMS IN INCHES.	FINISH					
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB		DO NOT SCALE THIS DRAWING	CODE IDENT	52465
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	NEXT ASSY	207304				



REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/9/81	CK 11/13/81
01	PIL REL ERO 820309	EB	3/5/82	
01	ECO 12351	KM	8/5/82	9/2/82
02	ECO 12464	KW	9/2/82	9/2/82
A	PROD. REL ERO 820421/A	Kam	12/14/82	
B	ECO 12525	Kam	2-3-83	4/1/83



WIRING DIAGRAM

PART NUMBER SEE SEPARATE M/L

- ② RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 1. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

DSC:R

DRAWN	MATTHES	7-29-82	<b><i>cipher</i></b> data products, inc.		HARNESS ASSY-SENSOR	CODE	Q
CHECK	KAM	7-29-82				115	
APPR.	J.K	2-3-83				QTY. REQ'D.	1
MATERIAL					207326-100	SCALE	1/1
FINISH						SIZE	B
MODEL NO.	QB				52465	DO NOT SCALE THIS DRAWING	CODE IDENT
NEXT ASSY	207324					SHEET	1 OF 1





ASSEMBLY PARTS LIST

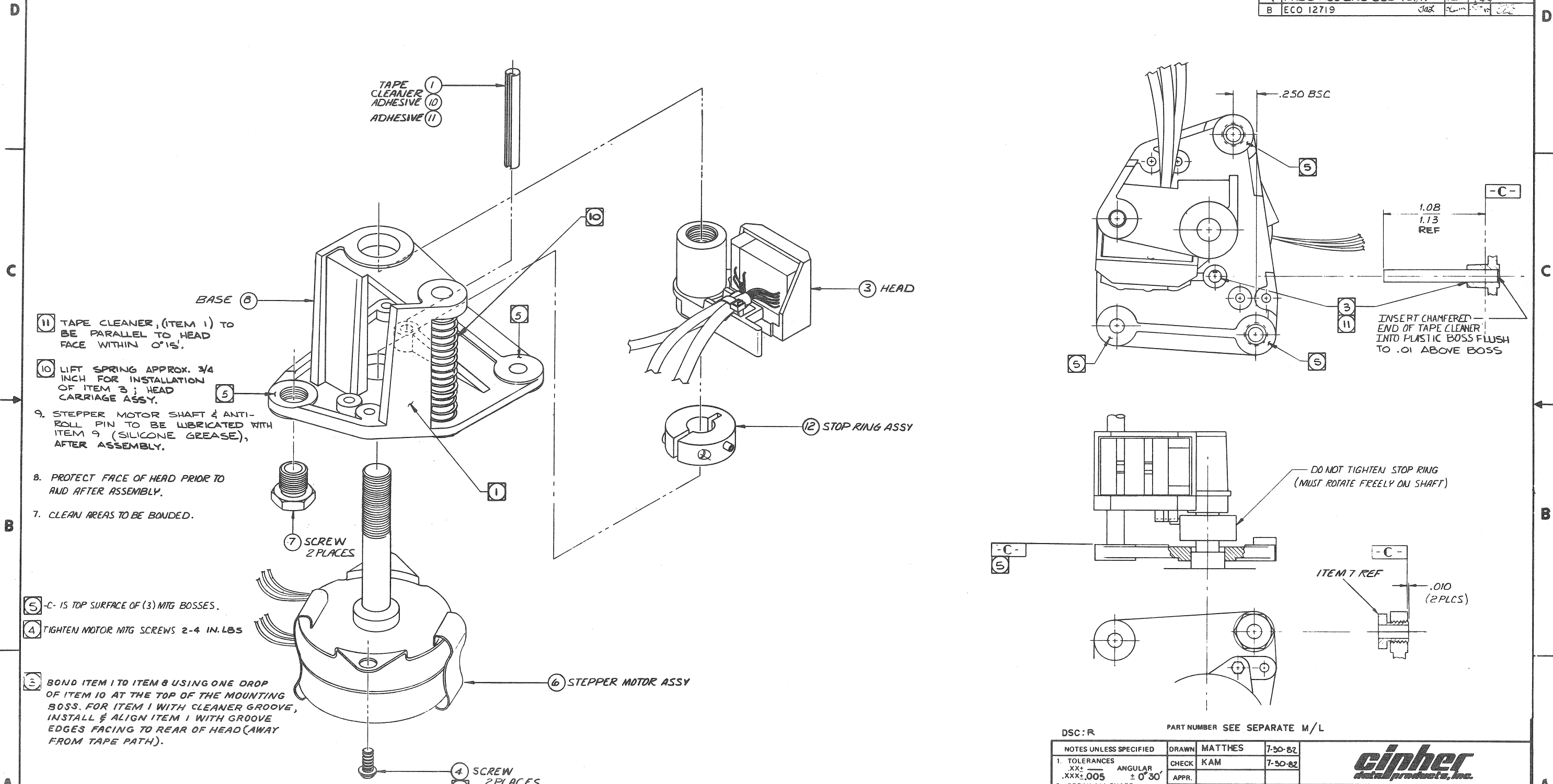
S 7 0 1 1 M P 207326 - 001 REV 6

ASSEMBLY TITLE: ASSY, HARNESS - SENSOR DSC:R DDC CODE: Q115

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
105081 - 611	1	CONNECTOR, HOUSING	P6	1		
130006 - 001	2	KEY, CONNECTOR HOUSING		1		
105082 - 001	3	CONNECTOR, HOUSING	P14,P15,P16	3		
106017 - 101	4	CONTACT, CRIMP 22-30GA		6		
100053 - 026	5	WIRE, HOOKUP 26 AWG, BLACK		18		06
100053 - 226	6	WIRE, HOOKUP 26 AWG, RED		11		06
100053 - 926	7	WIRE, HOOKUP 26 AWG, WHITE		28		06
207326 - 100	8	ASSEMBLY DRAWING		0		
-						
-						
-						
-						
-						
-						

PREPARED BY: Sue Redmond	DATE: 1-14-82	REV: A	ECO: 820421A	DATE/SIGNATURE: [Signature]	DWG REL NO: 820287	DATE: 2/1/82
CHECKED BY: [Signature]	DATE: 1-26-82	REV: [Signature]	ECO: [Signature]	DATE/SIGNATURE: [Signature]	NEXT ASSEMBLY: M M D D Y Y	
DESIGN ENGINEER: [Signature]	DATE: 1-29-82	REV: 03	ECO: 12464	DATE/SIGNATURE: [Signature]	MODEL NO: 207324	
		REV: 02	ECO: 12341	DATE/SIGNATURE: [Signature]	MODEL NO: 0420-30/90	
		REV: 01	ECO: PILREL	DATE/SIGNATURE: [Signature]		

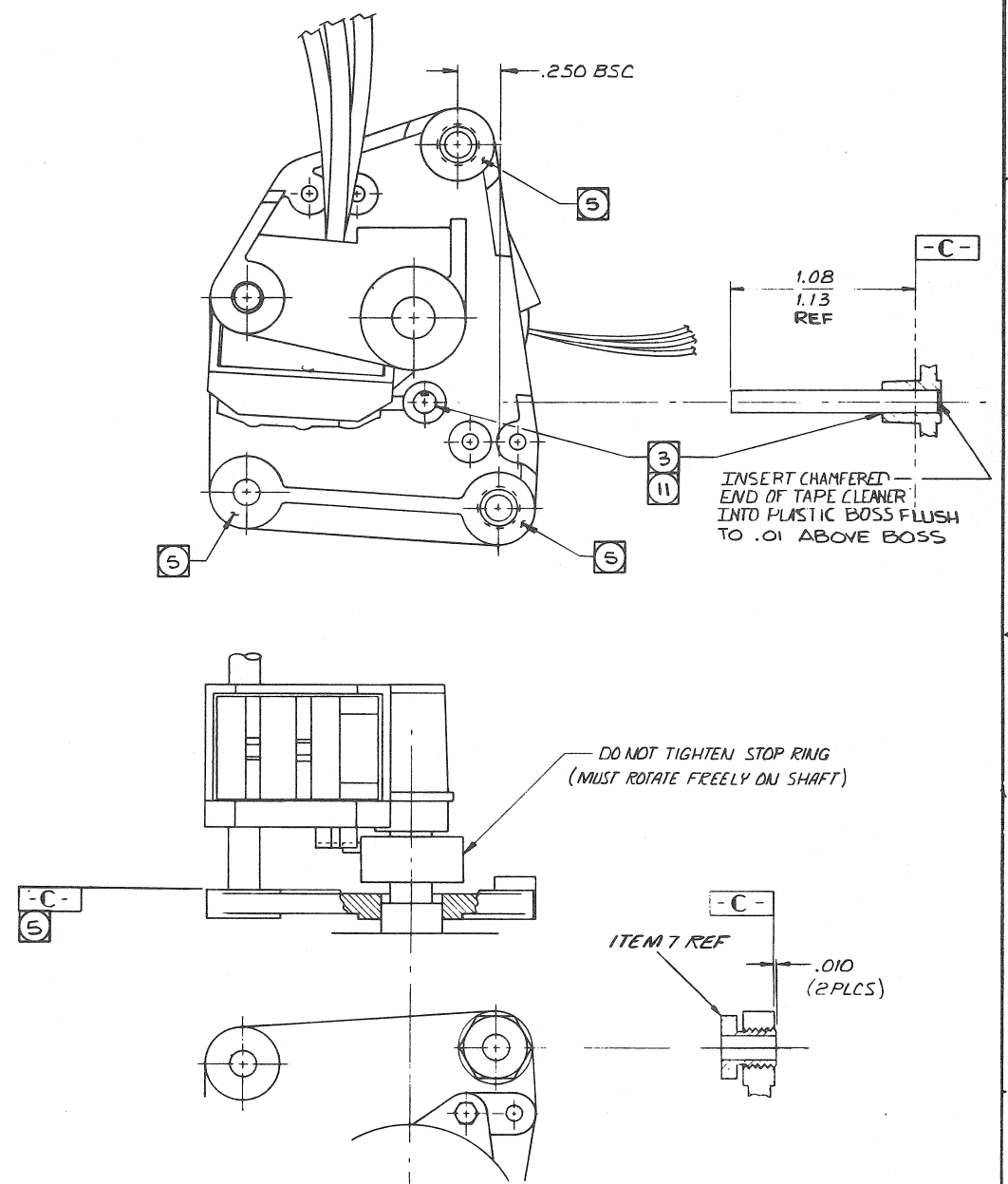
REVISIONS				207329-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL	NF	4/3/81	LK	11/1/81
01	PIL REL ERO 820309	KAM	3/5/81		
02	ECO 12128	KM	KAM		2/24/82
02	ECO 12351	KM	KAM		2/24/82
1	PROD REL ERO 820421/A				
B	ECO 12719	Jax			



- 11 TAPE CLEANER, (ITEM 1) TO BE PARALLEL TO HEAD FACE WITHIN 0°15'.
- 10 LIFT SPRING APPROX. 3/4 INCH FOR INSTALLATION OF ITEM 3; HEAD CARRIAGE ASSY.
- 9 STEPPER MOTOR SHAFT & ANTI-ROLL PIN TO BE LUBRICATED WITH ITEM 9 (SILICONE GREASE), AFTER ASSEMBLY.
- 8. PROTECT FACE OF HEAD PRIOR TO AND AFTER ASSEMBLY.
- 7. CLEAN AREAS TO BE BOUNDED.
- 5 -C- IS TOP SURFACE OF (3) MTG BOSSES.
- 4 TIGHTEN MOTOR MTG SCREWS 2-4 IN. LBS
- 3 BOND ITEM 1 TO ITEM 8 USING ONE DROP OF ITEM 10 AT THE TOP OF THE MOUNTING BOSS. FOR ITEM 1 WITH CLEANER GROOVE, INSTALL & ALIGN ITEM 1 WITH GROOVE EDGES FACING TO REAR OF HEAD (AWAY FROM TAPE PATH).

1 MARK PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100031-001

NOTES: UNLESS OTHERWISE SPECIFIED



DSC:R		PART NUMBER SEE SEPARATE M/L				<b>CARRIAGE ASSY</b> CODE Q 100 QTY. REQ'D 1
1. TOLERANCES .XX± ANGULAR .XXX±.005 ± 0°30' 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN MATTHES 7-30-82 CHECK KAM 7-30-82 APPR. MATERIAL FINISH	MODEL NO. QB NEXT ASSY 207304	SCALE 2/1 SIZE D CODE IDENT 52465			



ASSEMBLY PARTS LIST

S 7 0 1 1 207329 -001 REV B

ASSEMBLY TITLE ASSY, CARRIAGE DSC:R Q100

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207331 - 001	1	TAPE CLEANER		1		
-	2					
207322 - 001	3	ASSY, HEAD/CARRIAGE		1		
145027 - 304	4	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD	NO. 6-19x1/4	2		
-	5					
207327 - 001	6	ASSY, STEPPER MOTOR		1		
207339 - 001	7	SCREW - ADJUSTMENT		2		
207334 - 001	8	ASSY, CARRIAGE BASE		1		
100409 - 001	9	GREASE, SILICONE	DOW III	A/R		
100465 - 002	10	ADHESIVE		A/R		
100465 - 003	11	ADHESIVE		A/R		
207332 - 001	12	ASSY, STOP RING		1		
207329 - 100	13	ASSEMBLY DRAWING		0		

PREPARED BY	Sue Redmond	DATE	1-15-82	REV	B	12719	DATE	1/15/82
CHECKED BY	J.P. [Signature]	DATE	1-26-82	REV	A	12719	DWG REL NO.	820287
DESIGN ENGINEER	J.P. [Signature]	DATE	1-29-82	REV	A	12719	DATE	2/1/82
				REV	02	12128	NEXT ASSEMBLY	M M D D Y Y
				REV	01	PILREL	MODEL NO.	207304
				REV	ECO		MODEL NO.	0420-30/90

8

7

6

5

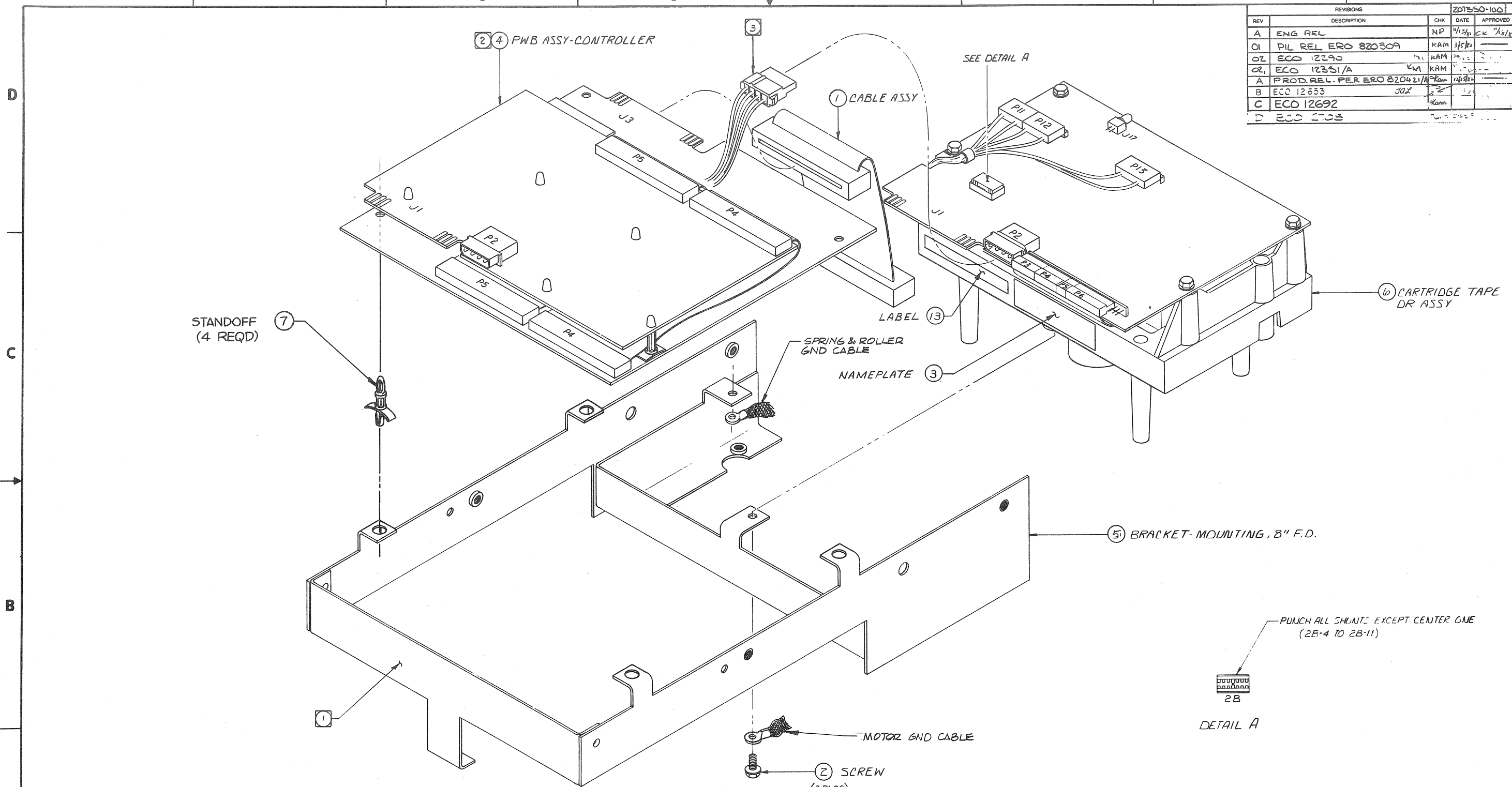
4

3

2

1

REVISIONS				207350-100	
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	NP	11/2/82	CK	11/2/82
01	PIL REL ERO 820309	KAM	3/5/82		
02	ECO 12390	KAM	2/2/82		
02	ECO 12351/A	KAM	1/1/82		
A	PROD. REL. PER ERO 820421/A	KAM	11/8/82		
B	ECO 12653	JAL	2/2/82		
C	ECO 12692	KAM	2/2/82		
D	ECO 12708				



STANDOFF (4 REQD) (7)

SPRING & ROLLER GND CABLE

NAMEPLATE (3)

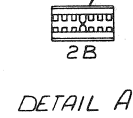
(5) BRACKET-MOUNTING, 8" F.D.

(6) CARTRIDGE TAPE DR ASSY

MOTOR GND CABLE

(2) SCREW (3PLCS)

PUNCH ALL SHUNTS EXCEPT CENTER ONE (2B-4 TO 2B-11)



1. STAMP FINAL ASSY P/N & REV ON SURFACE INDICATED.
2. BREAK CONTROLLER PWB (ITEM 4) AT SLOTS BETWEEN P4 & P5 CABLES. CUT OFF EXCESS TABS AND MOUNT SMALLER HALF ONTO (5) PLASTIC SUPPORT POSTS ON LARGER HALF.
3. ROUTE POWER CABLE BETWEEN CONTROLLER BOARDS.

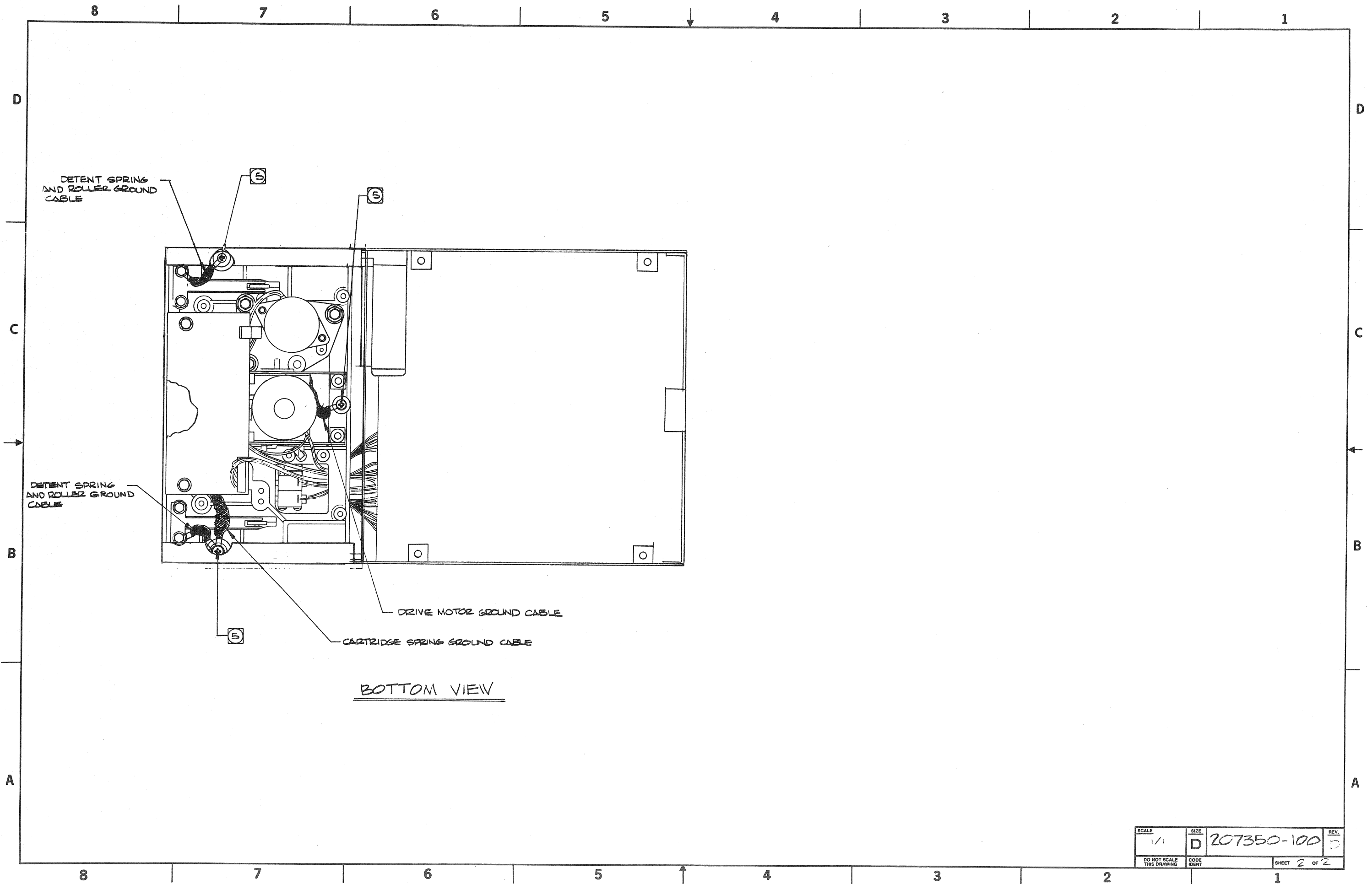
NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-29-82	<b>cipher</b> data products, inc.	CODE Q 101 QTY. REQ'D 1
1. TOLERANCES .XX± — ANGULAR .XXX± — ±	CHECK	KAM	7-29-82		
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.			MTT-F420 PICTORIAL	SCALE 1/1 SIZE D 207350-100
3. MACH. SURFACES	MATERIAL				
4. ALL DIMS IN INCHES.	FINISH			MODEL NO. QB	DO NOT SCALE THIS DRAWING
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	NEXT ASSY				

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

52465 SHEET 1 OF 2





ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207350 - 001 D

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC:R DOC CODE: Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Rows include: 207020 - 001 ASSY, CABLE; 145026 - 303 SCREW, WASHER HD HEX, INDENTED 6-32 X 3/16; 207341 - 002 NAMEPLATE, QUARTERBACK TAPE DRIVE; 207005 - 001 ASSY, PWB - CONTROLLER; 940075 - 001 BRACKET, MOUNTING 8" F.D.; 207359 - 003 ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS; 147805 - 002 STANDOFF-LK. CKT. BD. SUP 3/8" Long; 100472 - 001 SHIPPING BAG, PLASTIC - 16 X 14; 950035 - 001 SHIPPING CARTON, OUTER BOX; 950036 - 001 SHIPPING CARTON, INNER FOLD; 207366 - 001 PRODUCT SPEC, QUARTERBACK STREAMING CARTRIDGE TP DR; 207350 - 100 MTT-F420, PICTORIAL; 940012 - 101 LABEL, QUARTERBACK

Prepared by: Sue Redmond, DATE: 1-20-82, DWG REL NO.: 820287, DATE: 2 1 82, CHECKED BY: J.P. [signature], 1-26-82, DESIGN ENGINEER: J.P. [signature], 1-29-82, MODEL NO.: F420-30

FORM 795 (R 03/82)

PAGE 1 OF 2



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207350 - 001 D

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Row: 207305 - 100 LABEL INSTRUCTIONS

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 2



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207350 - 002 D

ASSEMBLY TITLE: MTT-F420, 90 IPS, 4 TK DSC:R DOC CODE: Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Rows include: 207020 - 001 ASSY, CABLE; 145026 - 303 SCREW, WASHER HD HEX INDENTED 6-32 X 3/16; 207341 - 002 NAMEPLATE, QUARTERBACK TAPE DRIVE; 207005 - 002 ASSY, PWB - CONTROLLER; 940075 - 001 BRACKET, MOUNTING 8" F.D.; 207358 - 003 ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS; 147805 - 002 STANDOFF-LK. CKT. BD. SUP 3/8" LONG; 100472 - 001 SHIPPING BAG, PLASTIC - 16 X 14; 950035 - 001 SHIPPING CARTON, OUTER BOX; 950036 - 001 SHIPPING CARTON, INNER FOLD; 207366 - 001 PRODUCT SPEC, QUARTERBACK STREAMING CARTRIDGE TP DR; 207350 - 100 MTT-F420, PICTORIAL; 940012 - 101 LABEL, QUARTERBACK

Prepared by: Sue Redmond, DATE: 1-20-82, DWG REL NO.: 820287, DATE: 2 1 82, CHECKED BY: J.P. [signature], 1-26-82, DESIGN ENGINEER: J.P. [signature], 1-29-82, MODEL NO.: F420-90

FORM 795 (R 03/82)

PAGE 1 OF 2



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207350 - 002 D

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Row: 207305 - 100 LABEL INSTRUCTIONS

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 2



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207350 - 005 E

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC:R DOC CODE: Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Rows include: 207020 - 001 ASSY, CABLE; 145026 - 303 SCREW, WASHER HD HEX, INDENTED 6-32 X 3/16; 207341 - 005 NAMEPLATE, QUARTERBACK TAPE DRIVE; 207005 - 001 ASSY, PWB - CONTROLLER; 940075 - 001 BRACKET, MOUNTING 8" F.D.; 207359 - 004 ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS; 147805 - 002 STANDOFF-LK. CKT. BD. SUP 3/8" LONG; 100472 - 001 SHIPPING BAG, PLASTIC - 16 x 14; 950035 - 001 SHIPPING CARTON, OUTER BOX; 950036 - 001 SHIPPING CARTON, INNER FOLD; 207366 - 001 PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE; 207350 - 100 MTT-F420, PICTORIAL; 940012 - 101 LABEL, QUARTERBACK; 207305 - 100 LABEL INSTRUCTIONS

Prepared by: Sue Redmond, DATE: 7-9-82, DWG REL NO.: 820420, DATE: 9 1 5 82, CHECKED BY: Kam Mahdavi, 7/15/82, DESIGN ENGINEER: K. [signature], 11/1/82, MODEL NO.: F420-30

FORM 795 (R 03/82)

PAGE 1 OF 1



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207350 - 006 H

ASSEMBLY TITLE: MTT-F420, 90 IPS, 4 TK DSC:R DOC CODE: Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Rows include: 207020 - 001 ASSY, CABLE; 145026 - 303 SCREW, WASHER HD HEX INDENTED 6-32 X 3/16; 207341 - 003 NAMEPLATE, QUARTERBACK TAPE DRIVE; 207005 - 002 ASSY, PWB - CONTROLLER; 940075 - 001 BRACKET, MOUNTING 8" F.D.; 207358 - 004 ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS; 147805 - 002 STANDOFF-LK. CKT. BD. SUP 3/8" LONG; 100472 - 001 SHIPPING BAG, PLASTIC - 16 X 14; 950035 - 001 SHIPPING CARTON, OUTER BOX; 950036 - 001 SHIPPING CARTON, INNER FOLD; 207366 - 001 PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE; 207350 - 100 MTT-F420, PICTORIAL; 940012 - 101 LABEL, QUARTERBACK; 207305 - 100 LABEL INSTRUCTIONS

Prepared by: Sue Redmond, DATE: 7-9-82, DWG REL NO.: 12636, DATE: 12653, CHECKED BY: Kam Mahdavi, 1/3/83, DESIGN ENGINEER: J.L. [signature], 1/1/83, MODEL NO.: F420-90

FORM 795 (R 03/82)

PAGE 1 OF 1





ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC: R DOC CODE: Q101 S 7 0 1 1 M P 207350 - 009 A

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes rows for parts like ASSY, CABLE, SCREW, WASHER HD HEX, NAMEPLATE, QUARTERBACK TAPE DRIVE, ASSY, PWB - CONTROLLER, BRACKET, MOUNTING 8" F.D., ASSY, CARTRIDGE TAPE DRIVE, STANDOFF-LK. CKT. BD. SUP., SHIPPING BAG, PLASTIC - 16 X 14, SHIPPING CARTON, OUTER BOX, SHIPPING CARTON, INNER FOLD, PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE, MTT-F420, PICTORIAL, LABEL INSTRUCTIONS.

FORM 795 (R 03/82) PAGE 1 OF 1



ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC: R DOC CODE: Q101 S 7 0 1 1 M P 207350 - 010 C

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes rows for parts like ASSY, CABLE, SCREW, WASHER HD HEX, NAMEPLATE, QUARTERBACK TAPE DRIVE, ASSY, PWB - CONTROLLER, BRACKET, MOUNTING 8" F.D., ASSY, CARTRIDGE TAPE DRIVE, STANDOFF-LK. CKT. BD. SUP., SHIPPING BAG, PLASTIC - 16 X 14, SHIPPING CARTON, OUTER BOX, SHIPPING CARTON, INNER FOLD, PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE, MTT-F420, PICTORIAL, LABEL INSTRUCTIONS.

FORM 795 (R 03/82) PAGE 1 OF 1



ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 90 IPS, 4 TK DSC: R DOC CODE: Q101 S 7 0 1 1 M P 207350 - 011 C

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes rows for parts like ASSY, CABLE, SCREW, WASHER HD HEX, NAMEPLATE, QUARTERBACK TAPE DRIVE, ASSY, PWB - CONTROLLER, BRACKET, MOUNTING 8" F.D., ASSY, CARTRIDGE TAPE DRIVE, STANDOFF-LK. CKT. BD. SUP., SHIPPING BAG, PLASTIC - 16 X 14, SHIPPING CARTON, OUTER BOX, SHIPPING CARTON, INNER FOLD, PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE, MTT-F420, PICTORIAL, LABEL INSTRUCTIONS.

FORM 795 (R 03/82) PAGE 1 OF 1



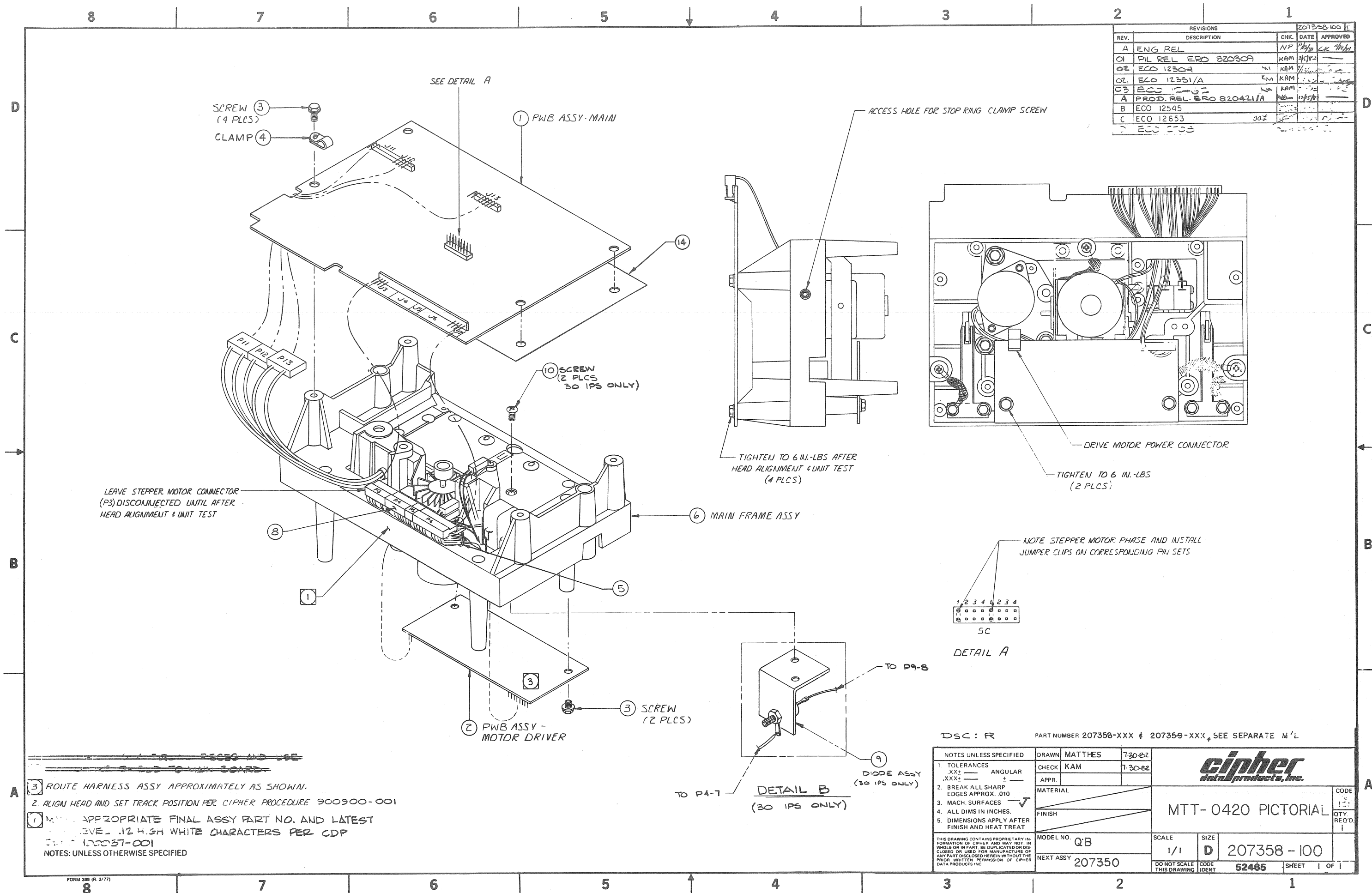
ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC: R DOC CODE: Q101 S 7 0 1 1 M P 207350 - 012 A

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY (WHOLE, DECIMAL), U.M. CODE. Includes rows for parts like ASSY, CABLE, SCREW, WASHER HD HEX, NAMEPLATE, QUARTERBACK TAPE DRIVE, ASSY, PWB - CONTROLLER, ASSY, CARTRIDGE TAPE DRIVE, SHIPPING BAG, PLASTIC - 16 X 14, SHIPPING CARTON, OUTER BOX, SHIPPING CARTON, INNER FOLD, PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE, MTT-F420, PICTORIAL, LABEL INSTRUCTIONS.

FORM 795 (R 03/82) PAGE 1 OF 1

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	1/2/82	CK
O1	PIL REL. ERO 820309	KAM	3/5/82	
O2	ECO 12309	KAM	1/1/82	
O2	ECO 12351/A	KAM	1/1/82	
O3	ECO 12352	KAM	1/1/82	
A	PROD. REL. ERO 820421/A	KAM	12/5/82	
B	ECO 12545			
C	ECO 12653	JaZ		
D	ECO 12703			



- 3** ROUTE HARNESS ASSY APPROXIMATELY AS SHOWN.
- 2** ALIGN HEAD AND SET TRACK POSITION PER CIPHER PROCEDURE 900900-001
- 1** MARK APPROPRIATE FINAL ASSY PART NO. AND LATEST REVISION LEVEL IN 1/2 H.S.H WHITE CHARACTERS PER CDP 100037-001
- NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R PART NUMBER 207358-XXX & 207359-XXX, SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-30-82
1. TOLERANCES XXX: — ANGULAR — ± —	CHECK	KAM	7-30-82
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB	
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE REPRODUCED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.	NEXT ASSY	207350	

		CODE	MTT-0420 PICTORIAL
		QTY. REQ'D	
SCALE	SIZE	207358-100	
1/1	D	DO NOT SCALE THIS DRAWING	CODE IDENT 52465 SHEET 1 OF 1



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207358 - 002 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207358 - 003 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207358 - 004 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207358 - 005 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207359 - 002 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

S 7 0 1 1 M P 207359 - 003 Q101

Table with columns: PART NUMBER, ITEM NO., DESCRIPTION, REMARKS, QUANTITY, U.M. CODE. Includes assembly details for ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS.

FORM 795 (R 03/82)



ASSEMBLY PARTS LIST

Garden Grove Division  
 ASSEMBLY TITLE: ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS DSC:R DOC CODE: Q101  
 S 7 0 1 1 M P 207359 - 004 D

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207066 - 003	1	ASSY, PMB - MAIN		1		
207076 - 001	2	ASSY, PMB - MOTOR DRIVER		1		
145027 - 308	3	SCREW, THREAD CUTTING INDENTED HEX WASHER HEAD		6		
100000 - 019	4	CLAMP, CABLE		1		
100171 - 001	5	STRAP-CABLE, SELF-LOCKING		1		
207393 - 001	6	ASSY, MAIN FRAME		1		
900900 - 001	7	PROCEDURE, TRACK AND AZIMUTH ALIGNMENT		0		
207073 - 001	8	ASSY, CABLE - MOTOR DRIVER PMB		1		
207072 - 001	9	ASSY, DIODE - MOTOR DRIVER		1		
100036 - 304	10	SCREW, PAN HEAD PHIL	6-32 x 1/4	2		
207358 - 100	11	MTT-0420, PICTORIAL		0		
207383 - 001	14	SHIELD		1		

PREPARED BY: Sue Redmond DATE: 7-9-82 DWG REL NO.: 820420 DATE: 9 15 82  
 CHECKED BY: Ram Mohan DATE: 7/14/82 D 12686 DATE: 8/12/82  
 DESIGN ENGINEER: R. Parker DATE: 11/11/82 C 12653 DATE: 3/21/82  
 ECO 12553 DATE: 1/1/82  
 PROD REL: 11/11/82  
 REV ECO DATE/SIGNATURE REV ECO DATE/SIGNATURE  
 NEXT ASSEMBLY: 207350/207351  
 MODEL NO.: F/0420-30

FORM 795 (R 03/82)

PAGE 1 OF 1



ASSEMBLY PARTS LIST

Garden Grove Division  
 ASSEMBLY TITLE: ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS DSC: R DOC CODE: Q101  
 S 7 0 1 1 M P 207359 - 005 A

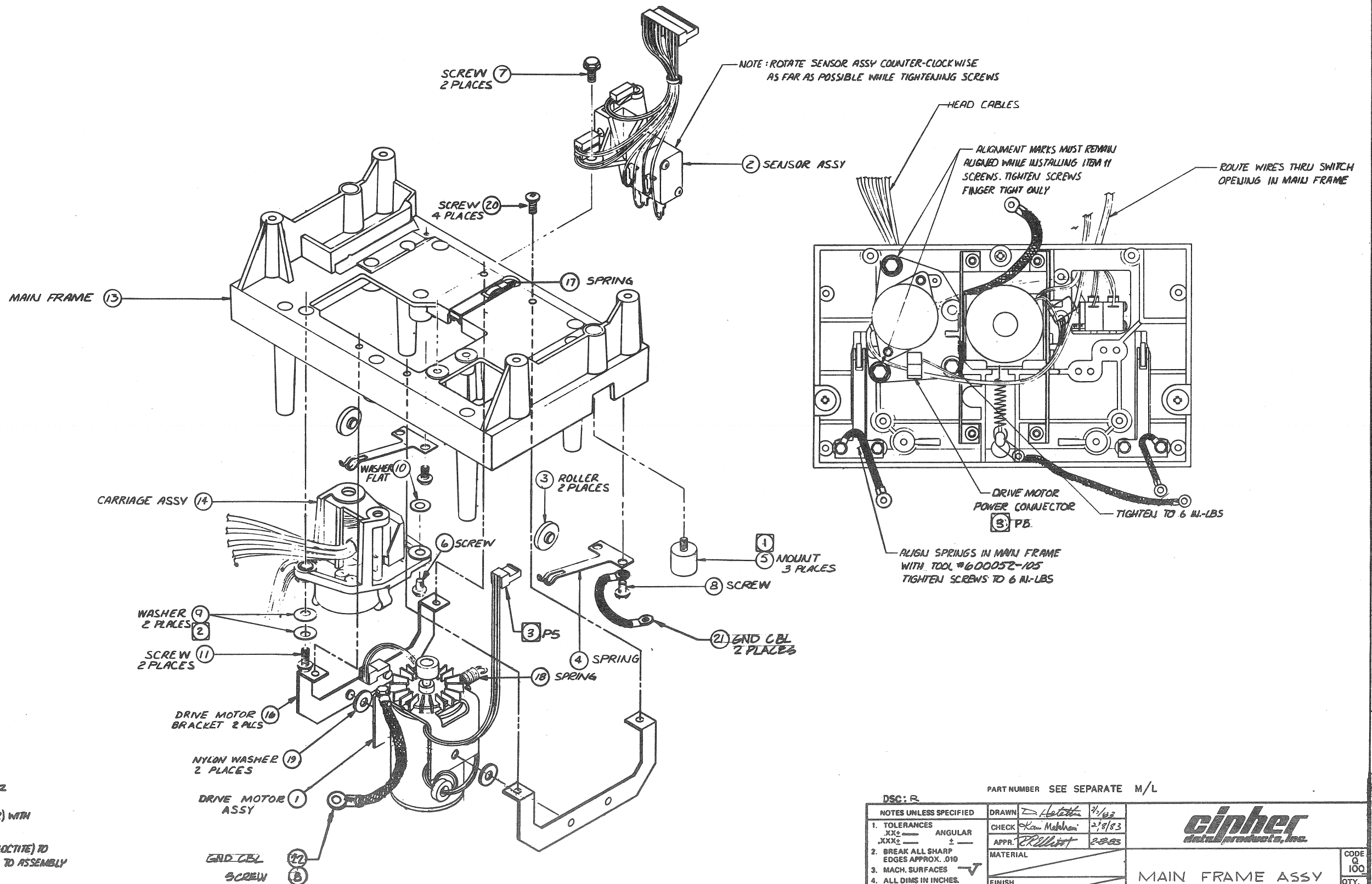
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207066 - 003	1	ASSY, PMB - MAIN		1		
207076 - 001	2	ASSY, PMB - MOTOR DRIVER		1		
145027 - 308	3	SCREW, THREAD CUTTING INDENTED HEX WASHER HEAD		6		
100000 - 019	4	CLAMP, CABLE		1		
100171 - 001	5	STRAP-CABLE, SELF-LOCKING		1		
207393 - 002	6	ASSY, MAIN FRAME		1		
900900 - 001	7	PROCEDURE, TRACK AND AZIMUTH ALIGNMENT		0		
207073 - 001	8	ASSY, CABLE - MOTOR DRIVER PMB		1		
207072 - 001	9	ASSY, DIODE - MOTOR DRIVER		1		
100036 - 304	10	SCREW, PAN HEAD PHIL	6-32 X 1/4	2		
207358 - 100	11	MTT-0420, PICTORIAL		0		
207383 - 001	14	SHIELD		1		

PREPARED BY: S. HENCKE DATE: 03-25-83 DWG REL NO.: 820420 DATE: 9 15 82  
 CHECKED BY: S. Hencke DATE: 3-25-83  
 DESIGN ENGINEER: S. Hencke DATE: 3-30-83  
 ECO 12553 DATE: 1/1/82  
 PROD REL: 11/11/82  
 REV ECO DATE/SIGNATURE REV ECO DATE/SIGNATURE  
 NEXT ASSEMBLY: 207350/207351  
 MODEL NO.: F/0420-30

FORM 795 (R 03/82)

PAGE 1 OF 1

REVISIONS			
REV.	DESCRIPTION	CHK.	DATE
A	PROD. REL PER BRD 020464	KW	2/8/83
B	ECO 12708	KW	8/83



- 3 MARK REFERENCE DESIGNATIONS PER CDP SPEC 100013-001.
- 2 INSTALL ITEMS 9 (BELLEVILLE WASHER) WITH CONCAVE SIDES TOWARD EACH OTHER
- 1 APPLY ONE DROP OF ITEM 12 (GREEN LOCTITE) TO THREADS OF ITEM 5 (SHOCK MOUNT) PRIOR TO ASSEMBLY

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R		PART NUMBER SEE SEPARATE M/L		
NOTES UNLESS SPECIFIED	DRAWN <i>D. Helath</i> 2/83	<b>cipher</b> data products, inc.		
1. TOLERANCES XX± — ANGULAR XXX± — ± —	CHECK <i>Kam Mahkam</i> 2/8/83			
2. BREAK ALL SHARP EDGES APPROX. .010	APPR. <i>PRilliant</i> 2-8-83	MAIN FRAME ASSY		
3. MACH. SURFACES	MATERIAL			
4. ALL DIMS IN INCHES	FINISH	SCALE 1/1 SIZE D 207393-100		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO. QB			
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE REPRODUCED OR IN PART, BE REPRODUCED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.	NEXT ASSY 207358, 207359	DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1



DSC: R

### ASSEMBLY PARTS LIST

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	207385 - 001	1	ASSY, DRIVE MOTOR		1		
M P	207324 - 001	2	ASSY, SENSOR		1		
M P	207309 - 001	3	ROLLER - DETENT (MOLDED)		2		
M P	207308 - 001	4	SPRING - DETENT		2		
M P	135001 - 001	5	MOUNT - SHOCK		3		
M P	145026 - 306	6	SCREW - WASHER HD HEX 6-32 X 3/8		1		
M P	145027 - 306	7	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD		2		
M P	145027 - 304	8	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD		4		
M P	100256 - 002	9	WASHER - BELLEVILLE		4		
M P	163010 - 003	10	WASHER - FLAT		1		
M P	145026 - 308	11	SCREW - WASHER HD HEX, INDENTED	6-32 X 1/2	2		
M P	100465 - 003	12	ADHESIVE-ACCELERATOR		A/R		
M P	207311 - 001	13	MAIN FRAME		1		
M P	207329 - 001	14	ASSY, CARRIAGE		1		

PREPARED BY: S. HENCKE DATE: 10-27-82  
 CHECKED BY: S. HENCKE DATE: 11-15-82  
 DESIGN ENGINEER: S. HENCKE DATE: 1-17-83

DWG REL NO.: B20449 DATE: 11-29-82  
 NEXT ASSEMBLY: 207350/207359  
 MODEL NO.: 0420-30/90

FORM 795 (R 03/82)

PAGE 1 OF 2



### ASSEMBLY PARTS LIST (CONTINUATION)

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	207393 - 100	15	ASSEMBLY DRAWING		0		
M P	207377 - 001	16	BRACKET, DRIVE MOTOR		2		
M P	207376 - 001	17	SPRING, CARTRIDGE		1		
M P	207379 - 002	18	SPRING, CAPSTAN		1		
M P	100050 - 301	19	WASHER, FLAT NYLON	.192 ID X .50 OD .010	2		
M P	100293 - 104	20	SCREW, BUT. HD. BLK	4-40 X 1/4	4		

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 2



### ASSEMBLY PARTS LIST

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	940076 - 001	1	ASSY, DRIVE MOTOR		1		
M P	207324 - 001	2	ASSY, SENSOR		1		
M P	207309 - 002	3	ROLLER - DETENT	BRASS	2		
M P	207308 - 001	4	SPRING - DETENT		2		
M P	135001 - 001	5	MOUNT - SHOCK		3		
M P	145026 - 306	6	SCREW - WASHER HD HEX 6-32 X 3/8		1		
M P	145027 - 306	7	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD		2		
M P	145027 - 304	8	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD		5		
M P	100256 - 002	9	WASHER - BELLEVILLE		4		
M P	163010 - 003	10	WASHER - FLAT		1		
M P	145026 - 308	11	SCREW - WASHER HD HEX, INDENTED	6-32 X 1/2	2		
M P	100465 - 003	12	ADHESIVE-ACCELERATOR		A/R		
M P	207311 - 001	13	MAIN FRAME		1		
M P	207329 - 001	14	ASSY, CARRIAGE		1		

PREPARED BY: S. HENCKE DATE: 03-25-83  
 CHECKED BY: L. JOHNSON DATE: 3-28-83  
 DESIGN ENGINEER: S. HENCKE DATE: 3-30-83

DWG REL NO.: 320477 DATE: 03-30-83  
 NEXT ASSEMBLY: 207358/207359  
 MODEL NO.: 0420-30/90

FORM 795 (R 03/82)

PAGE 1 OF 2



### ASSEMBLY PARTS LIST

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
M P	207393 - 100	15	ASSEMBLY DRAWING		0		
M P	207377 - 001	16	BRACKET, DRIVE MOTOR		2		
M P	940017 - 001	17	ASSY, CARTRIDGE SPRING-STATIC GND		1		
M P	207379 - 002	18	SPRING, CAPSTAN		1		
M P	100050 - 301	19	WASHER, FLAT NYLON	.192 ID X .50 OD .010	2		
M P	100293 - 104	20	SCREW, BUT. HD. BLK	4-40 X 1/4	4		
M P	207394 - 002	21	ASSY, CABLE-GROUND STRAP	2.0 IN.	2		
M P	207394 - 003	22	ASSY, CABLE-GROUND STRAP	3.0 IN.	1		

FORM 795 (R 03/82) (Continuation)

PAGE 2 OF 2



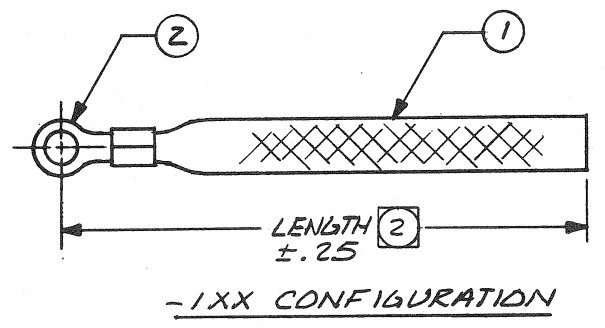
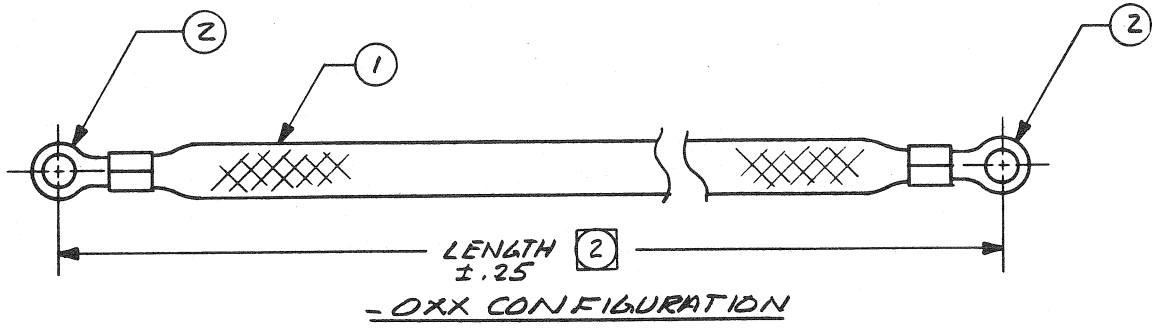
4

3

2

1

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	PROD REL PER EDD B20434	CKm	11/2/92	



- 2 LAST TWO DIGITS OF DASH NO. OF CABLE INDICATE CABLE LENGTH IN INCHES (IE, -008 = 8.0 ± .25 INCHES).
1. TAG WITH PART NO., APPROPRIATE DASH NO. & LATEST REV LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L'S

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± — ANGULAR .XXX± — ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES $\sqrt{\text{J}}$ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN <i>D.L. Lott</i> 11/11/92 CHECK <i>SW</i> 11/28/92 APPR. <i>D.L. Lott</i> 11-12-92	<p>THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.</p>	CODE 2 115		
	MATERIAL FINISH		ASSY, CABLE - GROUND STRAP	QTY REQ'D —	
	MODEL No. QB		SCALE 2/1	SIZE C	REV. A
	NEXT ASSY 207380 940016, 940017		DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1
	DSC:R				

4

3

2

1



SECTION 3

MASTER PARTS LIST

3.1 RECOMMENDATIONS

The recommended parts for the Cipher Quarterback Tape Drive are listed in the Master Parts List.

3.2 COMPONENT VARIANCE

For resistors, capacitors, small hardware, and other items not included in the list, equivalents in type, value, size, tolerance, and quality may be substituted.

3.3 INTEGRATED CIRCUIT

For integrated circuit where the manufacture is not specifically listed any manufacturer's device of the specific type may be used.

TABLE 3-1

MASTER PARTS LIST

Assembly, Main PWB - 30 ips R/B 207066-003	207002-001
Assembly, Main PWB - 90 Ips R/B 207066-004	207002-002
Assembly, Controller PWB	207005-001
Assembly, Controller PWB	207005-002
Assembly, Microcomputer Expander PWB	207011-001
Assembly, Motor Driver PWB R/B 207076-001	207017-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207018-001
Assembly, Cable	207020-001
Assembly, Cable	207020-002
Assembly, Cable	207020-003
Assembly, Cable	207020-004
Assembly, Power Cable - Controller PWB	207021-001
Assembly, 32 x 8 PROM (Read Decode)	207024-001
Assembly, 32 x 8 PROM (Write Decode)	207025-001
Assembly, 256 x 4 Write Sequencer	207026-001
Assembly, 256 x 4 Host Sequencer	207027-001
Assembly, 2K x 8 PROM	207028-001
Assembly, 512 x 4 Read Sequencer	207029-001
Assembly, 8 Bit Microcomputer R/B 207030-002	207030-001
Assembly, 8 Bit Microcomputer	207030-002
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-001
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-002
Assembly, Head -2 Ch. (Erase-Read-Write)	207057-001
Assembly, Main PWB - 30 ips R/B 207066-003	207066-001

TABLE 3-1. (Continued)

Assembly, Main PWB - 90 ips R/B 207066-004	207066-002
Assembly, Main PWB - 30 ips	207066-003
Assembly, Main PWB - 90 ips	207066-004
Assembly, Motor Driver PWB R/B 207076-001	207069-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207070-001
Assembly, Diode - Slow Speed Motor Kit, 30 ips	207072-001
Assembly, Cable - Motor Driver PWB	207073-001
Assembly, Motor Driver PWB	207076-001
Quarterback Maintenance Manual	207100-001
Quarterback Engr. Drawings	207100-002
Quarterback Theory of Operation	207100-003
Plate, Front	207300-001
Light Pipe	207301-001
Assembly, Main Frame	207304-001
Assembly, Main Frame	207304-002
Spring, Detent	207308-001
Frame, Main	207311-001
Frame, Main - Molded	207312-001
Assembly, Drive Motor (Spare)	207314-001
Frame, Drive Motor	207315-001
Heatsink, Zener Diode	207318-001
Capstan R/B 207389-001	207320-001
Assembly, Head/Carriage	207322-001
Housing, Sensor	207323-001
Assembly, Sensor (Spare)	207324-001
Assembly, Sensor Housing	207325-001
Assembly, Sensor Harness	207326-001
Assembly, Stepper Motor	207327-001
Assembly, Stepper Motor - Terminated	207328-001
Assembly, Carriage (Spare)	207329-001
Assembly, Carriage and Nut	207330-001
Assembly, Stop Ring	207332-001
Assembly, Carriage Base	207334-001
Assembly, Carriage Base	207335-001
Assembly, Carriage Base - Molded	207336-001
Shaft, Carriage Drive - ACME	207337-001
Shield, Cable	207338-001
Screw, Adjustment	207339-001
Certified Tape Cartridge - 450 ft.	207340-001
Nameplate - QB Tape Drive	207341-001
Kit, Front Panel	207346-001
Assembly, MTT F420 - 30 ips/4TK	207350-001
Assembly, MTT F420 - 90 ips/4TK	207350-002
Assembly, MTT F420 - 30 ips/4TK	207350-005
Assembly, MTT F420 - 90 ips/4TK	207350-006
Assembly, MTT F420 - 30 ips/4TK	207350-009
Assembly, MTT F420 - 30 ips/4TK	207350-010
Assembly, MTT F420 - 90 ips/4TK	207350-011
Assembly, MTT F420 - 30 ips/4TK	207350-012

TABLE 3-1. (Continued)

Assembly, MTT F420 - 30 ips/4TK	207351-001
Assembly, MTT F420 - 90 ips/4TK	207351-002
Assembly, MTT F420 - 30 ips/4TK	207351-005
Assembly, MTT F420 - 90 ips/4TK	207351-006
Assembly, MTT F420 - 30 ips/4TK	207351-010
Assembly, MTT F420 - 90 ips/4TK	207351-011
Assembly, Cartridge Drive 0420 - 90 ips	207358-002
Assembly, Cartridge Drive 0420 - 90 ips	207358-003
Assembly, Cartridge Drive 0420 - 90 ips	207358-004
Assembly, Cartridge Drive 0420 - 90 ips	207358-005
Assembly, Cartridge Drive 0420 - 30 ips	207359-002
Assembly, Cartridge Drive 0420 - 30 ips	207359-003
Assembly, Cartridge Drive 0420 - 30 ips	207359-004
Assembly, Cartridge Drive 0420 - 30 ips	207359-005
Motor, Stepper	207360-001
Motor, DC, Tach R/B207385-001	207362-001
Drive Nut, Carriage	207363-001
Spring, Compression - Carriage	207375-001
Bracket, Drive Motor	207377-001
Nameplate - Cipher Data Products Logo	207378-001
Cover, Sensor	207381-001
Drive Motor, DC, Tach	207385-001
Frame, Drive Motor	207387-001
Capstan	207389-001
Assembly, Main Frame	207393-001
Assembly, Main Frame	207393-002
Assembly, Ground Strap Cable	207394-002
Assembly, Ground Strap Cable	207394-003
Assembly, Ground Strap Cable	207394-008
Assembly, Ground Strap Cable	207394-104
Assembly, Ground Strap Cable	207394-105
Tracking Tape Cartridge	940049-001
Azimuth Tape Cartridge	940050-001
Bracket, Mounting - 8" F.D.	940075-001
Tape Cartridge Certified by DE I-450 ft.	950125-001



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7301 Oranewood Avenue  
Garden Grove, California 92641

P.O. Box 3010  
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San Diego, California 92131

P.O. Box 85170  
San Diego, California 92138

Telephone: (714) 578-9100  
TWX: 910-335-1251

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