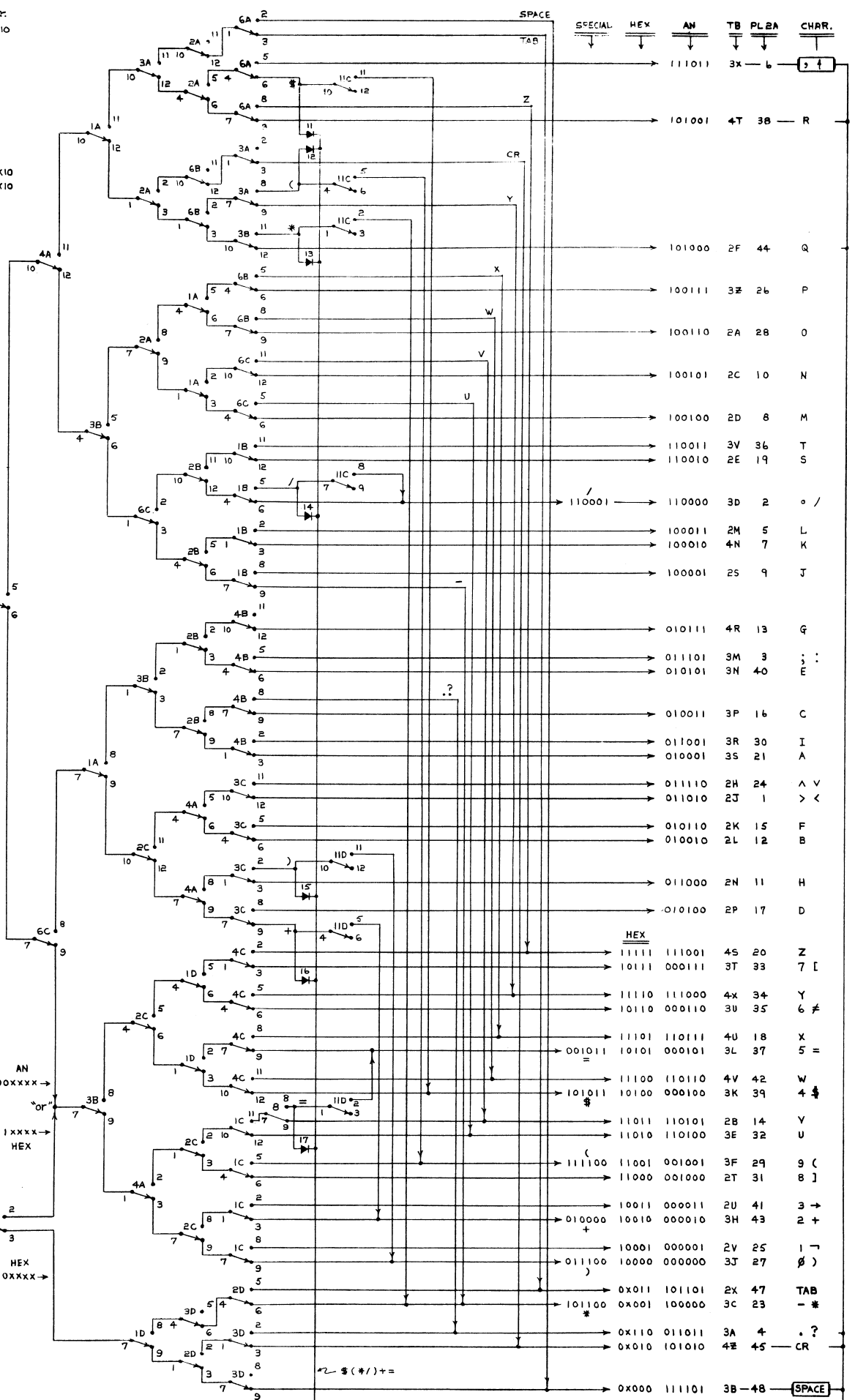
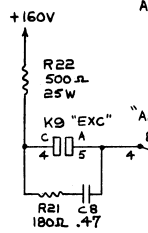


K# HEX AN-1ct ext:
 5: 0B5 · (A3 + 07-0H) · K10
 4: 0B4 · K10
 3: 0B3 · K10
 2: 0B2 · K10
 1: 0B1 · K10
 XXXXX HEX
 654321
 IXXXXXX AN
 6: (K5 · K1 + K5 · K6) · K8 · K10
 7: (K5 · K2 + K5 · K7) · K8 · K10
 pick hold

K8 - AN
 K9 - EXC.
 K10 - TYPE



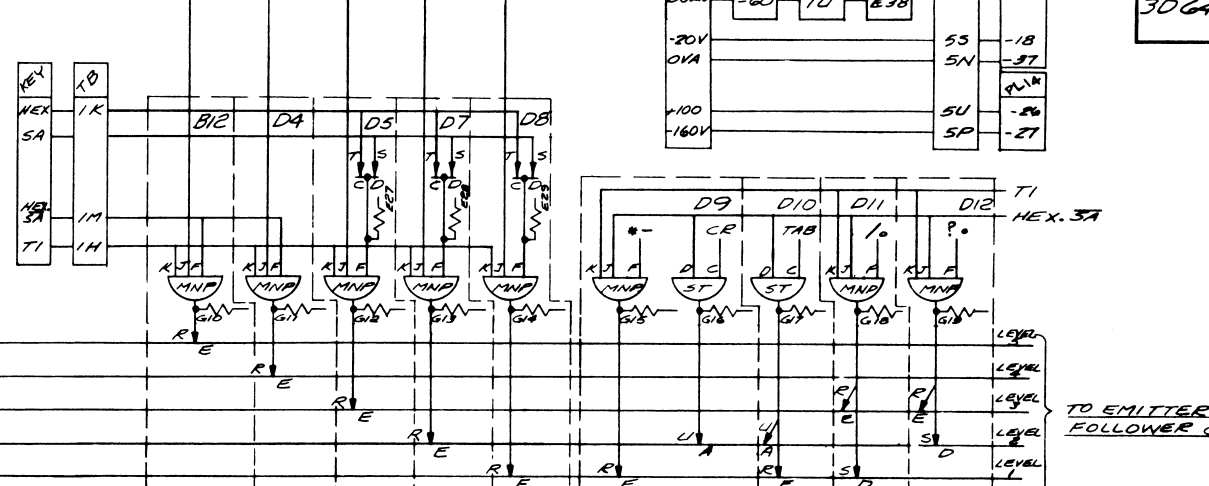
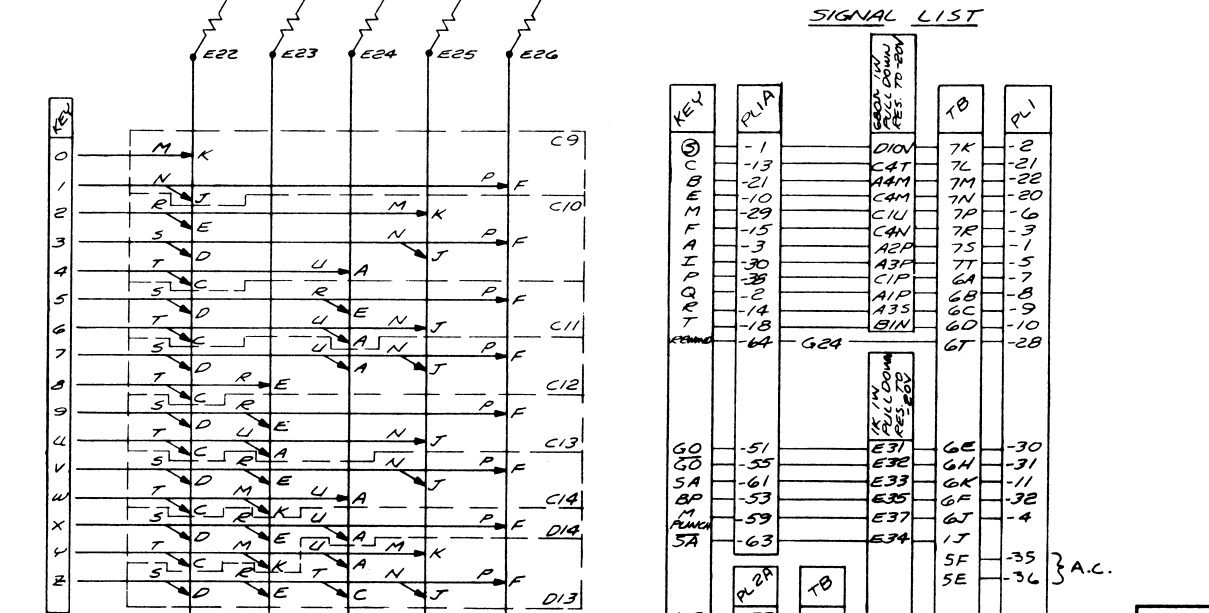
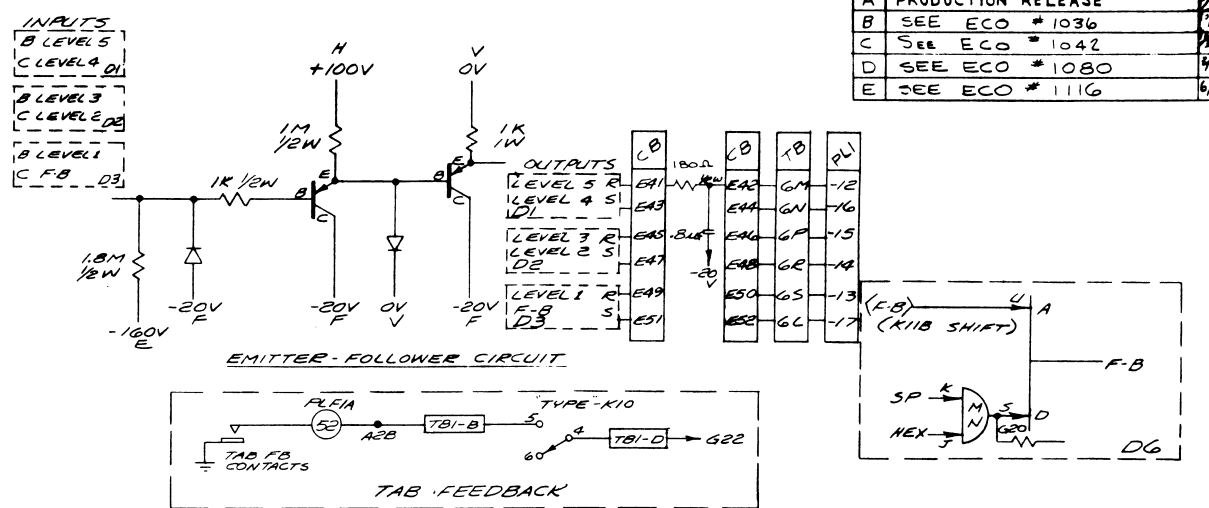
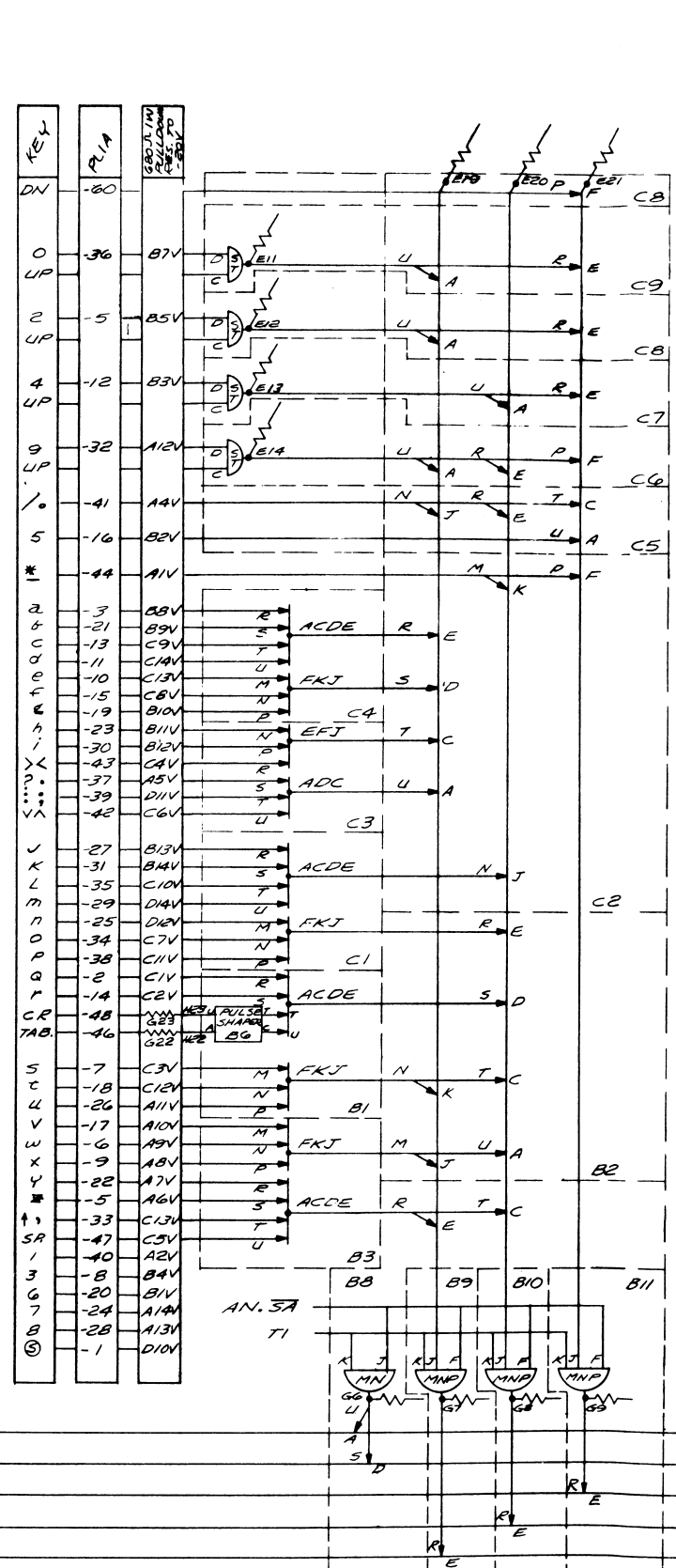
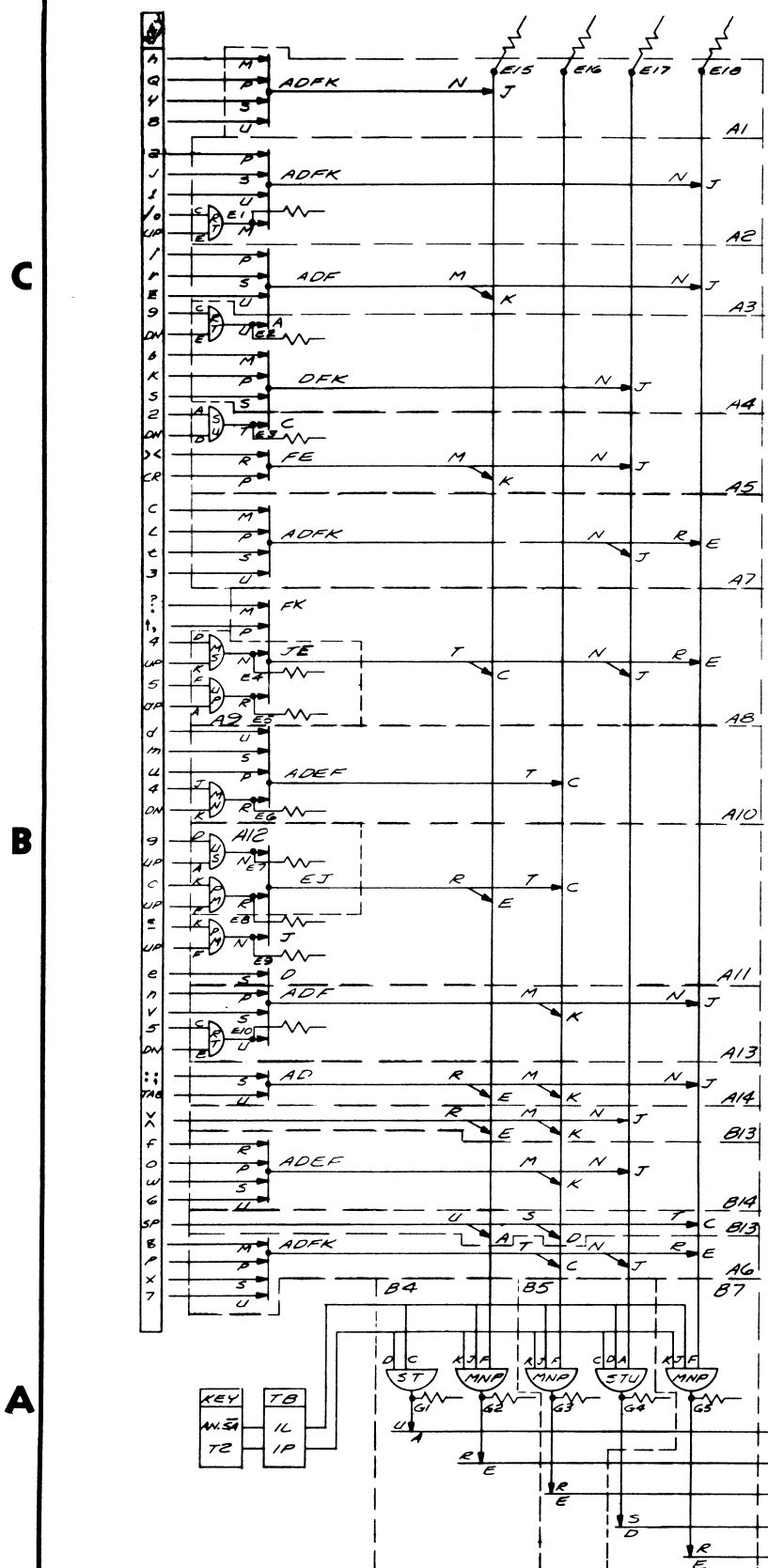
DECODING CIRCUITS
 ANC-1

dwg. 2

SPECIAL CHARACTER COMMON UP
 0XXXXXX UP
 IXXXXXX DOWN
 K11A ckt.

ZONE	ITER NO.	CIRC. STR.	NO. RES.	PART NO.	DESCRIPTION	ZONE	ITER NO.	CIRC. STR.	NO. RES.	PART NO.	DESCRIPTION	ZONE	ITER NO.	CIRC. STR.	NO. RES.	PART NO.	DESCRIPTION
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REVISIONS		
LTR.	DESCRIPTION	DATE
A	PRODUCTION RELEASE	11/15/59
B	SEE ECO # 1036	11/15/59
C	SEE ECO # 1042	11/15/59
D	SEE ECO # 1080	11/15/59
E	SEE ECO # 1116	11/15/59

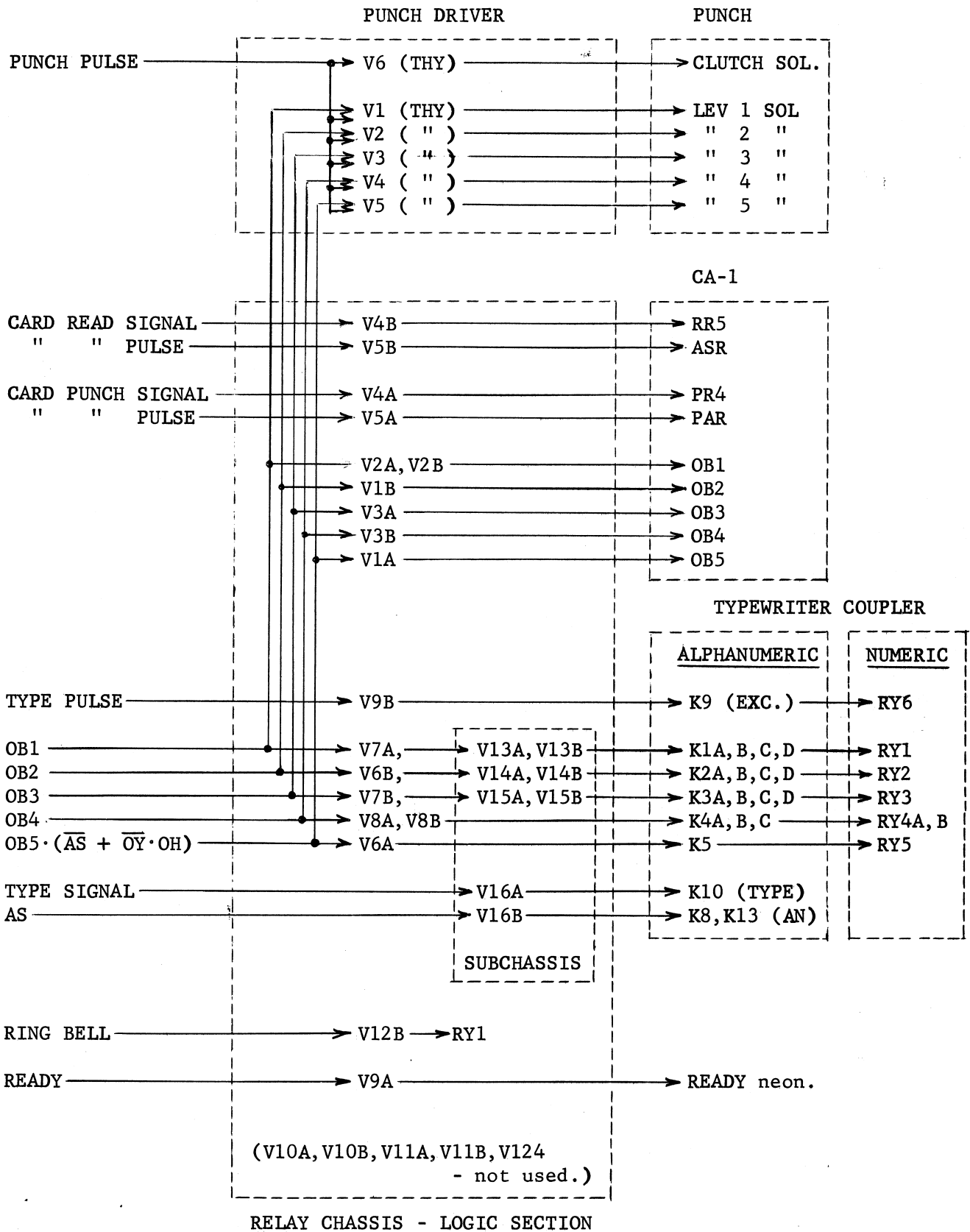


3. RESISTORS 'G22' & 'G23' ARE 120Ω 1/2W FOR CURRENT LIMITING.
 2. RESISTORS 'G17', 'G18' & 'G19' ARE 110K 1W TO +100V.
 1. RESISTORS 'E1' THRU 'E14' ARE 50K 1/2W TO +100V.
 RESISTORS 'E15' THRU 'E20' ARE 330K 1/2W TO -160V.
 RESISTORS 'G1' THRU 'G16' & 'G20' ARE 390K 1/2W TO +100V.
- NOTES:

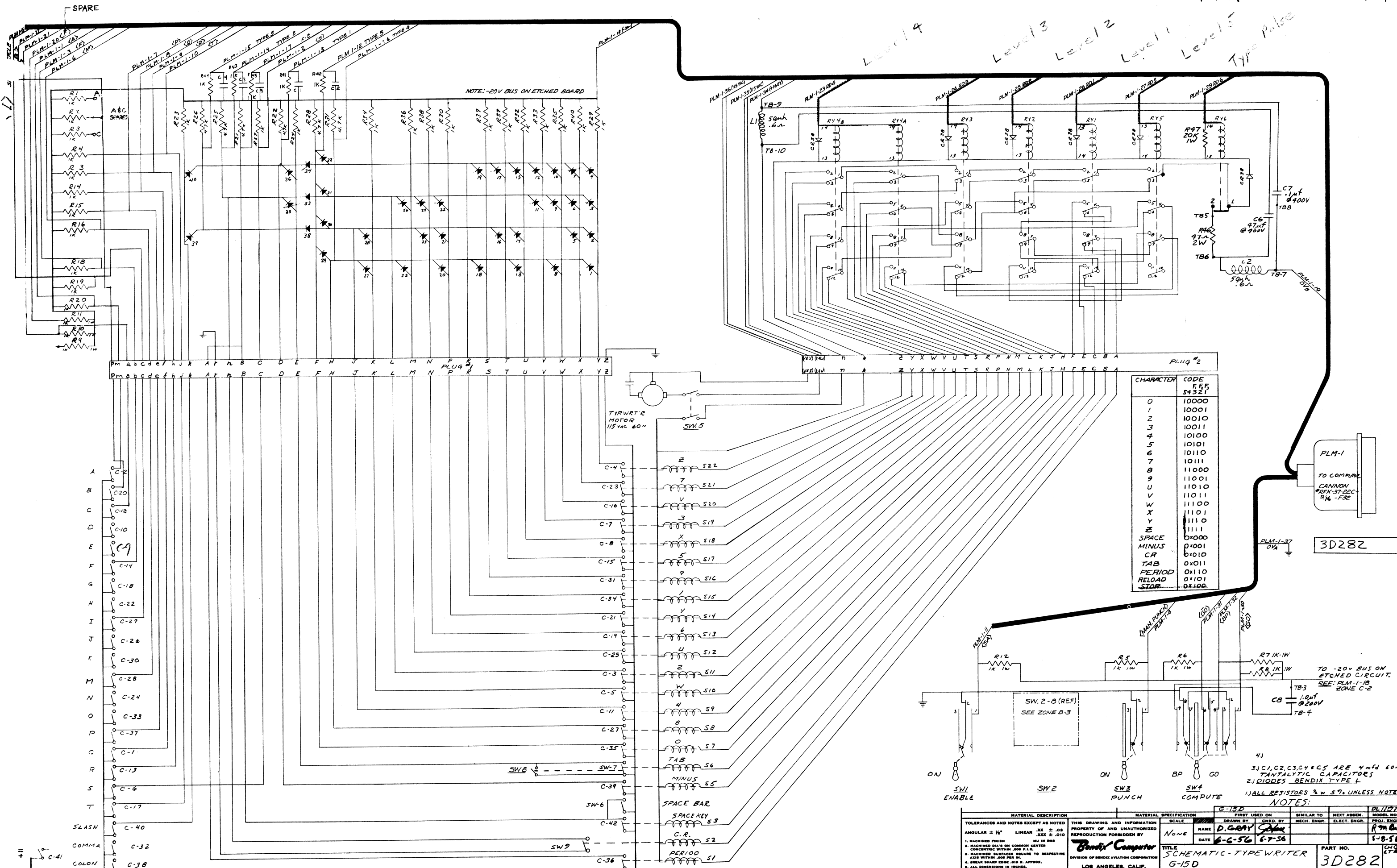
MATERIAL DESCRIPTION		MATERIAL SPECIFICATION		FIRST USED ON		SIMILAR TO		NEXT ASSEMBLY		MODEL NO.	
TOLERANCES AND NOTES EXCEPT AS NOTED		SCALE		DRAWN BY		MECH. ENGR.		ELECT. ENGR.		PROJ. ENGR.	
ANGULAR ± 1/4°		LINEAR ± .03		NAME		DATE		DATE		DATE	
1. ROUNDED POINT		2. ROUNDED 90° ON DIMENSION CENTER		S. SELBY		6-23-59		11/15/59		9-1-59	
3. ROUNDED SURFACES SQUARE TO RESPECTIVE AXIS WITHIN .005 PER IN.		4. BREAK SHARP EDGE .010 IN. APPROX.		TITLE		PART NO. <td colspan="2">CHG. LTR.</td> <td colspan="2">DATE</td>		CHG. LTR.		DATE	
5. ALL DIMENSIONS IN INCHES.		BY		SCHEMATIC-COUP MATRIX		30643 E					
		BY		S. SELBY		DATE		DATE		DATE	

30643 E

30643 E



THE OUTPUT "LINK"
ALPHANUMERIC G-15's



TOLERANCES AND NOTES EXCEPT AS NOTED		MATERIAL SPECIFICATION		FIRST USED ON		SIMILAR TO		NEXT ASSEM.		MODEL NO.	
ANGULAR ± 1/4°		SCALE		DRAWN BY		MECH. ENGR.		ELECT. ENGR.		PROJ. ENGR.	
LINEAR .XX ± .03		None		D. GRAY						R. M. BULL	
1. MACHINED SURFACES UNLESS OTHERWISE SPECIFIED TO BE CONCENTRIC WITHIN .005 IN. DIA.		DATE		6-6-56		6-7-56				8-8-56	
2. MACHINED SURFACES SQUARE TO RESPECTIVE AXIS WITHIN .005 PER IN.		TITLE		SCHEMATIC - TYPEWRITER		PART NO.		3D282		C16 272	
3. BREAK SHARP EDGE AND FL. APPROX.		DIVISION OF BENDIX AVIATION CORPORATION		LOS ANGELES, CALIF.							
4. ALL DIMENSIONS IN INCHES.											

ENGINEERING MEMORANDUM

E.M. NO. 717

THE **Bendix** CORPORATION · BENDIX COMPUTER DIVISION

ISSUE DATE April 3, 1961

PAGE 1 OF 12 PAGES

DEVICE: IBM TYPEWRITER, MODEL B

WRITTEN BY: R.J. Van den Berg

REQUESTED BY: _____

REASON FOR MEMO: To give the Customer Service Group a manual of instructions for servicing the output-input typewriter.

TABLE OF CONTENTS

	Page
A. Introduction - - - - -	2
B. Cleaning, Adjustment and Replacement - - - - - (Some adjustment and burnishing tools are mentioned in this section)	3
C. Lubrication - - - - - (Some lubricants and lubrication tools are recommended in this section)	4 through 6
D. IBM Part Numbers from Power Roll, Clutch, Different Cam-Assemblies and Common Missing Springs. - - - -	7 through 8
E. IBM Part Numbers of the Leaf-Contact- Switch Assemblies and of their Components. - - - -	9 through 12

APPROVED

PROJ. MGR.

W. J. Van den Berg

E.M. NO. 717

ENGINEERING MEMORANDUM

E.M. NO. 717

THE **Bendix** CORPORATION · BENDIX COMPUTER DIVISION

ISSUE DATE April 3, 1961

PAGE 2 OF 12 PAGES

DEVICE: IBM TYPEWRITER, MODEL B	WRITTEN BY: <u>R.J. Van den Berg</u>
	REQUESTED BY: _____

REASON FOR MEMO:

SECTION A - INTRODUCTION

At the moment, most of the typewriter breakdowns are unnecessary. They are not now being cleaned and lubricated on a proper schedule. It is wrong to just use the machine until it breaks down, necessitating calling an IBM serviceman. It appears that the only time that we clean and lubricate the machine is during the time when IBM is making a repair. The time that the machine is out of function necessitating a need to call an IBM serviceman, will be more costly than the time required to regularly clean and lubricate the machine.

A REGULAR FOUR MONTH CLEANING AND CHECKING OF THE TYPEWRITER IS NECESSARY and will give us a more reliable machine and thus more happier customers!

Note 1. The cleaning and lubrication information mentioned in the following pages should be used instead of the information given in the "IBM Input-Output Writer Introductory Manual".

Note 2. All part numbers called out in this memorandum are IBM part numbers when not otherwise specified.

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ENGINEERING MEMORANDUM

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ISSUE DATE April 3, 1961

PAGE 3 OF 12 PAGES

DEVICE: <u>IBM TYPEWRITER, MODEL B</u>	WRITTEN BY: <u>R.J. Van den Berg</u> REQUESTED BY: _____
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REASON FOR MEMO:

SECTION B - CLEANING, ADJUSTMENT AND REPLACEMENT

Burnishing and Adjustment Tools:

<u>Part Description</u>	<u>IBM Part Number</u>
Sahs Tool Brush (similar to paint brush)	9900086
Burnishing Blade	450567
Duck Bill Pliers (for blade contact adjusting)	9900021
Duck Bill pliers (for blade contact adjusting)	<u>M.Klein & Son, Chicago Part No.</u> 306-5

Remember: CLEANING OF THE MACHINE IS AT LEAST AS IMPORTANT AS LUBRICATION.

Check Every 4 Months:

The below listed parts should be kept clean and free from oil and grease.

1. ALL LEAF CONTACT SWITCHES Check if the contacts need to be burnished or adjusted. Check for pitting & excessive oxidation.

2. PLUNGER SOLENOIDS (Fig. 6, Page 7) These can most easily be cleaned by removing the solenoid-plunger-spring from the key-lever. Thereafter it is easy to pull plunger out of the solenoid. Clean and remove oil and grease from plunger and inside solenoid. While it might appear that lubricating the solenoid will free the solenoid, the effect only solves the problem for a short time. **OIL OR GREASE COLLECTS DUST!**

3. POWER ROLL Do not use cleaner. Just a dry rag will do the job. Oil on power roll causes slippage and light impression. **NOTE: REPLACEMENT OF THE POWER ROLL EVERY YEAR IS NECESSARY!**

4. THE CLUTCH-DISC, PULLEY AND PLATE For cleaning these parts, it is necessary to remove the retainers of the clutch-lever-shaft. Thereafter the clutch-lever-shaft and clutch-operating-arm can easily be taken away. The clutch-disc should be checked and replaced when it is worn out. **NOTE: REPLACE AT LEAST ONCE A YEAR!!! (Page 8, Fig. 8)**

5. ARMATURE STOP BAIL AND ARMATURES If there are sharp edges at the armature-stop bail, make these round and smooth (See Figure 5). Sharp edges causes sticking armatures!!!

Notes:

1. Replace the ribbon with every regular 4 month inspection.
2. Observe that the adjustments between power roll and nylon-letter-cam is correct. (See Fig. 5, Page 6)

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DEVICE: IBM TYPEWRITER, MODEL B	WRITTEN BY: <u>R.J. Van den Berg</u> REQUESTED BY: _____
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REASON FOR MEMO:

SECTION C - LUBRICATION

Lubricants and Lubrication Tools:

<u>Part Description</u>	<u>IBM Part Number</u>
Valve-spout Oiler	9900034 or equiv.
Grease Gun	158645 or equiv.
Grease #17 (1 lb can)	450556 or equiv.
Oil #6	460052 or equiv.

Be careful to use equivalent lubricant. The wrong lubricant can give sticking parts.

Remember:

TOO MUCH OIL AND GREASE WILL DO MUCH MORE HARM THAN GOOD.

Check Every 4 Months:

It is not true that you need to lubricate all moving parts on an inspection. Most of the moving parts need so little lubrication, that factory lubrication is enough. Of course, you need to check if the different mechanisms are still moving easily and lubricate slightly with IBM #6 when necessary.

Lubricate with IBM #6 every 4 Months:

1. CAM ASSEMBLY, BACK SPACE
2. CAM ASSEMBLY, CARRIAGE RETURN
3. CAM ASSEMBLY, RIBBON FEED
4. CAM ASSEMBLY, SHIFT
5. CAM ASSEMBLY, SPACE BAR
6. CAM ASSEMBLY, TAB
7. CARRIAGE RAIL

These above listed cam assemblies need to be lubricated between the hub and the cam as shown at Page 5 (Fig. 2, Point C) and Page 6 (Fig. 3, Point A). BE SURE THAT NO LUBRICANT IS ON THE POWER ROLL.

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DEVICE: IBM Typewriter, Model B

WRITTEN BY: R.J. Van den Berg

REQUESTED BY: _____

REASON FOR MEMO:

SECTION C - continued

Lubricate with IBM #17 Every 4 Months;

1. PISTON-SHAFT Piston-shaft of the air-cylinder-carriage-return. (Page 7, Fig. 16)
2. TABULAR MECHANISM The tab-lever at Point A, Figure 1.
3. CARRIAGE RETURN CLUTCH Lubrication points are the points A and B in Figure 2.
Take care that there is no lubricant on the clutch-friction-disc.
4. RIBBON LIFT BAIL Lubricate both ends of ribbon-lift-bail-assy (Page 6, Fig. 4, Point A).
5. MAGNET UNIT (Page 6, Fig. 5) Both armature-knock-off-bail-pivots.
6. SHIFT MECHANISM Lubricate both attachment points of the hair-spring (spring-stud and shift-toggle-lever-assy side) as shown in Figure 3, Page 6.

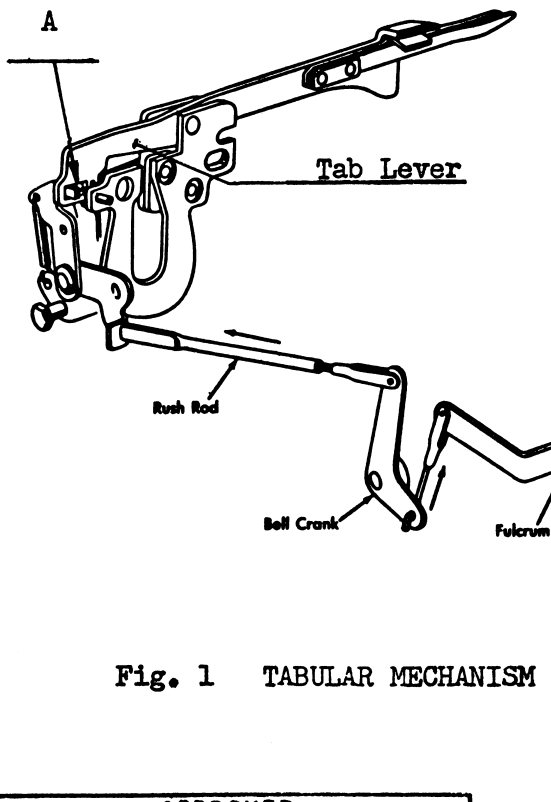


Fig. 1 TABULAR MECHANISM

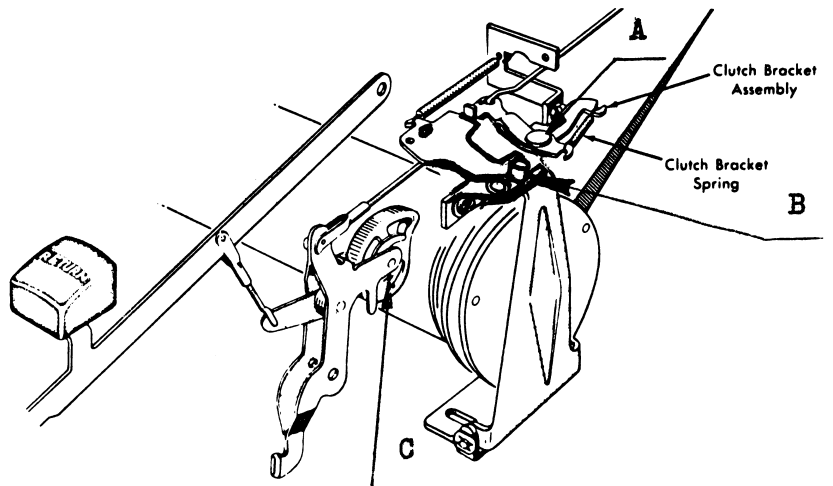


Fig. 2 CARRIAGE RETURN CLUTCH

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DEVICE: IBM TYPEWRITER, MODEL B

WRITTEN BY: R.J. Van den Berg

REQUESTED BY: _____

REASON FOR MEMO:

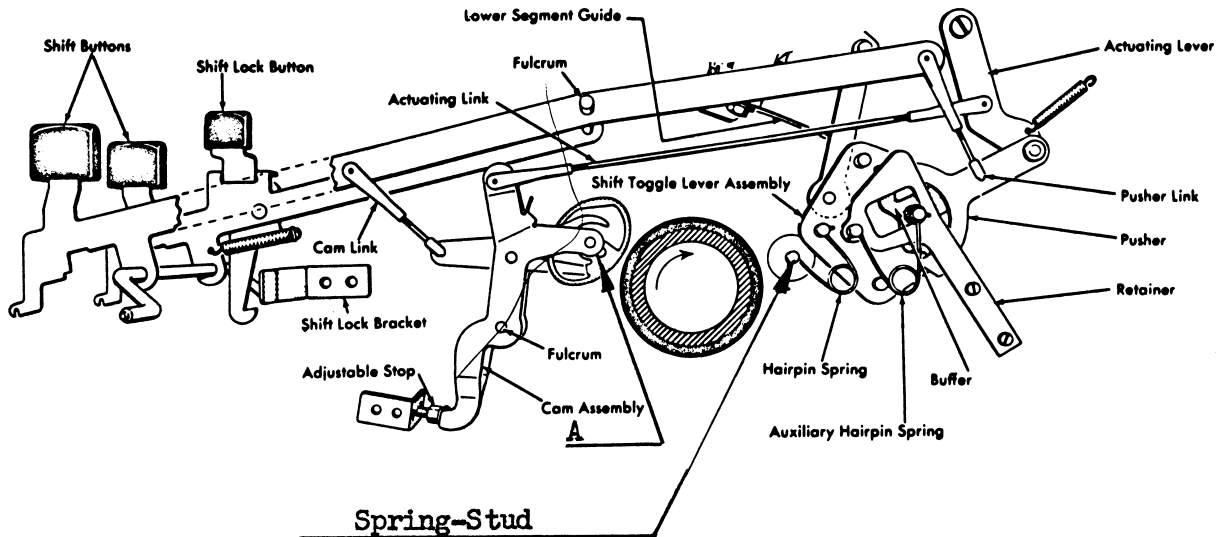


Fig. 3 SHIFT MECHANISM

Clutch Lever Bracket

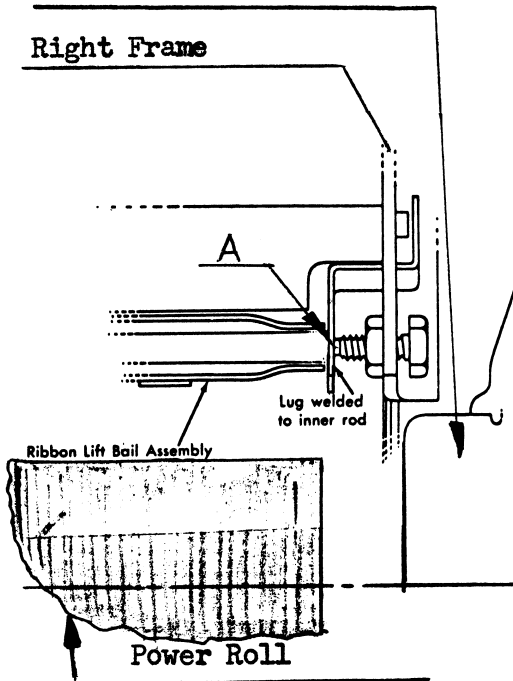


Fig. 4 RIGHT HAND END RIBBON LIFT BAIL (SHOWN FROM UNDERNEATH TYPEWRITER)

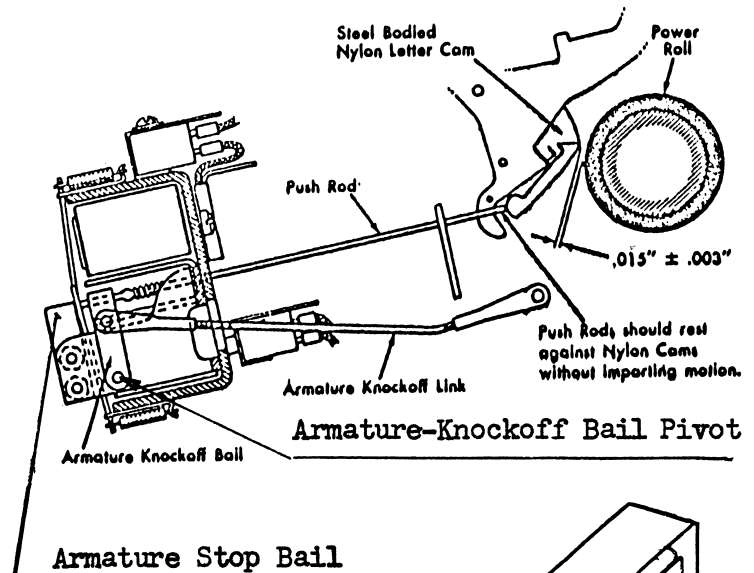
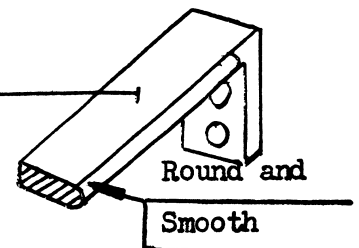


Fig. 5 MAGNET UNIT



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DEVICE: IBM TYPEWRITER, MODEL B

WRITTEN BY: _____

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REASON FOR MEMO:

SECTION D - IBM PART NUMBERS FOR COMMONLY USED COMPONENTS

<u>Part Description</u>	<u>IBM Part Number</u>
Cam Assembly Back Space	1119187
" " Carriage Return	1119184
" " Ribbon Feed (Fig. 7)	1119186
" " Shift	1119180
" " Space Bar	1119185
" " Tab	1119181
Clutch Friction Disc (Fig. 8)	1078509
Power Roll (Fig. 7)	1117828

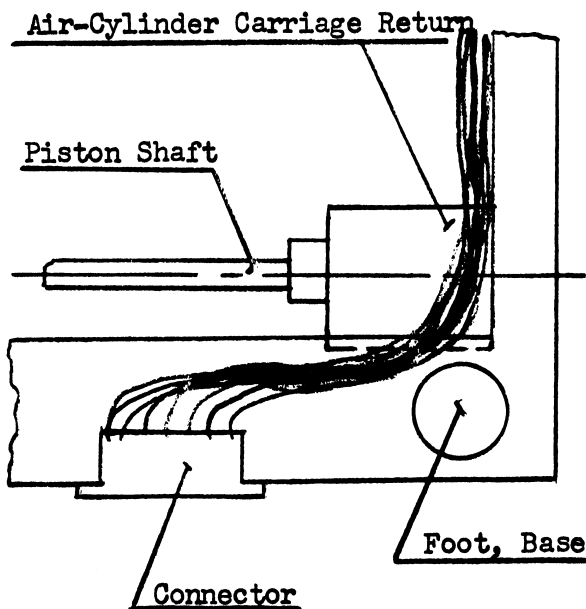


Fig. 16 PISTON SHAFT
View of lower, right-hand corner typewriter, shown from underneath.

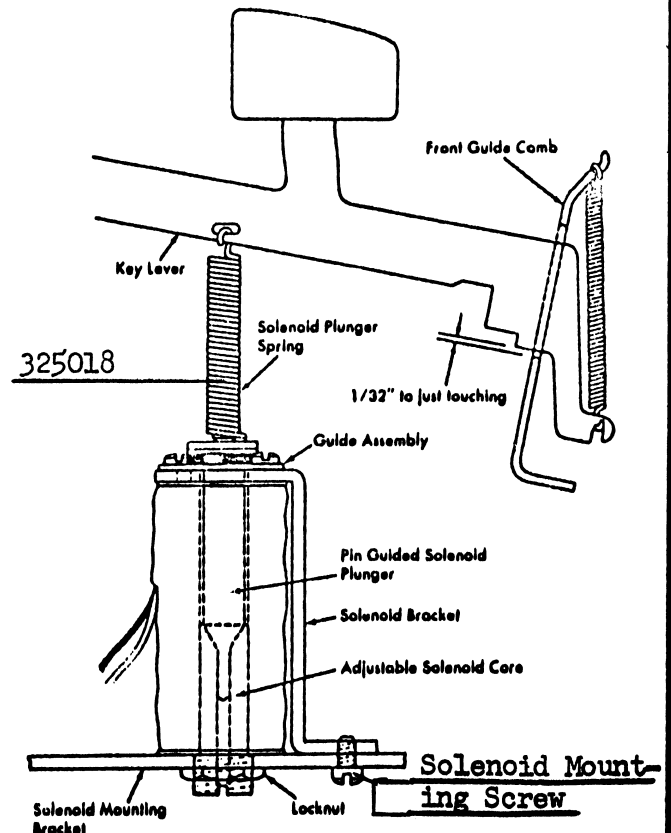


Fig. 6 Solenoid Plunger

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DEVICE: IBM TYPEWRITER, MODEL B

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REASON FOR MEMO:

SECTION D
Continued

1091646 Spring

46831 Feed Pawl Spring

1091670 Spring

1091647 Check Pawl Spring

1119186 Cam Assy Ribbon Feed

1117828

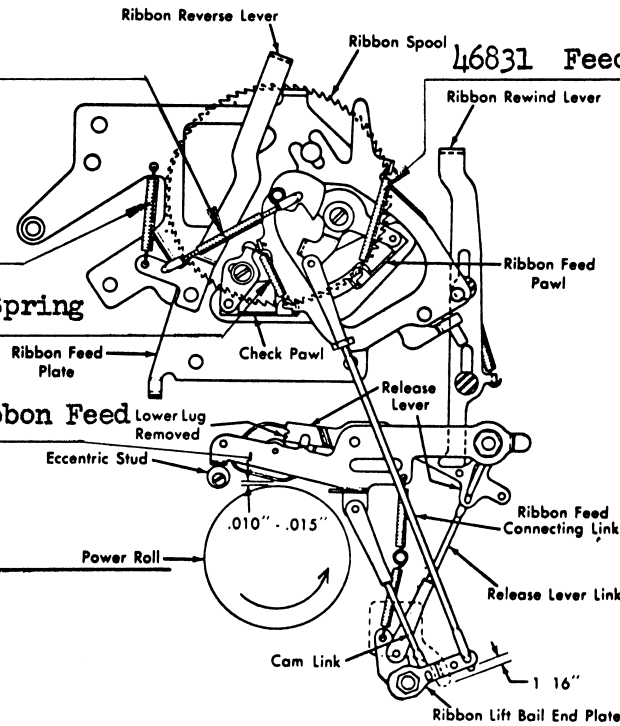


Fig. 7 Ribbon Feed Mechanism

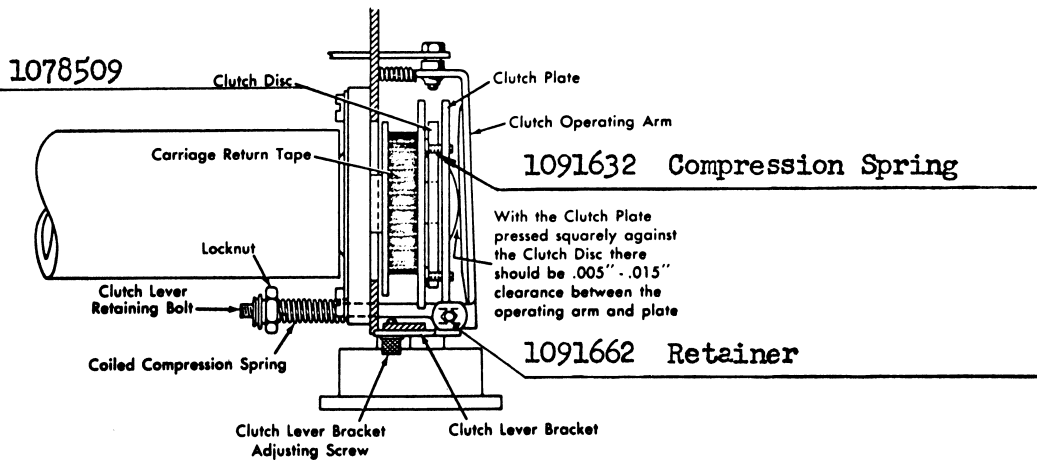


Fig. 8 Clutch Parts

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INPUT - OUTPUT TYPEWRITERS
PARTS LIST

<u>IBM #</u>	<u>BCD #</u>	<u>PART NAME</u>
1108147		Interlock Assy:
152612		Terminal
20186		Support
0173218		Screws
0152716		Terminal
0005186		Terminal
1108148		Strap
1108149		Strap
0005187		Terminal
0105826		Spring
0002819		Spacer
0025984		Spacer
37435		Spacer
326119		Plate
339108		Terminal
173210		Screws
138147		Insucator
339113		Spring
326067		Strip
1108145		Strip
1108146		Strip
326013		Strip
316457		Spring
118418		Screws
196298		Screws
1099826	34A69	Contact and Mod.
1099824	34A68	Contace Assy. - Outer