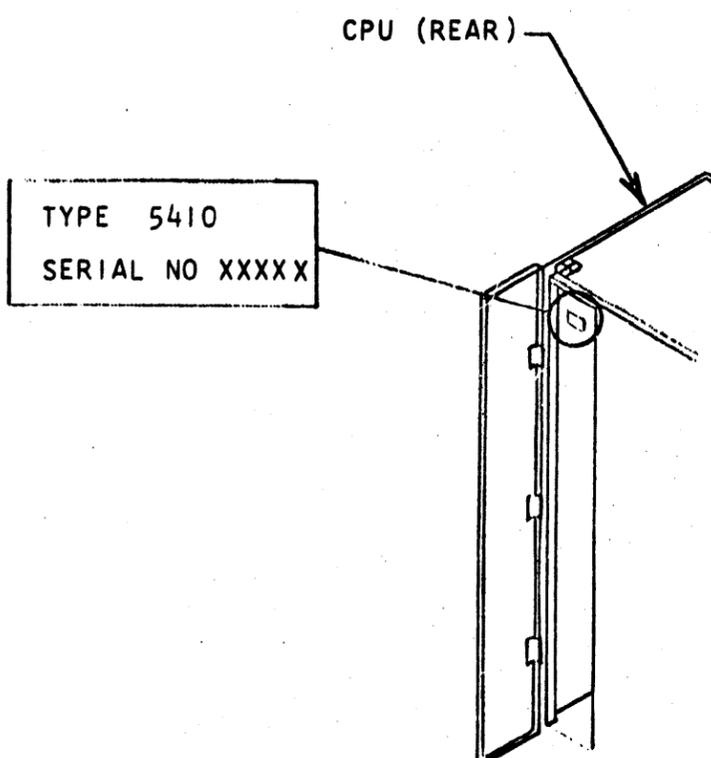


CHAPTER 1
GENERAL INFORMATION

- () 1.1 THIS MANUAL INCLUDES CPU INSTRUCTIONS AND SYSTEMS CABLING. REFERENCES ARE MADE TO UNIT INSTRUCTIONS FOR I/O UNITS.
- () 1.2 THIS SYSTEM IS DESIGNED TO BE INSTALLED BY ONLY ONE MAN.
- () 1.3 ALWAYS PRACTICE GOOD SAFETY HABITS -- FOR DETAILED SAFETY PROCEDURES, REFER TO APPENDIX I.
- () 1.4 A WESTON 901 DC METER (PN 460879) OR DIGITEC (PN 453046) IS NEEDED TO CHECK DC VOLTAGES.
- () 1.5 BEFORE BEGINNING THE INSTALLATION:
 - () 1.5.1 PLACE ALL PACKING CARTONS TOGETHER ALONG A WALL OR IN AN ACCESSABLE LOCATION.
 - () 1.5.2 OPEN ALL BOXES -- DETERMINE WHERE VARIOUS SHIP GROUPS ARE.
 - () 1.5.3 REMOVE AND FILE LOGICS AND MANUALS.
 - () 1.5.4 PLACE ALL INSTALLATION DOCUMENTATION TOGETHER. KEEP THESE INSTRUCTIONS AND ANY REFERENCE DRAWINGS RECEIVED TOGETHER DURING THE INSTALLATION FOR QUICK REFERENCE.
- () 1.6 CHECK OFF EACH STEP AS IT IS PERFORMED.
- () 1.7 THE 5410 CPU SERIAL NUMBER IS LOCATED AS SHOWN IN FIGURE 1.

FIGURE 1



EC	818664	818815	819016	818387	819020	818388	818392	577044	577045
DATE	8JUL71	18AUG71	15OCT71	8DEC71	10JAN72	31JAN72	22MAR72	22apr72	01JUN72
	577054	577066							
	7SEP72	10JAN73							

CHAPTER 2
SYSTEM ASSEMBLY

- () 2.1 UNPACK CPU:
NOTE: IF MACHINE IS CRATED, REFER TO UNPACKING/PACKING INSTRUCTIONS.
OTHERWISE, PROCEED AS FOLLOWS.
- () 2.1.1 REMOVE PLASTIC SHROUD COVERING MACHINE.
- () 2.1.2 REMOVE ALL PACKING MATERIAL, INCLUDING TAPE, EXCEPT ON CABLES.
- () 2.1.3 REMOVE COLORED TAG ON POWER CABLE AND PULL OUT FROM UNDER POWER
CONTROL BOX AT REAR OF MACHINE.
- () 2.1.4 POSITION THE 5410 CPU AND LOWER THE LEVELING STUDS TO LEVEL AND SECURE THE
MACHINE.
- () 2.1.5 OPEN COVERS AND INSPECT EACH UNIT CAREFULLY FOR ANY SIGN OF PHYSICAL
DAMAGE.
NOTE: INSURE THAT FINGER STOCKS ON ALL COVERS ARE MAKING CONTACT WITH
FRAME BLADES. TO PREVENT ESD PROBLEMS.
- () 2.3 ASSURE THAT THE CUSTOMER'S VOLTAGE MEETS THE POWER SPECIFICATIONS INDICATED IN THE
INSTALLATION PLANNING MANUAL (HAVE THE POWER COMPANY CORRECT IF NECESSARY).
- 2.4 IF 1442 IS PRESENT ON THE SYSTEM:
REFER TO 1442 INSTALLATION INSTRUCTIONS (SEE PACK-UNPACK INSTRUCTIONS). PERFORM
SECTIONS 1 AND 2 THEN RETURN TO THIS POINT.
- 2.5 FOR 5422 INSTALLATION:
GO TO 5422 INSTALLATION INSTRUCTIONS, PERFORM UNPACKING INSTRUCTIONS AND RETURN TO
THIS POINT.
- 2.6 FOR 5424 INSTALLATION:
GO TO 5424 MFCU INSTALLATION MANUAL. PERFORM UNPACKING THROUGH PRE-POWER ON CHECK
INSTRUCTIONS AND RETURN TO THIS POINT.

- (4) 2.7 INSTALL FOUR CABLE RACEWAYS 2590045 TO REAR MODESTY SKIRT 2590044. (IF THESE HAVE BEEN FACTORY INSTALLED, IT MAY ONLY BE NECESSARY TO LOOSEN THE NUTS SLIGHTLY TO ALLOW ADJUSTMENT.) LAY REAR MODESTY SKIRT FLAT ON THE FLOOR AND ASSEMBLE PER FIGURE 3. LEAVE NUTS LOOSE TO ADJUST THE RACEWAYS LATER. **NOTE:** THIS OPERATION NOT NECESSARY ON MACHINES BUILT TO EC 818940 AND BEYOND.
- (U) 2.8 REMOVE SHIPPING TAPE FROM CPU CABLES.
- (4) 2.9 BRING THE 5424/5422 INTO POSITION AND ATTACH THE REAR MODESTY SKIRT TO THE CPU AND 5422/5424 (FIGURE 4, STEP 1).
NOTE: CABLES MUST EXIT THE CPU ABOVE THE RACEWAY IN WHICH THEY WILL LATER BE ROUTED (SEE FIGURE 7, SHEET 7).
NOTE: IT MAY BE NECESSARY TO ADJUST CABLE RACEWAY 7369613 ON FRONT OF CPU SEE FIG (4) ON MACHINES BUILT TO EC 818940 AND BEYOND.
- (4) 2.10 LAY CABLES IN RACEWAYS, BUT DO NOT PLUG.
- (U) 2.11 LOOSEN HORIZONTAL BRACKET 2590073 (FIGURE 4, STEP 2).
- (4) 2.12 FASTEN RACEWAYS TO CPU (FIGURE 4, STEP 3). USE CAUTION NOT TO ACCIDENTLY MOVE THE 5422/5424 AS DAMAGE TO THE RACEWAYS MAY RESULT. **NOTE:** THIS OPERATION IS NOT NECESSARY ON MACHINES BUILT TO EC 818940 AND BEYOND.

FIGURE 3

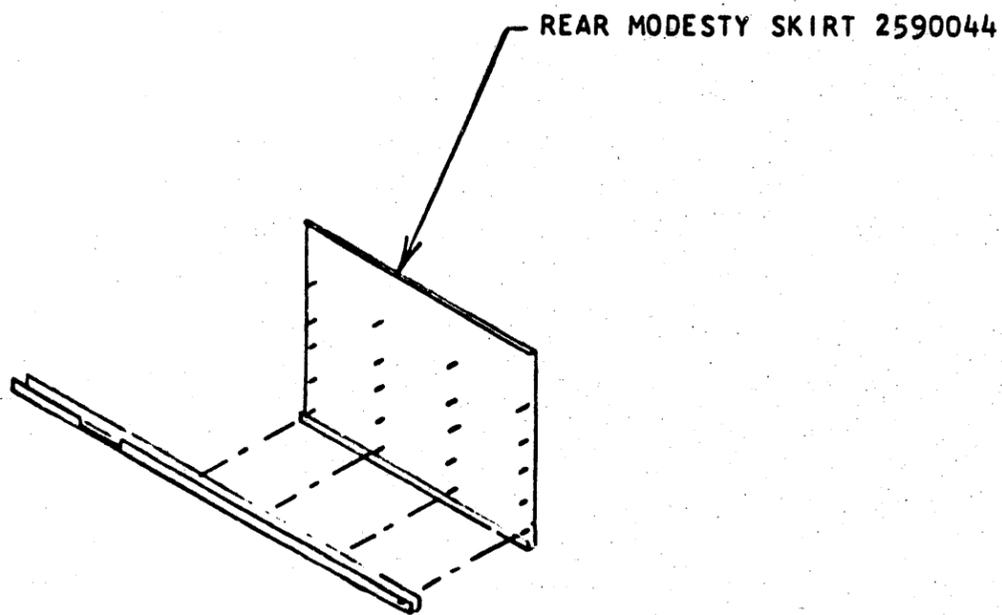
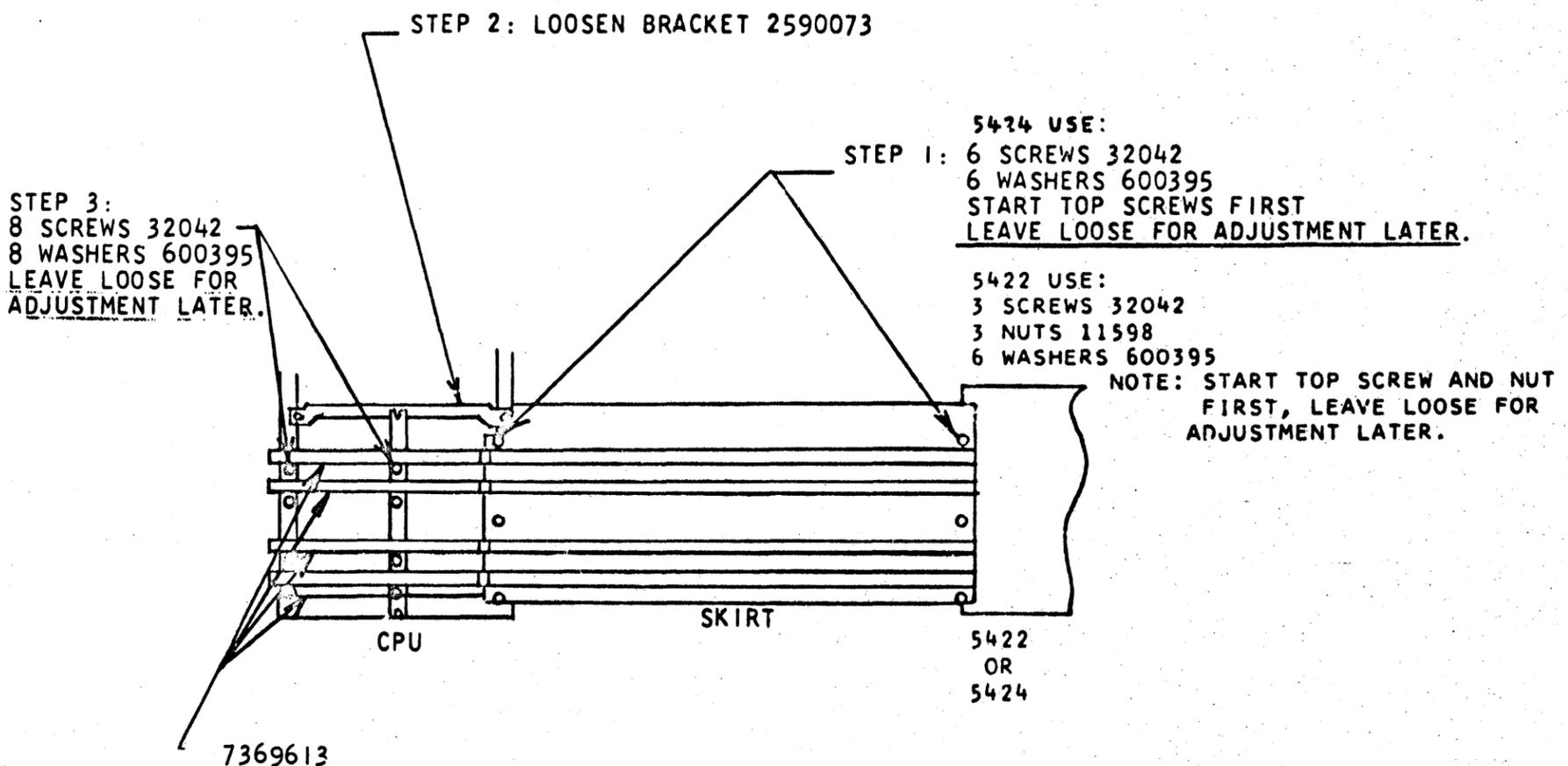


FIGURE 4



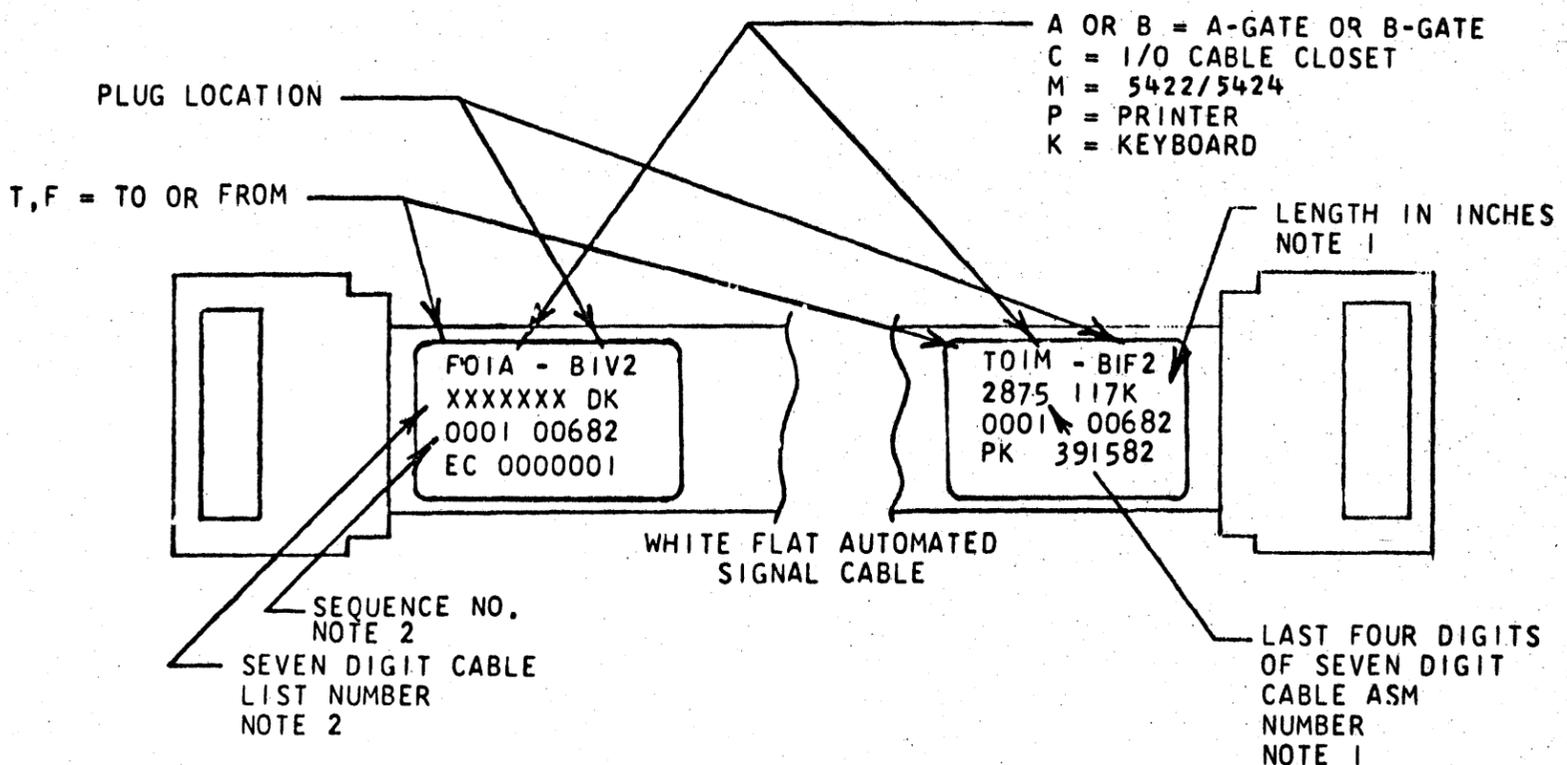
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EC	818664	818815	819016	818387	819020	818388	818392	577044	577045	577054
DATE	8JUL71	18AUG71	15OCT71	8DEC71	10JAN72	31JAN72	22MAR72	22apr72	01JUN72	7SEP72

- () 2.13 SYSTEM GROUND CHECK
- (4) 2.13.1 USE CE METER
- (9) 2.13.2 REFER TO LOGIC PAGE ZB512 AND ZB522 IF NECESSARY TO LOCATE BRASS PLATE.
- (U) 2.13.3 MEASURE BETWEEN DC GROUND AND THE FRAME. DC GROUND IS THE BRASS PLATE BEHIND THE CONSOLE.
- (U) 2.13.4 ON THE R X 1 SCALE THE RESISTANCE MUST NOT EXCEED 1.0 OHM.
- (U) 2.13.5 REMOVE THE TWO GROUND STRAPS BETWEEN THE BRASS PLATE DC GROUND AND FRAME.
- (4) 2.13.6 ON THE R X 1000 SCALE THE RESISTANCE MUST EXCEED 5 MEGOHMS* THIS IS NORMALLY INDICATED BY NO MOVEMENT OF THE POINTER AFTER 3 SECONDS FOR CAPACITIVE DISCHARGE. IF BSCA OR MLTA IS INSTALLED, MAKE SURE THE DATA SET AND AUTO CALL CABLES ARE UNPLUGGED FROM THE COMMUNICATION EQUIPMENT FOR THIS READING.
- (4) 2.13.7 LEAVE GROUND STRAPS DISCONNECTED AND METER CONNECTED TO DETECT ANY GROUNDS DURING CONNECTION OF I/O CABLES IN THE FOLLOWING STEPS.
- (U) 2.14 FIGURES 5 AND 6 SHOW HOW TO READ THE LABELS ON MOST OF THE SYSTEM FLAT CABLES AND HOW TO FOLD FLAT CABLES. (5475 KEYBOARD AND 5471 PRINTER KEYBOARD CABLE LABELS DO NOT IN ALL CASES USE THE METHOD OF IDENTIFICATION SHOWN IN FIGURE 5.)

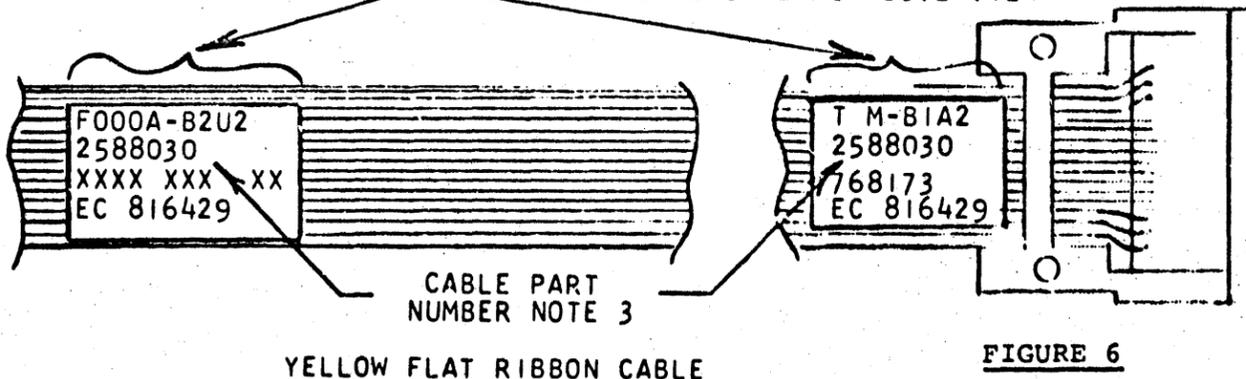
* IF 5444 FILE IS ATTACHED, THE RESISTANCE MAY BE 450K OHMS FOR ONE FILE AND 250K OHMS FOR TWO FILES.

FIGURE 5



NOTE 1: USE THIS INFORMATION PLUS CEM 251 TO ORDER TEMPORARY REPAIR CABLE IF FOUND DEFECTIVE DURING INSTALLATION.

NOTE 2: USE THIS INFORMATION TO ORDER A REPLACEMENT CABLE SEQUENCE.
FIRST LINE SAME AS ABOVE VIEW



NOTE 3: REORDER THIS PART NUMBER IF FOUND DEFECTIVE DURING INSTALLATION.

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EC	818664	818815	819016	818387	819020	818388	818392	577044	577045	577054
DATE	8JUL71	18AUG71	15OCT71	8DEC71	10JAN72	31JAN72	22MAR72	22apr72	01JUN72	7SEP72

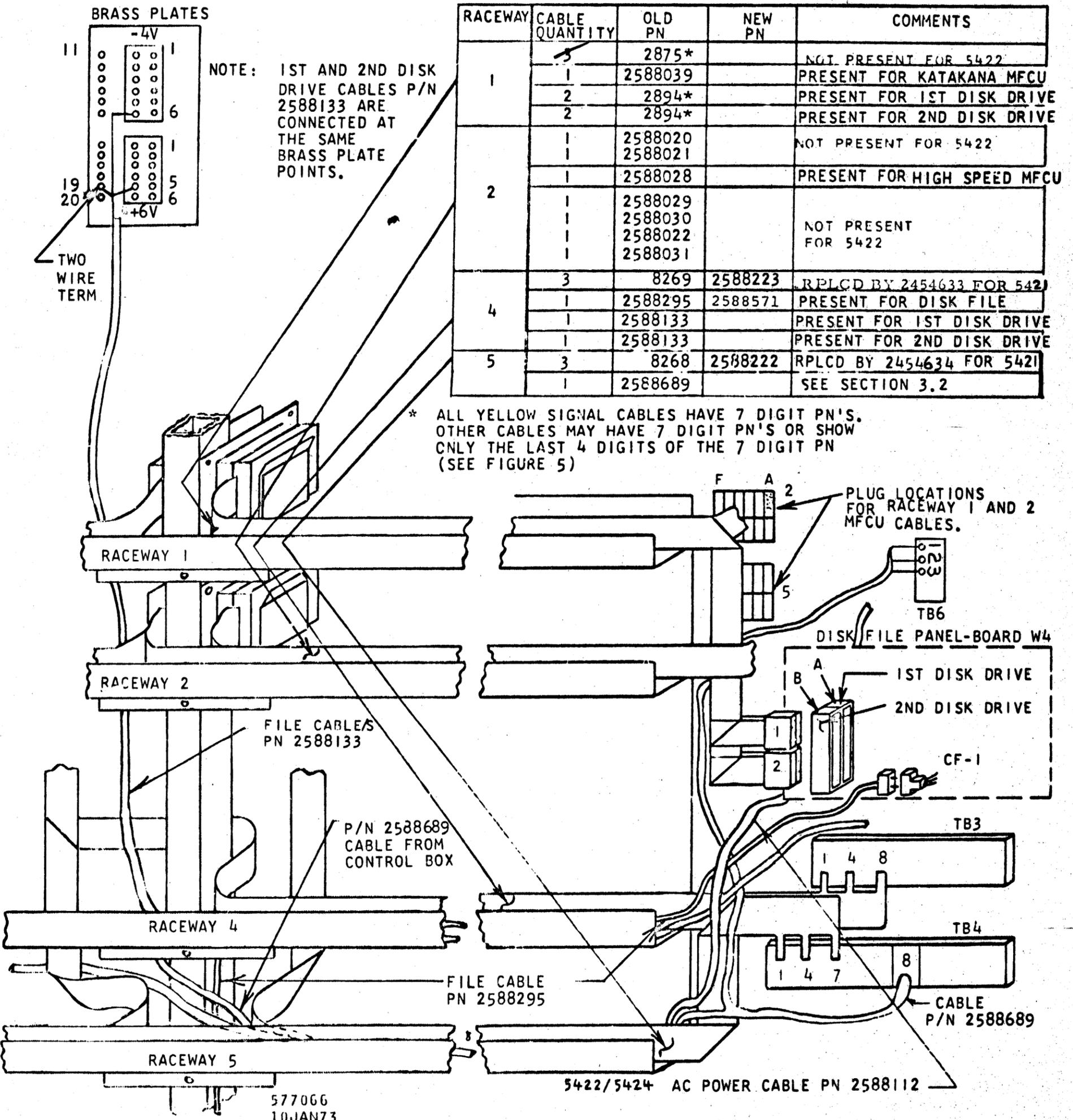
CHAPTER 3

CABLE INSTALLATION

CAUTION: SERIOUS DAMAGE MAY RESULT IF VOLTAGE CABLES ARE CONNECTED TO THE WRONG TERMINALS.

- (4) 3.1 PLUG ALL CABLES GOING TO THE 5422/5424 AND FILE (IF INSTALLED) IN THE SEQUENCE GIVEN IN FIGURE 7 BELOW, PROCEEDING FROM TOP TO BOTTOM. USE THE CABLE LABELS TO INDICATE PART NUMBERS AND PLUG LOCATIONS.
NOTE: OLD AND NEW CABLE PART NUMBERS ARE GIVEN TO MAKE THIS INSTRUCTION APPLICABLE TO EARLY AND LATE MACHINE LEVELS.
- (4) 3.2 CABLE P/N 2588689 (SEE FIG 7) IS TO PROVIDE POWER FOR MFCU METER POWER PACK. WHEN NO POWER PACK IS PROVIDED AT MFCU METER, YOU WILL TERMINATE THIS CABLE AT TB4-8 AND TB6-1, 2 AND 3. IF CABLE IS NOT REQUIRED, INSULATE TERMINALS AND STORE IN CPU.
- (4) 3.3 ROUTE THE 5422/5424 AC POWER CABLE (2588112) TO THE PLUG IN CONNECTION J2 WHICH IS LOCATED ON THE LOWER LEFT SIDE OF THE CPU. THIS CABLE IS SHIPPED COILED INSIDE THE PLASTIC COVER.
- (4) 3.4 FOR 5203 INSTALLATION:
GO TO THE 5203 PRINTER INSTALLATION MANUAL. PERFORM UNPACKING THRU PRE-POWER-ON CHECK INSTRUCTIONS AND RETURN TO SHEET 8.
- (4) 3.4.1 FOR 5421 INSTALLATION:
GO TO 5421 INSTALLATION MANUAL. PERFORM UNPACKING THRU PRE-POWER-ON CHECKS AND RETURN TO CHAPTER 4 OF THESE INSTRUCTIONS.

FIGURE 7



RACEWAY	CABLE QUANTITY	OLD PN	NEW PN	COMMENTS
1	5	2875*		NOT PRESENT FOR 5422
	1	2588039		PRESENT FOR KATAKANA MFCU
	2	2894*		PRESENT FOR 1ST DISK DRIVE
	2	2894*		PRESENT FOR 2ND DISK DRIVE
2	1	2588020		NOT PRESENT FOR 5422
	1	2588021		
	1	2588028		PRESENT FOR HIGH SPEED MFCU
	1	2588029		
	1	2588030		
	1	2588022		
4	3	8269	2588223	RPLCD BY 2454633 FOR 5421
	1	2588295	2588571	PRESENT FOR DISK FILE
	1	2588133		PRESENT FOR 1ST DISK DRIVE
	1	2588133		PRESENT FOR 2ND DISK DRIVE
5	3	8268	2588222	RPLCD BY 2454634 FOR 5421
	1	2588689		SEE SECTION 3.2

* ALL YELLOW SIGNAL CABLES HAVE 7 DIGIT PN'S. OTHER CABLES MAY HAVE 7 DIGIT PN'S OR SHOW ONLY THE LAST 4 DIGITS OF THE 7 DIGIT PN (SEE FIGURE 5)

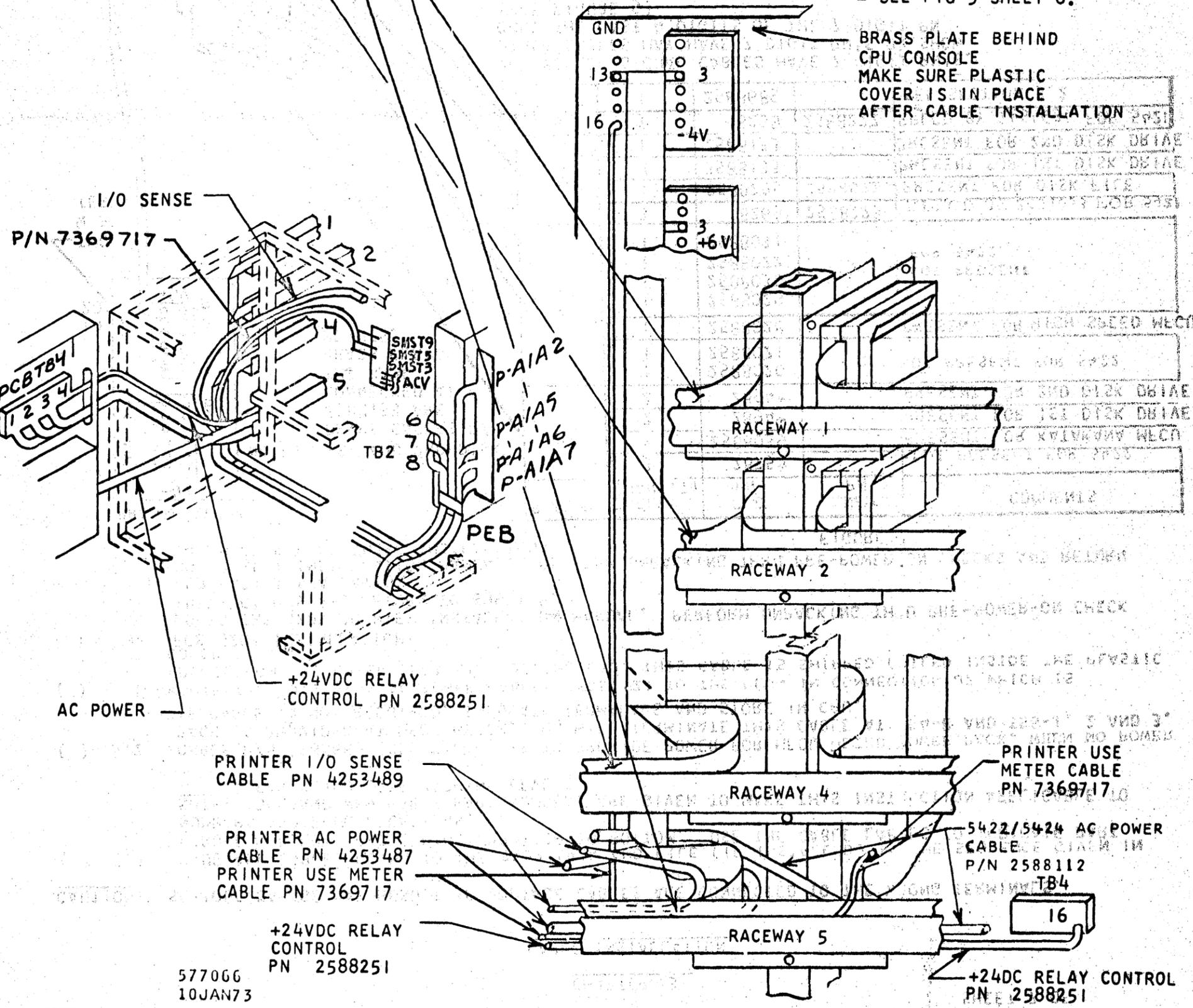
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		810664	818815	819016	8DEC71	10JAN72	818388	22MAR72	22apr72	01JUN72	7SEP72

- (4) 3.5 INSTALL THE PRINTER CABLES FROM RACEWAY 4 TO THE CPU BRASS PLATE. THESE CABLES ORIGINATE FROM THE PRINTER AND ARE SHIPPED COILED IN THE PRINTER NEAR THE PCB.
NOTE: ON EARLY MACHINES, THESE CABLES ARE ATTACHED AT THE CPU END AND WILL BE ROUTED TO THE PRINTER PEB (BY PRINTER INSTRUCTIONS).
- (✓) 3.6 A SINGLE WIRE JUMPER (+24VDC RELAY CONTROL) PN 2588251 IS SHIPPED IN THE 5410 SHIPPING GROUP. IT IS NOT CONNECTED AT EITHER END. ROUTE THIS JUMPER IN RACEWAY 5 FROM 5422/5424 TO PRINTER AND CONNECT AS FOLLOWS: (NOTE: DO NOT ROUTE THIS JUMPER THROUGH THE CABLE CLAMP AT THE PRINTER PCB.)
5422/5424 TO TB4-16 TO PRINTER PCBTB4-4 (IN POWER CONTROL BOX)
- () 3.7 CABLE P/N 7369717 IS TO PROVIDE POWER FOR PRINTER USAGE METER WHEN NO POWER PACK IS PROVIDED. YOU WILL TERMINATE THIS CABLE AT METER POWER PACK TERMINAL SMS-T3, T5, AND T9. IF CABLE IS NOT REQUIRED, INSULATE TERMINALS AND STORE IN CPU.
- () 3.8 INSTALL AND VERIFY REMAINING CABLES UTILIZING FIG 8 AS REQUIRED.
- (4) 3.9 IF YOUR PRINTER HAS IDLE CONTROL INSTALLED, RACEWAY #1 WILL HAVE THREE CABLES. (SEE TABLE BELOW.)

FIGURE 8

RACEWAY #	CABLE QUANTITY	OLD PN	NEW PN	COMMENTS
1	2 OR 3	2875*		INSTALLED BY PRINTER INSTRUCTIONS
2	1	2588023		INSTALLED BY PRINTER INSTRUCTIONS
4	3	8225*	2588212	INSTALL AT CPU BRASS PLATE
5	1	7369717		MAY BE INSTALLED BY PRINTER INSTRUCTIONS
	3	8268*	2588222	

* = SEE FIG 5 SHEET 6.

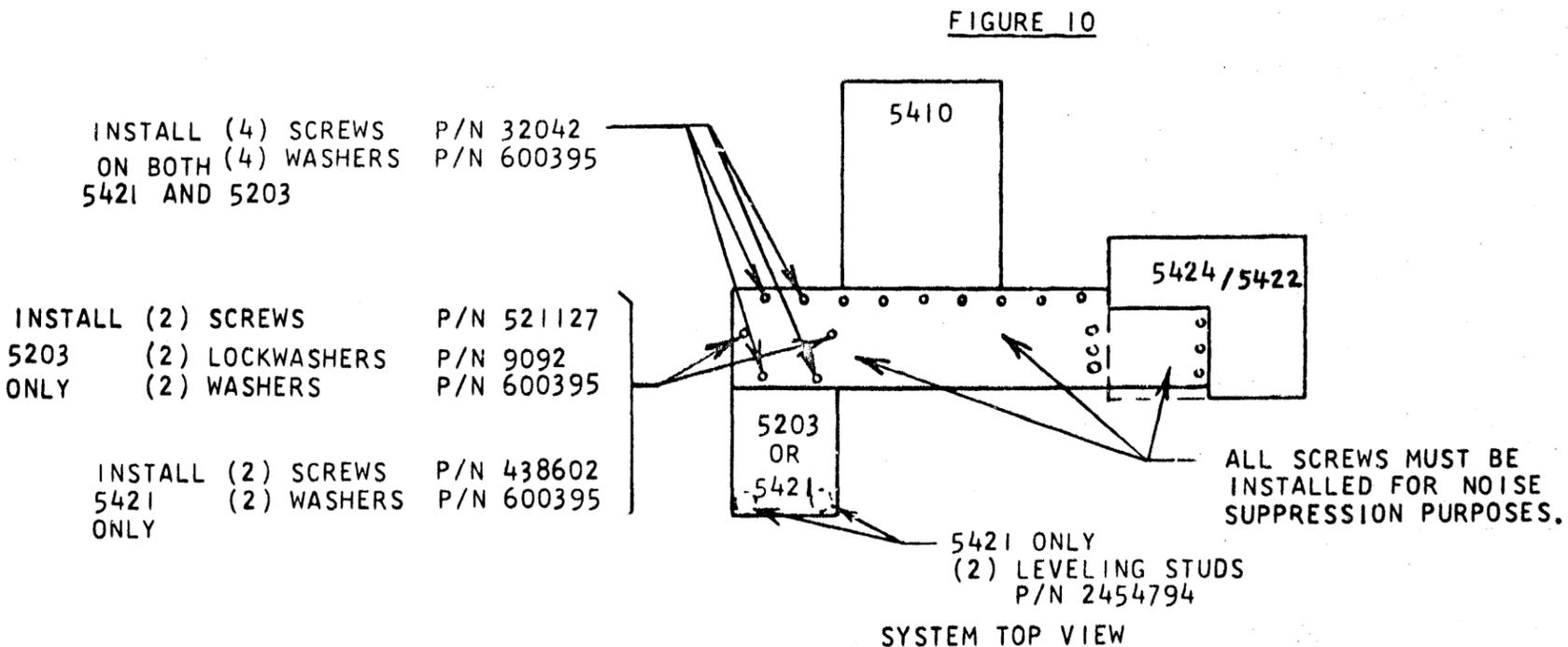
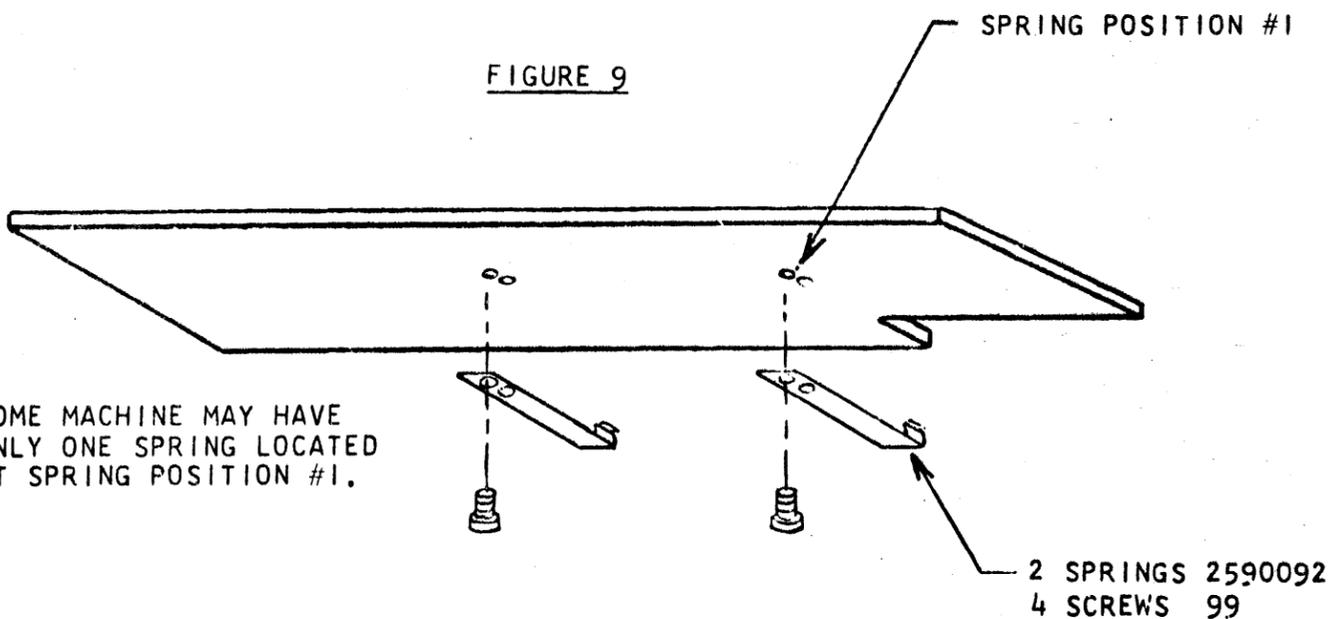


ENG. CHANGE NO.	DATE	3JUL71	13AUG71	15OCT71	818387	819020	31JAN72	818392	577044	577045	577054
		818364	818815	819016	8DEC71	10JAN72	818388	22MAR72	22apr72	01JUN72	7SEP72

CHAPTER 4

TABLE TOP INSTALLATION

- (4) 4.1 OPEN TABLE TOP BOX. INSTALL FRONT MODESTY SKIRT RETAINING SPRINGS WHEN APPLICABLE, PER FIGURE 9. THESE MAY ALREADY BE FACTORY INSTALLED. LATER MACHINES WILL HAVE NO SPRINGS. OMIT NEXT TWO STEPS ON 5422 INSTALLATIONS.
- (4) 4.2 ON THE LEFT SIDE OF MFCU START (1) SCREW (PN 130434). PLACE THIS SCREW IN THE CENTER HOLE OF THE THREE AVAILABLE SO THE TABLE TOP WILL HAVE A SUPPORT ON THE MFCU END. REFER TO FIGURE 10.
- (4) 4.3 LAY THE TABLE TOP ACROSS THE 5203 PRINTER OR 5421 WITH NOTCH TOWARD REAR AT THE MFCU END. REST THE TABLE TOP ON SCREW INSTALLED ON SIDE OF MFCU.
- (4) 4.4 ATTACH THE TABLE TOP TO THE 5422/5424 USING (3) SCR (PN130434), ONE OF WHICH IS SUPPORTING THE TABLE TOP, (3) WASHERS (PN 600395), AND (3) LOCKWASHERS (PN 9092).
CAUTION: DO NOT REMOVE THE SUPPORT SCREW UNTIL OTHER TWO SCREWS HAVE BEEN INSTALLED.
- (4) 4.5 LEVEL THE 5203 TO THE TABLE TOP USING THE LEVELING STUDS. IF INSTALLING 5421 OBTAIN (2) LEVELING STUDS (P/N 2454794) FROM SHIPPING GROUP (P/N 2454602). SEE FIG 10.
- (4) 4.6 CHECK ALIGNMENT OF HOLES AT PRINTER END OF THE TABLE TOP AND FRONT OF CPU. (IT MAY BE NECESSARY TO MOVE THE 5422/5424 AND TABLE TOP.)
- (4) 4.7 FASTEN THE 5203 PRINTER TO TABLE TOP WITH FOUR (4) SCREWS, P/N 32042, (2) SCREWS P/N 521127, (2) LOCKWASHERS P/N 9092 AND (6) WASHERS P/N 600395. SEE FIG 10 TO LOCATE SCREWS THAT REQUIRE LOCKWASHERS. LEAVE ALL SCREWS LOOSE. SOME MACHINES WILL BE PROVIDED WITH (6) SCREWS P/N 32042 AND (6) WASHERS P/N 600395. LEAVE SCREWS LOOSE AS ABOVE.
- (4) 4.7.1 FASTEN THE 5421 TO TABLE TOP WITH (2) SCREWS, P/N 438602, (2) WASHERS P/N 600395, (4) SCREWS P/N 32042 AND (4) WASHERS P/N 600395. SEE FIG 10. LEAVE SCREWS LOOSE.
- (4) 4.8 ATTACH THE REAR MODESTY SKIRT TO THE TABLE TOP USING (3) SCREWS (P/N 32042) AND (3) WASHERS (P/N 600395).



577066
10JAN73

ENG. CHANGE NO.	DATE	2JUL71 818664	18AUG71 818315	15OCT71 819016	818387 8DEC71	819020 10JAN72	31JAN72 818388	22MAR72 818392	577044 22apr72	577045 01JUN72	577054 7SEP72
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- (4) 4.9 FASTEN BRACKET (PN 2590073) -- REFER TO FIGURE 11 -- AT FRONT OF THE CPU TO TABLE TOP USING (4) SCREWS (PN 32042) AND (4) WASHERS (PN 600395).
- (4) 4.10 LEVEL THE MFCU USING THE 4 RECTANGULAR LEVELING FEET (PN 2592430) SUPPLIED WITH THE 5424 SHIPPING GROUP. (SEE FIGURE 10.1) IF INSTALLING 5422 USE (4) LEVELING STUDS P/N2454794 FROM SHIP GROUP P/N7367502.
- () 4.11 PERFORM THE FOLLOWING:
- TIGHTEN SCREWS MOUNTING BRACKETS (PN 2590073 AND PN 2590074) TO CPU FRAME (SEE BELOW).
 - TIGHTEN SCREWS MOUNTING CABLE RACEWAYS TO BRACKET (PN 2590074) AND LEFT SIDE OF CPU FRAME.
 - TIGHTEN SCREWS MOUNTING REAR MODESTY SKIRT TO CPU AND 5422/5424.
 - TIGHTEN NUTS MOUNTING CABLE RACEWAYS TO THE REAR MODESTY SKIRT.
 - TIGHTEN SCREWS MOUNTING "Z" BRACKET.
 - TIGHTEN SCREWS MOUNTING TABLETOP TO 5203 PRINTER OR 5421 PRINTER CONTROL UNIT.

FIGURE 10.1

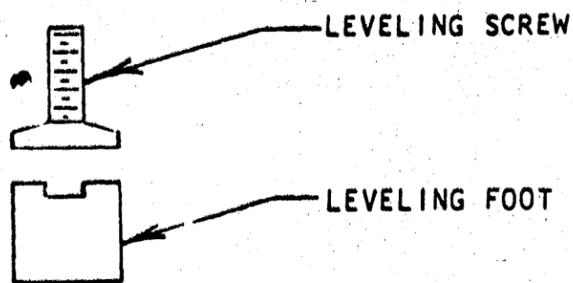
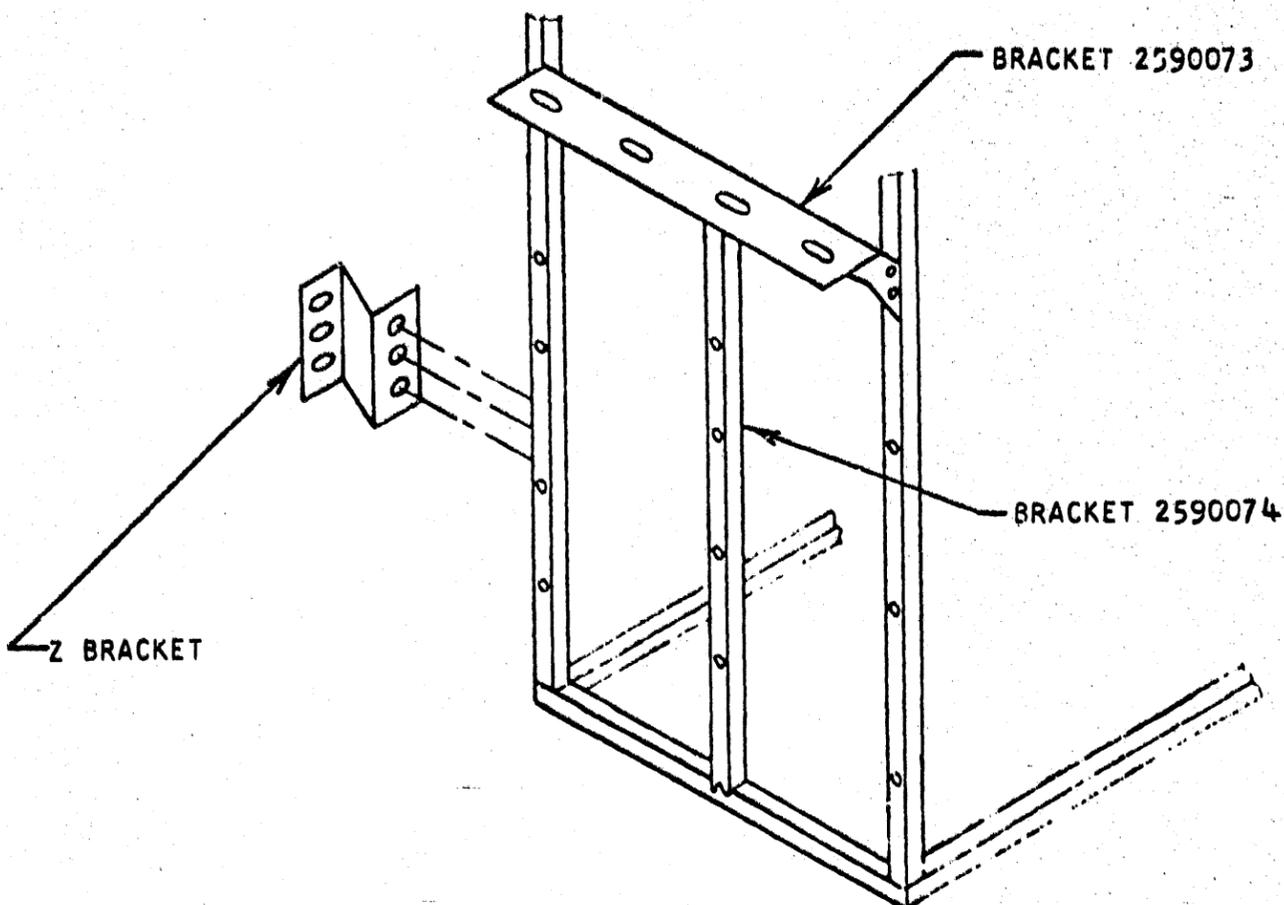


FIGURE 11



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ENG.	DATE	3JUL71	10AUG71	15OCT71	818387	819020	31JAN72	22MAR72	577044	577045	577054
CHANGE NO.		813664	S18815	819016	8DEC71	10JAN72	818388	818392	22apr72	01JUN72	7SEP72

CHAPTER 4A

DISK FILE (5444) FEATURE INSTALLATION

- () 4A.1 FOR THE MFCU 5424 INSTALLATION, SEE SECTION 8 OF THE 5424 INSTALLATION MANUAL TO INSTALL DISK FILE.
- () 4A.2 FOR 5422 INSTALLATION, REFER TO SECTION 2 OF THE 5422 INSTALLATION INSTRUCTIONS FOR DISK FILE INSTALLATION INSTRUCTIONS.
- () 4A.3 FOR 5444 FILE CABLING, REFER TO 5424 INSTALLATION INST. SECTION 8.

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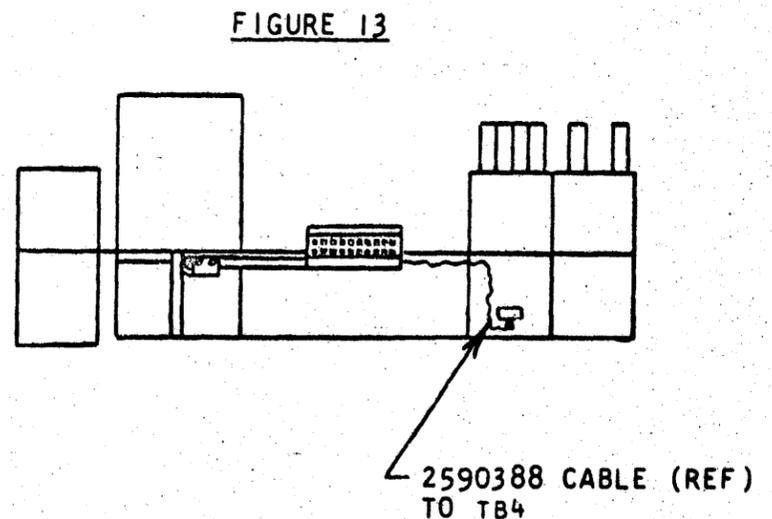
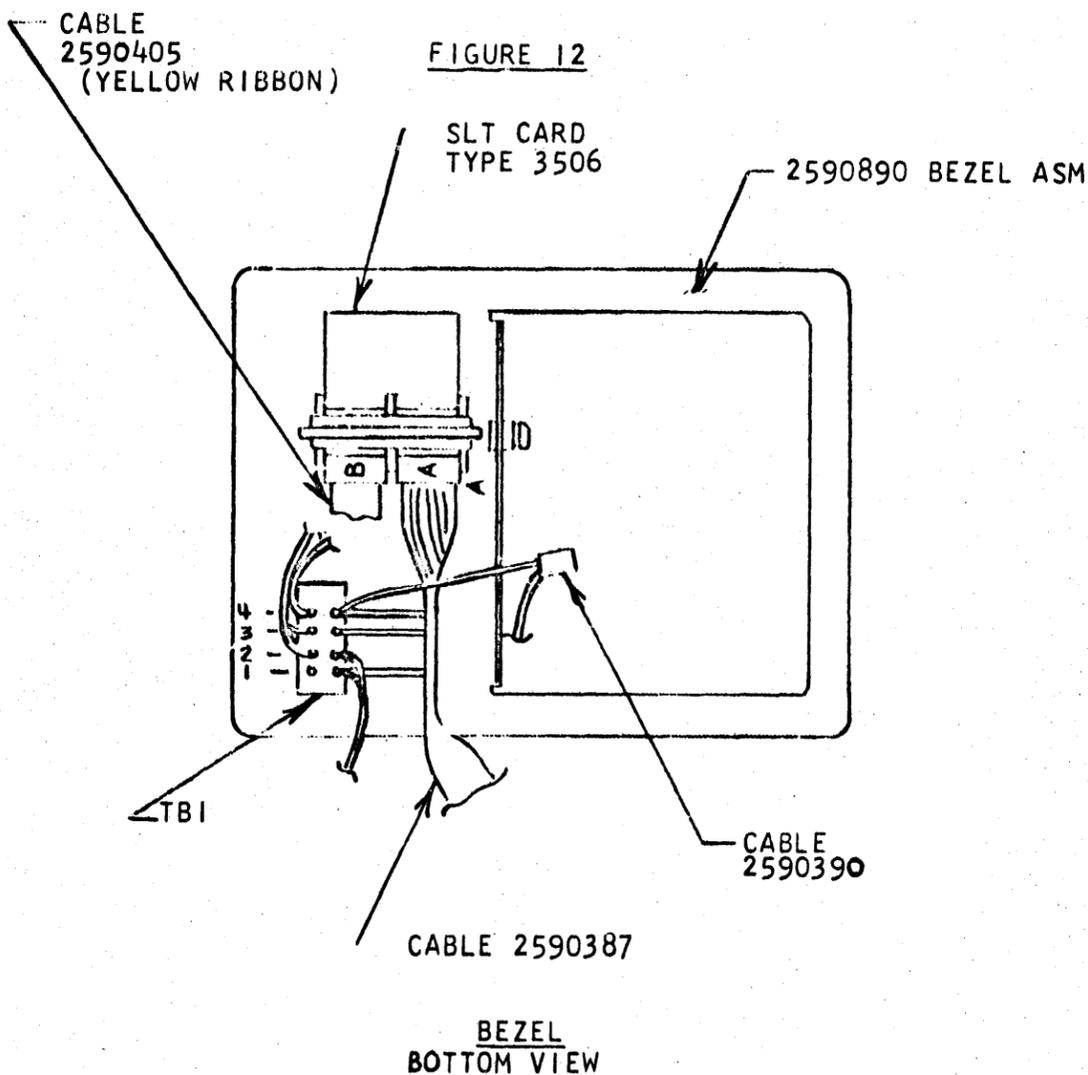
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DATE	8-5-70	8DEC71	10JAN72	31JAN72	22MAR72	22apr72	01JUN72	7SEP72

CHAPTER 5

PRINTER KEYBOARD (5471) FEATURE INSTALLATION

(IF YOUR SYSTEM DOES NOT HAVE A PRINTER KEYBOARD FEATURE, SKIP THIS CHAPTER.)

- () 5.1 THREE PRINTER KEYBOARD FLAT CABLES AND ONE TAPED CABLE ARE ATTACHED TO THE CPU. THE CPU END OF THE TAPED CABLE IS PLUGGED INTO SOCKET J4 ON THE LEFT SIDE OF THE POWER CONTROL BOX. THE THREE FLAT CABLES ARE ROUTED THROUGH A FERRITE CORE. (REFER TO LOGIC PAGE ZB503 FOR CORE LOCATION.)
- () 5.2 ROUTE ALL FOUR CABLES THROUGH THE HOLE IN THE LEFT SIDE REAR OF THE PAN RECESSED IN THE TABLE TOP.
- () 5.3 REMOVE THE PLASTIC SHIELD FROM TERMINAL BLOCK TBI WHICH IS LOCATED ON THE BEZEL ASSEMBLY (PN 2590890). REFER TO FIGURE 12.
- () 5.4 POSITION BEZEL ASSEMBLY (PN 2590890) IN THE PAN SO THAT THE SHORT PERPENDICULAR LEG IS POINTING DOWNWARD AND THE LARGER HOLE IN THE FACE OF THE BEZEL IS ON THE RIGHT. THIS IS NORMAL BEZEL POSITION.
- () 5.5 SET THE BEZEL ON ITS LEFT SIDE ON THE PAN NEAR THE PAN'S LEFT SIDE.
- () 5.6 PLUG THE PADDLE CARD WITH THE LABEL "A", WHICH IS IN THE PAN, INTO SOCKET "A" ON THE 2-WIDE CARD SOCKET ON THE BEZEL.
- () 5.7 CONNECT THE THREE RING TERMINALS FROM THIS SAME CABLE TO POSITIONS ON TERMINAL BLOCK TBI AS THEY ARE BROKEN OUT OF THE CABLE: THE GREEN AND YELLOW LEAD ON TBI-4, THE BLACK LEAD NEAREST THE GREEN AND YELLOW LEAD ON TBI-3, AND THE REMAINING BLACK LEAD ON TBI-1.
- () 5.8 ROUTE THE LONG CABLE (PN 2590388), WHICH IS CONNECTED TO TBI-1 AND TBI-2 ON THE BEZEL ASSEMBLY, THROUGH THE HOLE AT THE RIGHT SIDE REAR OF THE PAN AND DOWN TO TB4 IN THE FRONT BASE OF 5422/5424. ROUTE THIS CABLE BEHIND THE CABLES WHICH EXIT FROM THE RIGHT SIDE OF THE MODESTY SKIRT CHANNELS. CONNECT THE WHITE LEAD TO TB4-3 AND THE BLACK LEAD TO TB4-9.
- () 5.9 IN THE PAN, CONNECT THE GREEN AND YELLOW LEAD WHICH COMES OFF THE WHITE NYLON 6-POSITION CONNECTOR TO POSITION TBI-4 IN THE BEZEL ASSEMBLY.
- () 5.10 REPLACE THE PLASTIC SHIELD ON TERMINAL BLOCK TBI.
- () 5.11 PLUG THE PADDLE CARD WITH THE LABEL "B", WHICH IS IN THE PAN, INTO SOCKET "B" ON THE 2-WIDE CARD SOCKET ON THE BEZEL.
- () 5.12 ATTACH CARD GUIDE (PN 811804) TO CARD (PN 5860228) AND PLUG THE CARD INTO THE FRONT SIDE OF THE 2-WIDE CARD SOCKET ON THE BEZEL.

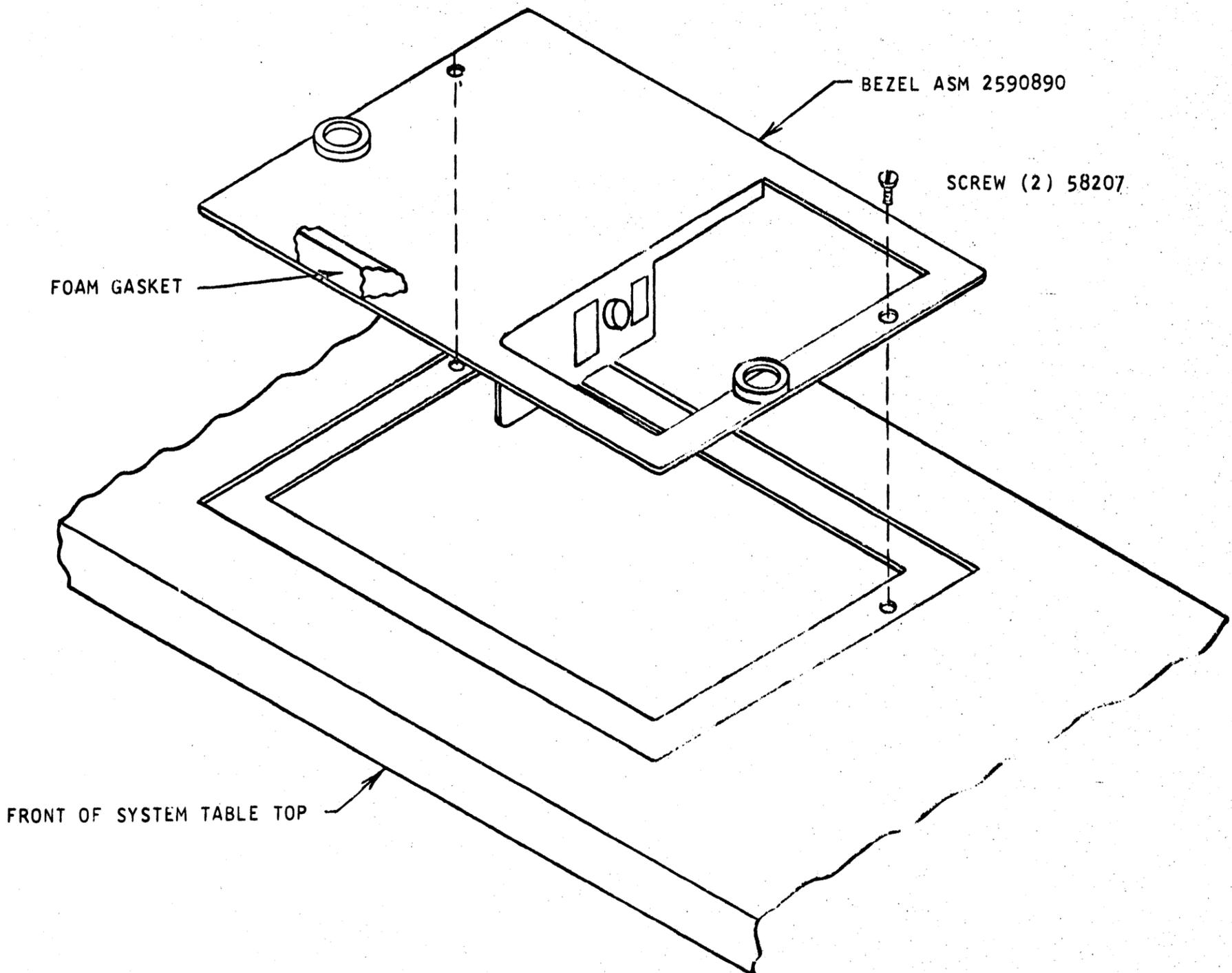


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ENG. CHANGE NO.	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION
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	318664		818815		819016		8DEC71		10JAN72	
									31JAN72	
									818388	
									22MAR72	
									818392	
									577044	
									22APR72	
									577045	
									01JUN72	
									577054	
									7SEP72	

- () 5.13 GENTLY LIFT THE BEZEL CLEAR OF THE HOLE AND THEN LOWER THE BEZEL INTO PLACE ON THE TABLE TOP BEING SURE THE TWO PADDLE CARDS DO NOT PULL LOOSE.
- () 5.14 POSITION THE CABLES IN THE PAN SO AS TO PREVENT PINCHING FROM THE BEZEL ASSEMBLY, AND SO THE FOUR CABLE CONNECTORS ARE POSITIONED IN THE EXPOSED, RIGHT SIDE OF THE PAN.
- () 5.15 FASTEN BEZEL ASSEMBLY (PN 2590890) TO THE TABLE TOP WITH TWO SCREWS (PN 58207).
- () 5.16 POSITION THE PRINTER KEYBOARD ON THE TABLE TOP TO THE RIGHT OF THE BEZEL ASSEMBLY WITH THE BACK SIDE OF THE PRINTER KEYBOARD TOWARD THE BEZEL ASSEMBLY.
- () 5.17 CONNECT THE FOUR CABLES WHICH EXIT THE PRINTER KEYBOARD TO THE FOUR CONNECTORS WHICH ARE LOCATED IN THE PAN. THE CONNECTORS ARE ALL DIFFERENT SIZES SO YOU CANNOT PLUG THE WRONG CABLES TOGETHER.
- () 5.18 BEING CAREFUL NOT TO DAMAGE THE FOAM GASKETS ON THE BEZEL, ALLOW THE CABLES TO COIL IN THE PAN AS YOU POSITION THE PRINTER KEYBOARD ON TOP OF THE BEZEL ASSEMBLY. THE FRONT TWO FEET OF THE PRINTER KEYBOARD MUST LOCATE IN THE DONUT-SHAPED FOOT LOCATORS ON THE BEZEL ASSEMBLY.

FIGURE 14



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ENG. CHANGE NO.	DATE	3JUL71	18AUG71	15OCT71	818387	819020	31JAN72	22MAR72	577044	577045	577054
		818364	818815	819016	8DEC71	10JAN72	818388	818392	22APR72	01JUN72	7SEP72

CHAPTER 7
BSCA FEATURE INSTALLATION

IF YOUR SYSTEM DOES NOT HAVE BSCA FEATURE, SKIP THIS CHAPTER.

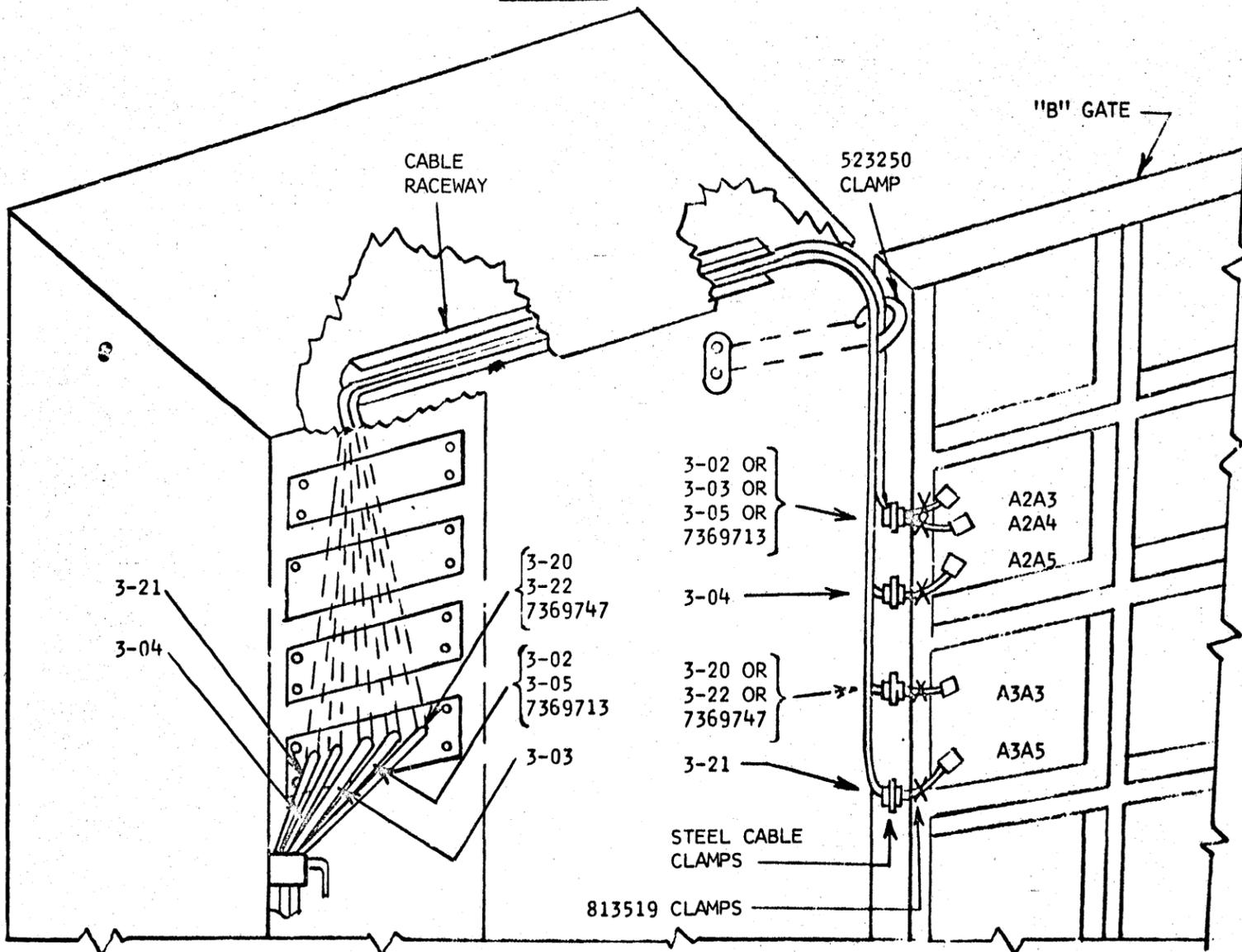
- () 7.1 CABLE MOUNTING HARDWARE AND LOCAL ATTACH CABLE WILL BE SHIPPED WITH THE SYSTEM. EXTERNAL MACHINE CABLES, WHICH SHOULD HAVE BEEN RECEIVED SEPARATELY, WILL BE INSTALLED AS REQUIRED - SEE CHART BELOW TO DETERMINE WHAT CABLE AND GROMMET IS REQUIRED FOR YOUR CONFIGURATION.

BSCA-1/2 CONFIGURATION	KEY #	CABLE P/N	FROM	TO	GROMMET	PLUG
HIGH SPEED (BSCA-1) MFI #2590813	3-03	2590807	DATA SET	B-A2A3 B-A2A4	338239	246463
MED SPEED (BSCA-1) NOTE 1 MFI #2590812 OR 2545628	3-02	2590800	DATA SET	B-A2A3	5313905	1143048
MED SPEED (BSCA-2) NOTE 1 MFI #7369725	3-20	2590800	DATA SET	B-A3A3	5313905	1143048
MED SPEED (BSCA-1) NOTE 1 MFI #2590812 OR 2545628	3-05	2590800+ ADAPTER	DATA SET NOTE 2	B-A2A2	5313905	1143048
MED SPEED (BSCA-2) NOTE 1 MFI #7369725	3-22	2590800+ ADAPTER	DATA SET NOTE 2	B-A3A3	5313905	1143048
LOCAL (MODEMLESS) ATTACH (BSCA-1) MFI #7369712	NONE	7369713	ATTACHING BSCA	B-A2A3	5313905	1143048
LOCAL (MODEMLESS) ATTACH (BSCA-2) MFI #7369742	NONE	7369747	ATTACHING BSCA	B-A3A3	5313905	1143048
AUTO CALL BSCA-1 MFI #2590815 OR 7369732	3-04	2590802	AUTO CALL UNIT	B-A2A5	5313905	1143048
AUTO CALL BSCA-2 MFI #7369746 OR 7369732	3-21	2590802	AUTO CALL UNIT	B-A3A5	5313905	1143048

NOTE 1 - MEDIUM SPEED WITHOUT THE LOCAL ATTACH (MODEMLESS) FEATURE.
NOTE 2 - USED IN WORLD TRADE WITH GH2002 MODEM.

- () 7.2 ROUTE THE CABLES/CABLE THROUGH THE LEFT REAR ENTRY POSITION (SHOWN BELOW), THROUGH THE CABLE RACEWAY AND THROUGH THE 523250 CLAMP ON THE B GATE. PLUG THE CABLES INTO B-A2 AND B-A3 AS INDICATED BY ABOVE CHART. SEE FIG 19.
- () 7.3 STRAP THE DATA SET CABLE AND AUTO CALL CABLE TO THE FLAT CABLE RACEWAY ON THE BACK SIDE (CARD SIDE) OF THE B-A2 GATE POSITION WITH STRAPS, PN 813519. CLAMP CABLES TO B GATE WITH STEEL CLAMPS. SEE FIGURE 19.

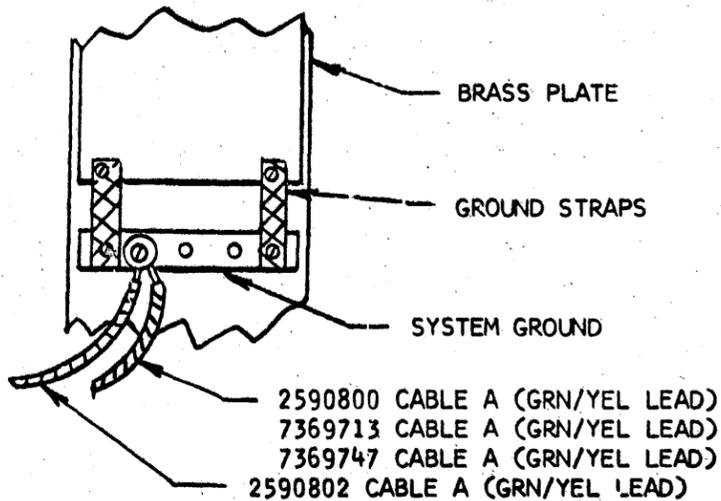
FIGURE 19



ENG. DATE	8JUL71	18AUG71	15OCT71	8DEC71	819020	31JAN72	22MAR72	577044	577045
CHANGE NO.	818664	818815	819016	818387	10JAN72	818388	818392	22APR72	01JUN72
	577054	577066							
	7SEP72	10JAN73							

- () 7.4 STRAP CABLE/CABLES IN RACEWAY WITH STRAPS. REFER TO FIGURE 19.
- () 7.5 HOOK CABLE STRAIN RELIEF BRACKETS IN PIN, PN 2590864. REFER TO FIGURE 19.
- () 7.6 TERMINATE THE GROUND LEAD(S) OF CABLE PN'S 2590800 AND 2590802 TO SYSTEM GROUND. REFER TO FIGURE 20.
- () 7.7 PLUG DATA SET CABLE AND THE AUTO CALL UNIT CABLE INTO THE DATA SET AND AUTO CALL UNIT (WHEN AUTO CALL IS INSTALLED). APPLY POWER TO THE DATA SET AND AUTO CALL UNIT (WHEN AUTO CALL IS INSTALLED). FOR LOCAL ATTACHMENTS, PLUG IN ATTACHING BSCA.
- () 7.8 IF REMOTE JOB ENTRY PROGRAMS WILL BE USED ON BSCA-1, DISABLE THE 20 SECOND TIME OUT BY JUMPERING B-A2G2D13 TO B-A2T2J03 WITH BLACK WIRE PN 811695. CONSULT WITH CUSTOMER AND/OR SYSTEM ENGINEER.
- () 7.9 IF REMOTE JOB ENTRY PROGRAMS WILL BE USED ON BSCA-2, DISABLE THE 20 SECOND TIME OUT BY JUMPERING B-A3G2D13 TO B-A3T2J03 WITH BLACK WIRE PN 811695. CONSULT WITH CUSTOMER AND/OR SYSTEM ENGINEER.

FIGURE 20



577066
10JAN73

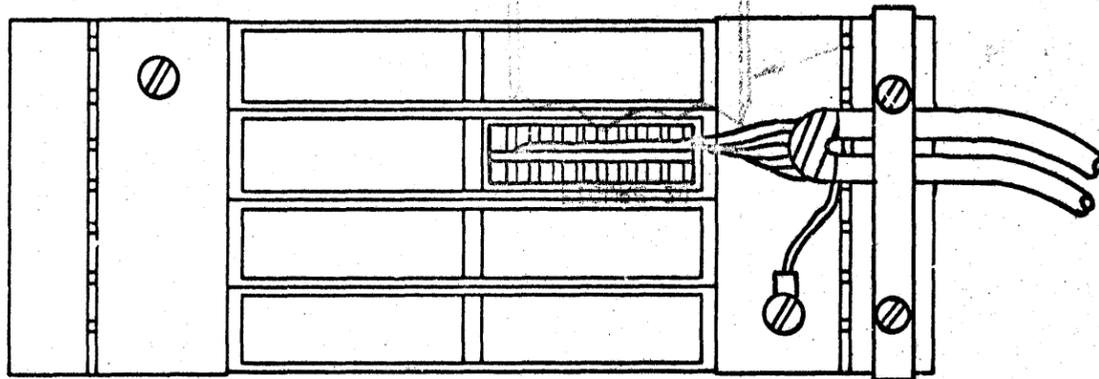
ENG. DATE	8JUL71	18AUG71	15OCT71	8DEC71	819020	31JAN72	22MAR72	577044	577045	577054
CHANGE NO.	818664	818815	819016	818387	10JAN72	818398	818392	22APR72	01JUN72	7SEP72

CHAPTER 7A
MLTA INSTALLATION

IF YOUR SYSTEM DOES NOT HAVE MLTA, SKIP THIS CHAPTER.

- () 7A.1 CHECK THAT ALL PARTS WERE RECEIVED IN THE SHIPPING GROUP. NOTE: TWO IDENTICAL MICROCODE DECKS LABELED "DATA DECK FOR MLTA MICRO LOADER" WERE RECEIVED. RETAIN ONE AND GIVE THE OTHER TO THE CUSTOMER.
- () 7A.2 INSTALL THE EXTERNAL CABLES USING CABLE CONNECTOR CHART, LOGIC PAGE Z\315. MAKE SURE CABLE GROUND WIRES ARE CONNECTED TO GROUNDING SCREW AND CABLES ARE INSTALLED UNDER CABLE CLAMP AS SHOWN IN FIG. 22.1.
- () 7A.3 IF IBM LINE ADAPTERS (LD 2'S) ARE INSTALLED, CHECK JUMPERS ON CARDS 0B-B3A2, A4, B2, B4, E2, E4, F2, F4, Q2, Q4, R2, R4, U2, U4, V2 AND V4, USING CHART ON ZA317 AS A REFERENCE.
- () 7A.4 GO TO CHAPTER 7B & CONTINUE INSTALLATION. RETURN TO 7A.5 WHEN TOLD TO DO SO IN CHAPTER 10, OR CHAPTER 10A.
- () 7A.5 LOAD DCP WITH CORRECT UDT AND RUN THE CONFIGURATOR PROGRAM FE7 WHICH WILL GENERATE DIAGNOSTIC PROGRAM SECTION 201. SEE USERS GUIDE FOR DETAILS.
- () 7A.6 GO TO THE ENTRY SECTION OF THE MAPS TO COMPLETE THE RUNNING OF THE DIAGNOSTICS. NOTE: SECTION 207 (LINE TEST) WILL REQUIRE COMMUNICATION LINKAGE TO A LOCAL TERMINAL.
- () 7A.7 IF A FAILURE IS DETECTED, UTILIZE THE MAPS TO ISOLATE THE FAILURE; OTHERWISE, CONTINUE.
- () 7A.8 FILL OUT THE LINE SPECIFICATION CHART, LOGIC PAGE ZA316.
- () 7A.9 CONFIGURE THE CUSTOMERS DECK FOR CUSTOMER RUN OPERATIONAL TEST (SEE MAP PAGE 7).
- () 7A.10 REMIND THE CUSTOMER THAT THE MICROCODE MUST BE LOADED BY HIM ONTO HIS DISK PACK AND THE PROCEDURE IS IN THE SRL MANUAL.

FIGURE 22.1



GROUND SCREWS

577066
10JAN73
DATE 15OCT71 8DEC71 819020 31JAN72 22MAR72 577044 577045 577054
EC 819016 818387 10JAN72 818388 818392 22APR72 01JUN72 7SEP72

CHAPTER 7B

1442 FEATURE INSTALLATION

SKIP THIS CHAPTER IF YOU DO NOT HAVE 1442 FEATURE.

INSTALL 1442 I/O CABLES:

- () 7A.1 REFER TO APPENDIX III OF THIS INSTALLATION INSTRUCTION TO LOCATE PLUGGING LOCATIONS FOR THESE CABLES.

NOTE: THE BOND FROM THE LARGE CABLE MUST BE SECURED UNDER THUMB SCREW LOCATED IN UPPER LEFT SCREW POSITION OF MTG. PLATE. (ESD PROBLEMS WILL BE ENCOUNTERED IF THIS GROUND IS LEFT FLOATING).

- () 7A.2 CONNECT CABLE RETENTION PIN LOCATED IN BOTTOM OF I/O CABLE CLOSET.

577066
10JAN73

EC
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818664
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819020
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818388
31JAN72

818392
22MAR72

577044
22APR72

577045
01JUN72

577054
7SEP72

CHAPTER 7C

3411 MAGNETIC TAPE FEATURE INSTALLATION

NOTE: IF YOUR SYSTEM DOES NOT HAVE 3411 FEATURE, SKIP THIS CHAPTER.

7C.1 REFER TO AND PERFORM UNPACKING AND INSTALLATION INSTRUCTIONS FOR THE 3410-3411. THE INSTALLATION INSTRUCTIONS ARE LOCATED IN THE 3410-3411 MAINTENANCE LIBRARY (MLM) MANUALS. UNDER INSTALLATION PROCEDURES. RETURN HERE WHEN DIRECTED.

7C.2 REFER TO FIGURES 22.2-A, 22.2-B, AND 22.2-C FOR ROUTING OF I/O CABLES TO THE SYSTEM TAILGATE. DETERMINE WHICH VIEW IS CORRECT FOR YOUR SYSTEM.

7C.2.1 IF YOUR SYSTEM HAS A 5421 PRINTER CONTROL UNIT OR 5203 PRINTER WITH EC 360115 REMOVE THE COVER FROM THE ACCESS HOLE.

IF YOUR SYSTEM HAS A 5203 PRINTER WITHOUT EC 360115 - CUT NOTCHES AND FORM METAL TO PROVIDE AN OPENING FOR CABLE ENTRY.

7C.2.2 REMOVE Z-BRACKET WHICH TIES CPU FRAME TO PRINTER OR PRINTER CONTROL FRAME. RETAIN SCREWS.

7C.2.3 ROUTE CABLES ACCORDING TO THE VIEW WHICH IS APPLICABLE FOR YOUR SYSTEM. CONNECT CABLES ACCORDING TO FIGURE 22.3.

NOTE: SHIELDS OF I/O SIGNAL CABLES CONNECT TO TERMINALS ON THE TAILGATE TO THE LEFT OF THE EPO CABLE CONNECTOR.

7C.2.4 INSTALL Z-BRACKET (PN 2545658) AS SHOWN IN FIGURE 22.2 (A, B, OR C) WITH SCREWS RETAINED IN STEP 7C.2.2.

7C.2.5 IF YOUR SYSTEM HAS A 5203 WITHOUT EC 360115 SECURE I/O SIGNAL CABLES WITH (2) CLAMPS (PN 646385) USING (2) SCREWS (PN 438601) AND (2) SPACERS (PN 104869). REF FIGURE 22.2-B.

7C.3 SPOT TAPE THE EPO CABLE (PN 2517841) TO ONE OF THE LARGER I/O CABLES (PN 2281630) IN ORDER TO PROVIDE STRAIN RELIEF. FRICTION TAPE (PN 450695) IS PROVIDED.

7C.4 SPOT TAPE THE (2) I/O CABLES (PN 2281630) IN THE AREA ADJACENT TO THE Z-BRACKET (PN2545658) IN ORDER TO PROVIDE STRAIN RELIEF. FRICTION TAPE (PN450695) IS PROVIDED.

7C.5 INSERT 8 1/2 X 11 3411 USERS GUIDE INTO 3411 MAINTENANCE LIBRARY MANUAL (MLM) VOLUME.

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DATE	22MAR72	22APR72	01JUN72	7SEP72	10JAN73

FIGURE 22.2-A

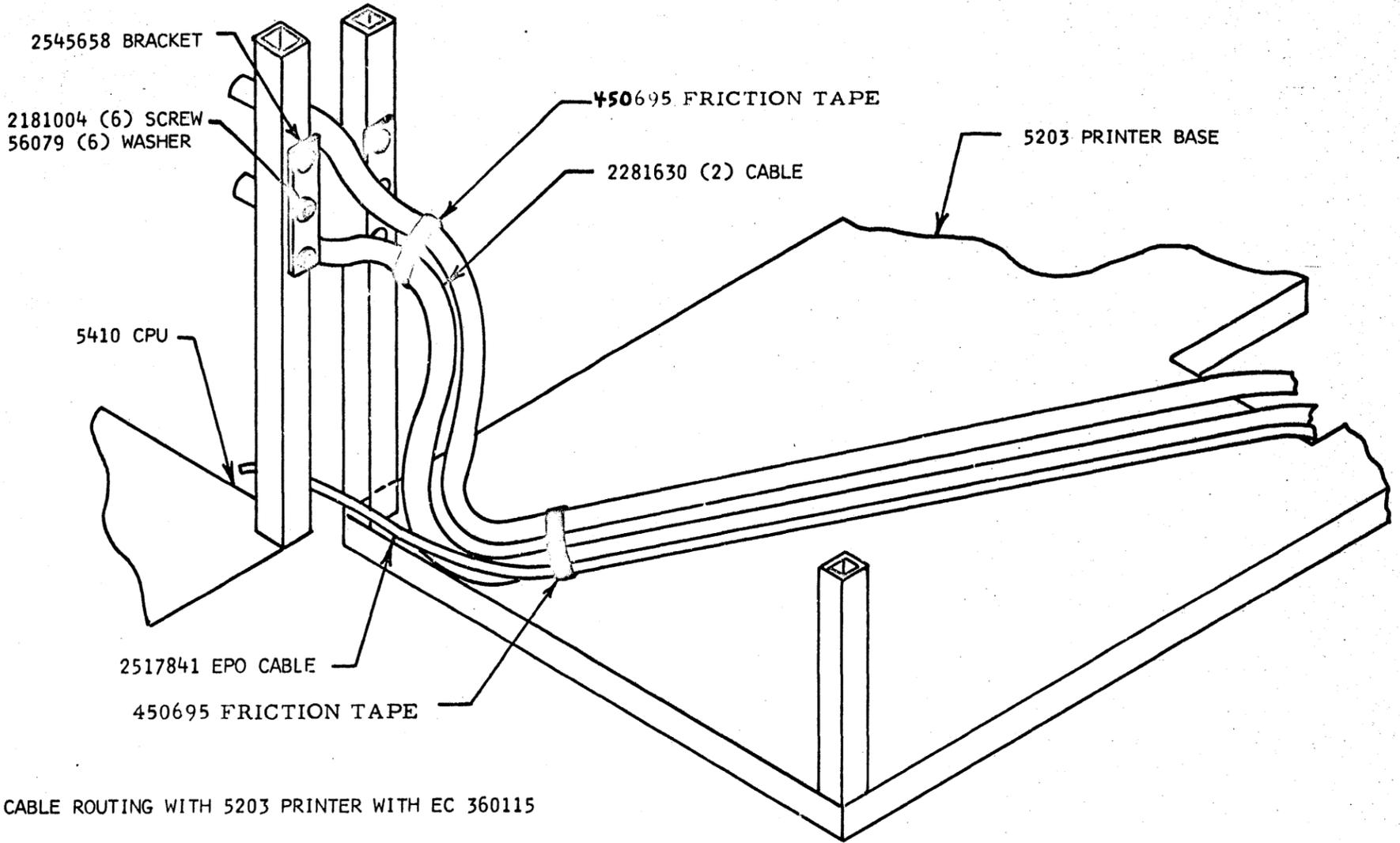
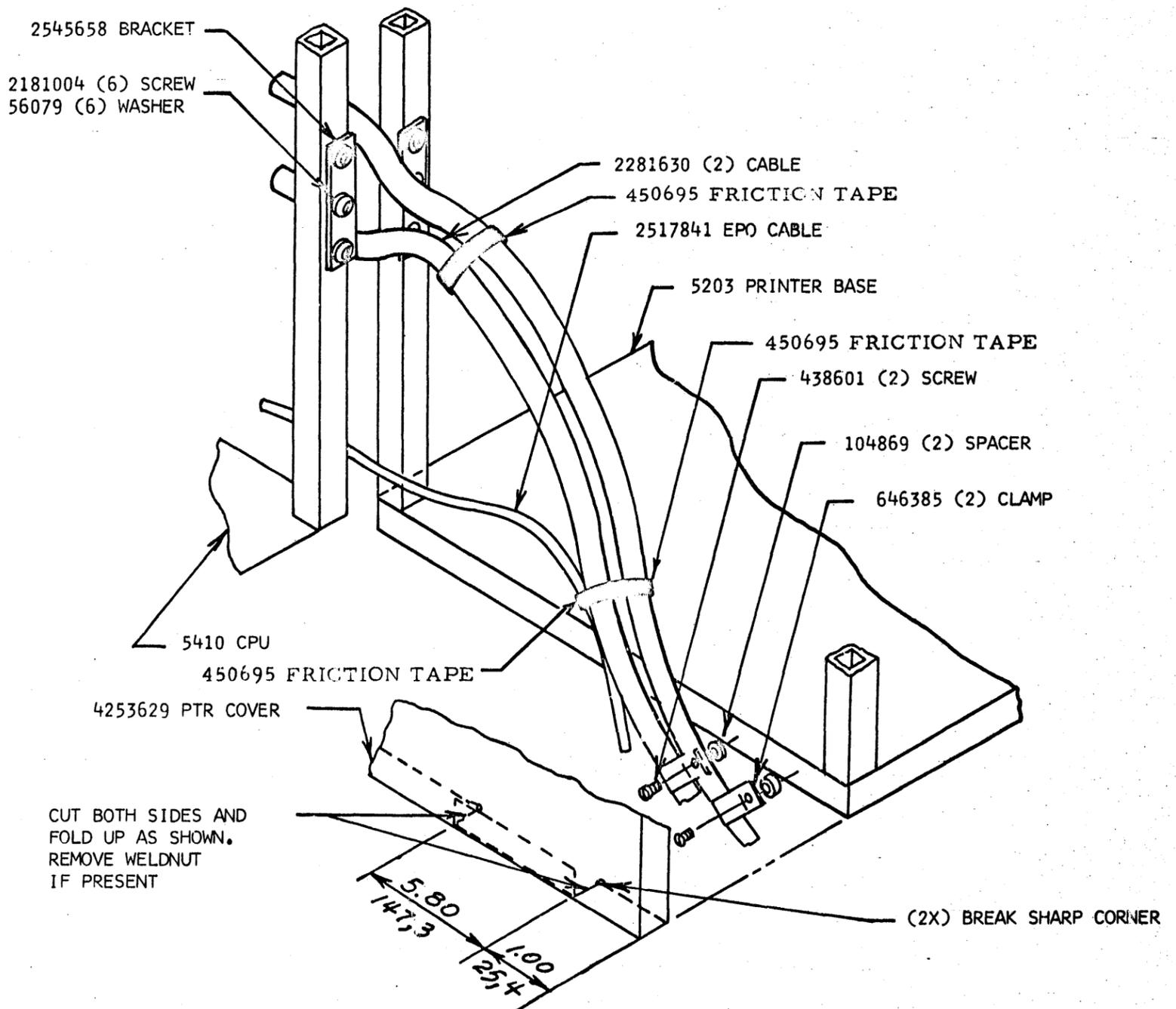
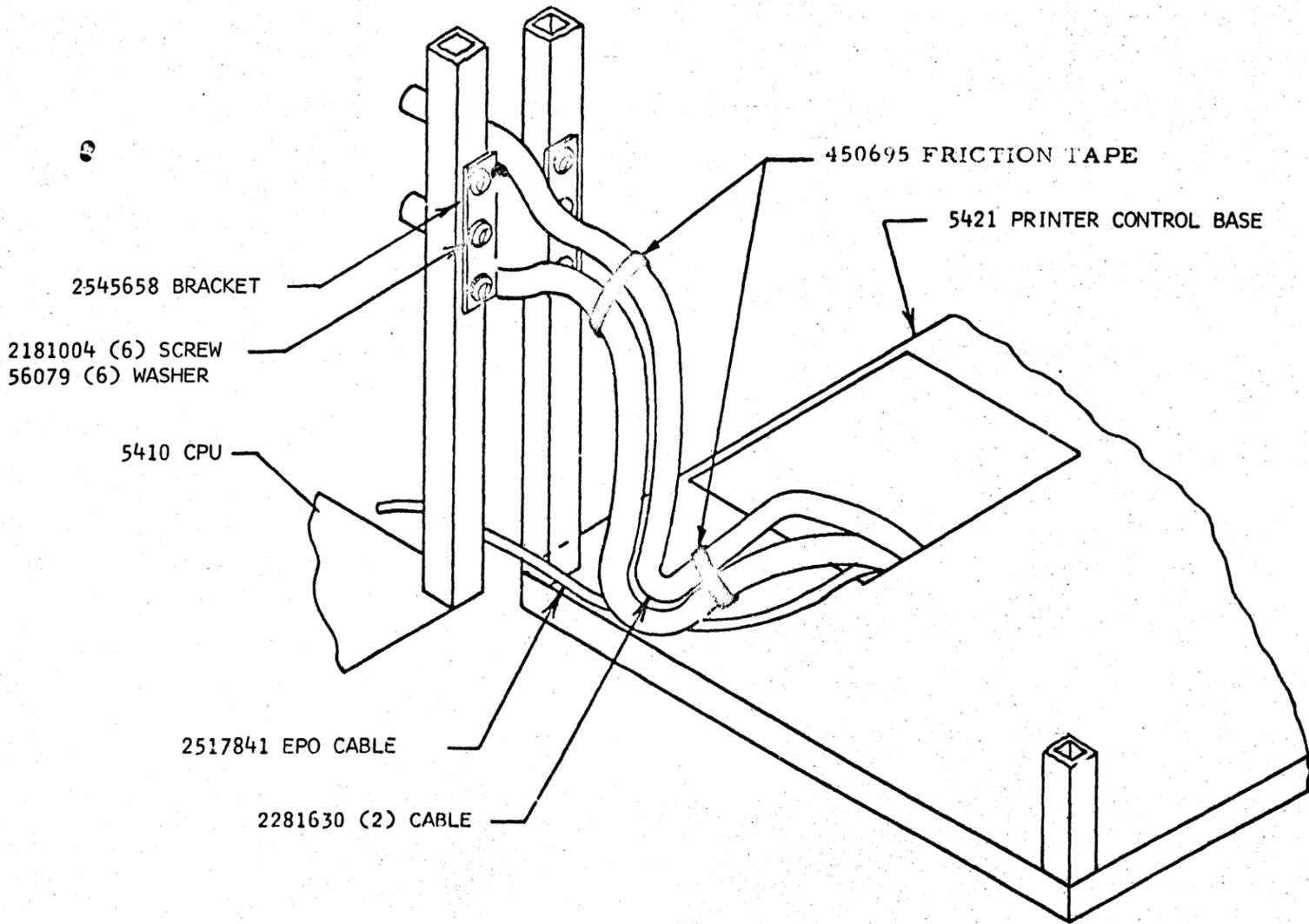


FIGURE 22.2-B



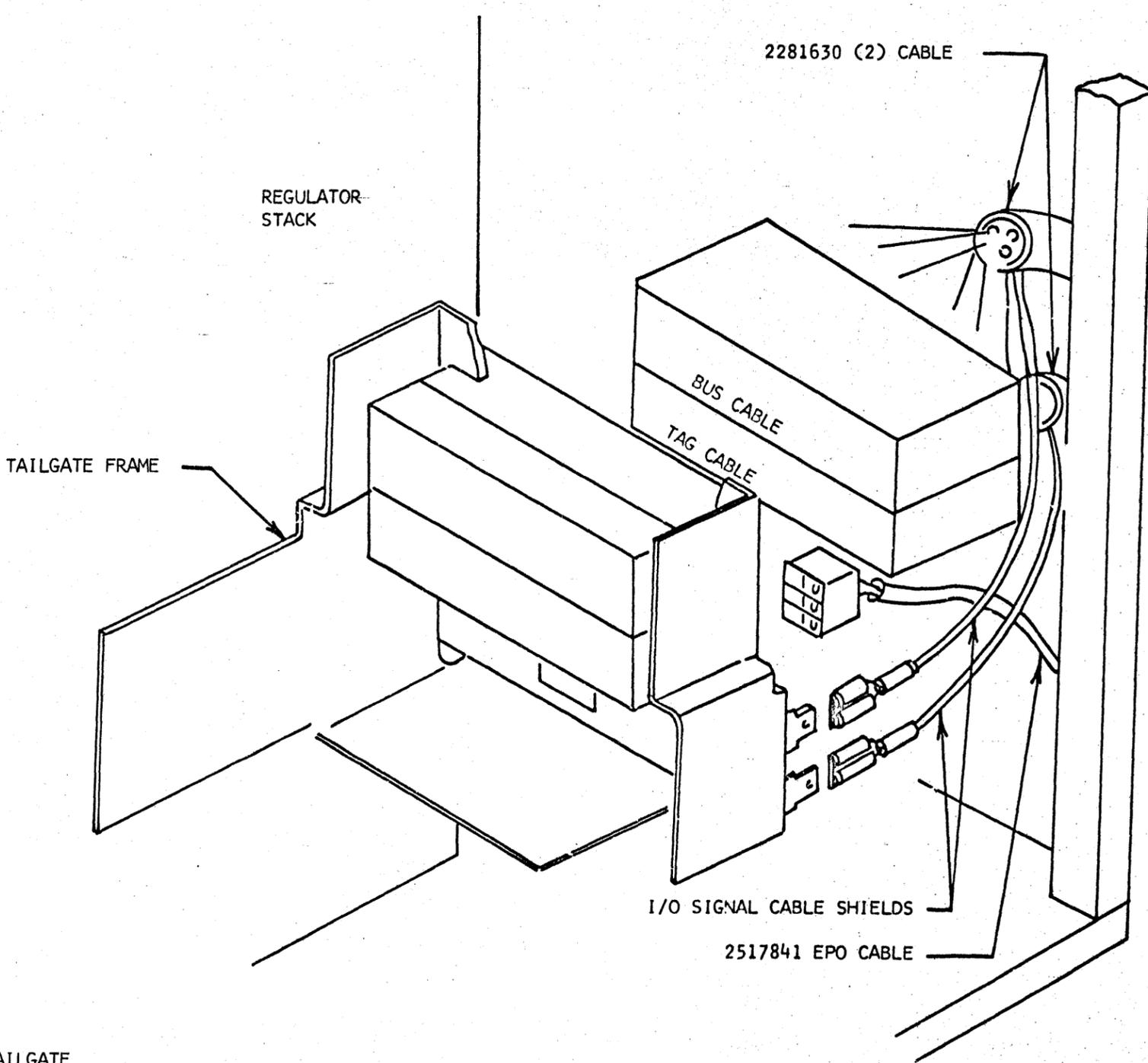
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EC	818392	22APR72	01JUN72	7SEP72	10JAN73						

FIGURE 22.2-C



CABLE ROUTINE WITH 5421 PRINTER CONTROL UNIT

FIGURE 22.3



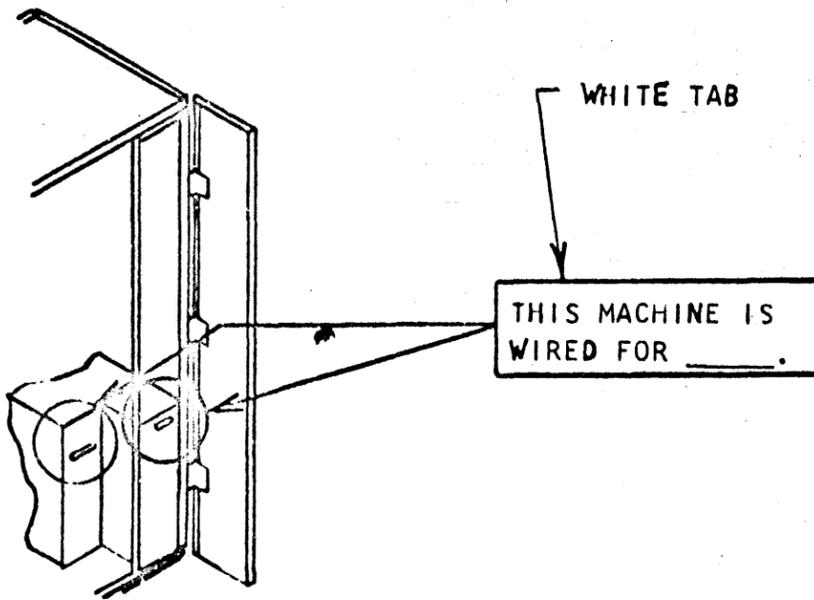
TAILGATE

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EC	818392	22APR72	01JUN72	7SEP72	10JAN73				

CHAPTER 8
PRE-POWER CHECKS

- (4) 8.1 CHECK THAT ALL CARDS AND FLAT CABLES ARE PLUGGED AND SEATED PROPERLY.
- (C) 8.2 ASSURE THAT THE CUSTOMER'S VOLTAGE MATCHES THE VOLTAGE SPECIFIED ON THE MACHINE VOLTAGE TAG.
 - (C) 8.2.1 THIS TAG IS LOCATED IN THE LOWER RIGHT HAND SIDE OF THE CPU INSIDE THE SMALL COVER AS SHOWN IN FIGURE 23, ALSO OPTIONAL LOCATION (SEE NOTE 1).
 - 8.2.2 IF THE LINE VOLTAGE AND TAG DO NOT AGREE, REFER TO LOGIC PAGE YA100 TO MAKE THE NECESSARY CHANGES. THESE PAGES ARE IN 5410 ALD VOLUME 3.
- NOTE: IF CHANGES ARE MADE, D.P. ORDERS AND MOVEMENTS MUST SUBMIT A RECORDS PURPOSE ONLY MES FOR EACH MACHINE ON THE SYSTEM TO UPDATE MLC RECORDS. IT IS ESSENTIAL THAT YOU INFORM ORDERS AND MOVEMENTS OF THIS CHANGE. EXCESSIVE INSTALL TIME MAY OCCUR ON SALES FEATURES AND EC'S IF MLC RECORDS ARE INCORRECT.
- (4) 8.3 INSPECT BOARD WIRING FOR BENT PINS AND CONSOLE FOR DAMAGED AND/OR LOOSE CABLES.
 - NOTE: IF THE I/O SENSE CABLE FROM THE 5203 PRINTER OR THE 5421 CONTROL UNIT IS NOT PLUGGED IN, GO TO THE "B" GATE SIDE OF THE CPU AND CONNECT THIS CABLE TO J1.
- (4) 8.4 AFTER ALL CABLES ARE ROUTED, RECONNECT THE GROUND STRAPS AND MEASURE THE RESISTANCE FROM GROUND STRAP TO THE CHASSIS OF THE ATTACHED I/O'S ON THE R X I SCALE, THE RESISTANCE MUST NEVER EXCEED 1.0 OHM.
- (4) 8.5 CHECK FOR LOOSE OR MISSING GROUND STRAPS.
- (4) 8.6 BE SURE THAT ALL SAFETY SHIELDS ARE INSTALLED THAT HAVE BEEN REMOVED DURING THIS INSTALLATION.
- (C) 8.7 REMOVE PAPER ABOVE MEMORY ARRAY ON INSIDE OF A-GATE IF NOT REMOVED PREVIOUSLY.

FIGURE 23



NOTES:

1: TO VIEW THIS LABEL LOCATION OPEN "A" GATE.

577066
10JAN73

ENG. CHANGE NO.	DATE	3JUL71	1AUG71	15OCT71	818387	819020	31JAN72	22MAR72	22APR72	01JUN72	577054
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CHAPTER 9
POWER ON CHECKS

- (4) 9.1 MAKE SURE THE CPU MAIN POWER BREAKER IS OFF.
CAUTION: PRE-POWER CHECKING IN THE I/O BOXES SHOULD BE COMPLETE AT THIS TIME.
- (4) 9.2 CONNECT THE MAIN POWER CABLE TO THE CUSTOMER'S OUTLET. IF A 5421 IS BEING INSTALLED, ALSO CONNECT IT'S MAIN POWER CORD TO CUSTOMER'S OUTLET.
- () 9.3 TURN THE CPU MAIN POWER CABLE CIRCUIT BREAKER ON, AND INSURE THAT ALL SECONDARY POWER CIRCUIT BREAKERS ARE ON AND REMAIN ON (NO POWER CHECK). IF 5421 IS BEING INSTALLED, OPEN THE RIGHT END COVER AND VERIFY THAT THE AC FAULT LIGHT IS ON.
- (4) 9.3.1 5421 ONLY: TURN 5421 MAIN POWER CB ON AND INSURE THAT ITS AC POWER FAULT LIGHT GOES OUT. IF LIGHT REMAINS ON, IMPROPER PHASE WIRING EXISTS AT THE CUSTOMER'S OUTLET. HAVE POWER COMPANY CORRECT WIRING.
- (5) 9.4 PULL THE EPO SWITCH.
- (\) 9.5 PLACE THE "POWER ON" SWITCH TO THE ON POSITION.
- (\) 9.6 VERIFY THAT POWER DOES NOT COME UP. TURN OFF POWER SWITCH -- RESET EPO -- POWER UP.
- () 9.6.1 OBSERVE THE ENTIRE SYSTEM FOR SIGNS OF OVERHEATING OR SMOKE. POWER DOWN IMMEDIATELY IF ANY ABNORMAL CONDITIONS ARE NOTED.
- () 9.7 FOR 5421 INSTALLATION: GO TO THE 1403 INST. INSTR. RETURN TO THIS POINT WHEN DIRECTED
- () 9.8 VERIFY SYSTEM LAMPS WITH LAMP TEST.
- () 9.9 CHECK THE FOLLOWING LOGIC VOLTAGES AT THE LOCATIONS GIVEN:
NOTE: USE A WESTON 901 DC METER PN 460879 OR DIGITEC PM 453046 AND ADJUST IF NECESSARY.
REFER TO APPENDIX II FOR LOCATION OF ADJUSTMENTS AND POWER SUPPLIES.
- () 9.10 WHEN FEATURES AND FEATURE PREREQUISITES ARE PART OF -4V LOAD, REFER TO APPENDIX II SECTION 4 TO DO OVERCURRENT ADJUSTMENTS.

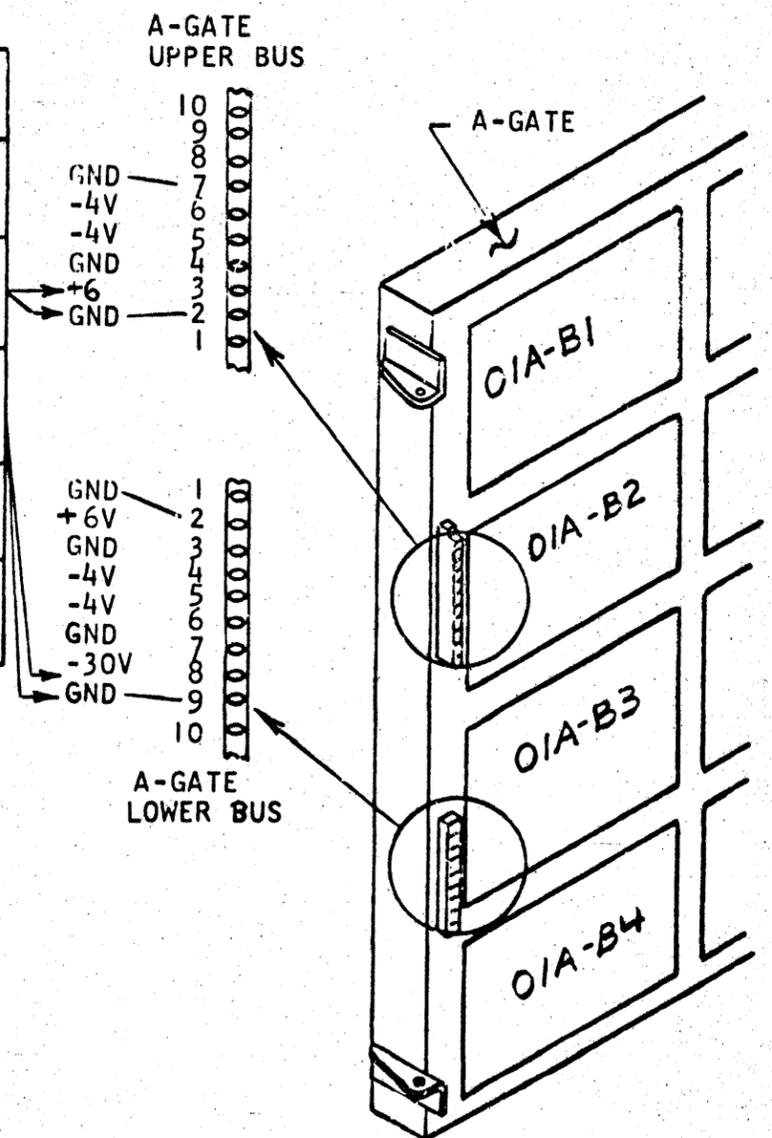
FIGURE 24

SUPPLY	NOMINAL VOLTAGE	TOLERANCE *	LOCATION
-4V BASIC P/S	-4.00	-4.15 TO -3.85	-4V AT O1A-A3D2B06 TO GND AT O1A-A3D2D08
+6V	+6.00	+5.8 TO +6.2	+6V POSITION 3 TO GND POSITION 2 ON A-GATE UPPER LAMINAR BUS
-30V	-30.00	SEE DECAL ON PIN SIDE OF MST BOARD O1A-B4	-30V POSITION 8 TO GND POSITION 9 ON A-GATE LOWER LAMINAR BUS
+3V**	+3.0	+2.97 TO +3.03	+3 AT O1A-B4C4J03 TO +6 AT O1A-B4C4B11 ***
-14V**	-14.00	-14.05 TO -13.95	-14 AT O1A-B4C4J11 TO GND AT O1A-B4C4D08 ***

* THE TOLERANCE VOLTAGE VALUES GIVEN SHOULD NOT BE USED TO TO ADJUST THE POWER SUPPLY. THESE VALUES REFLECT THE ACCEPTABLE VOLTAGE AT A PARTICULAR LOCATION ON THE SYSTEM.

** THE 3V AND -14V ARE ADJUSTED BY THE POINTS ON REGULATOR CARD AT LOCATION O1A-B4C4. (+3 IS THE UPPER POT, -14 IS THE LOWER POT).

*** USE B4C4 CARD LOCATION FOR UNITS WITH 8, 12 & 16K BSM'S
USE B4A4 CARD LOCATION FOR UNITS WITH 24 & 32K BSM'S



577066
10JAN73

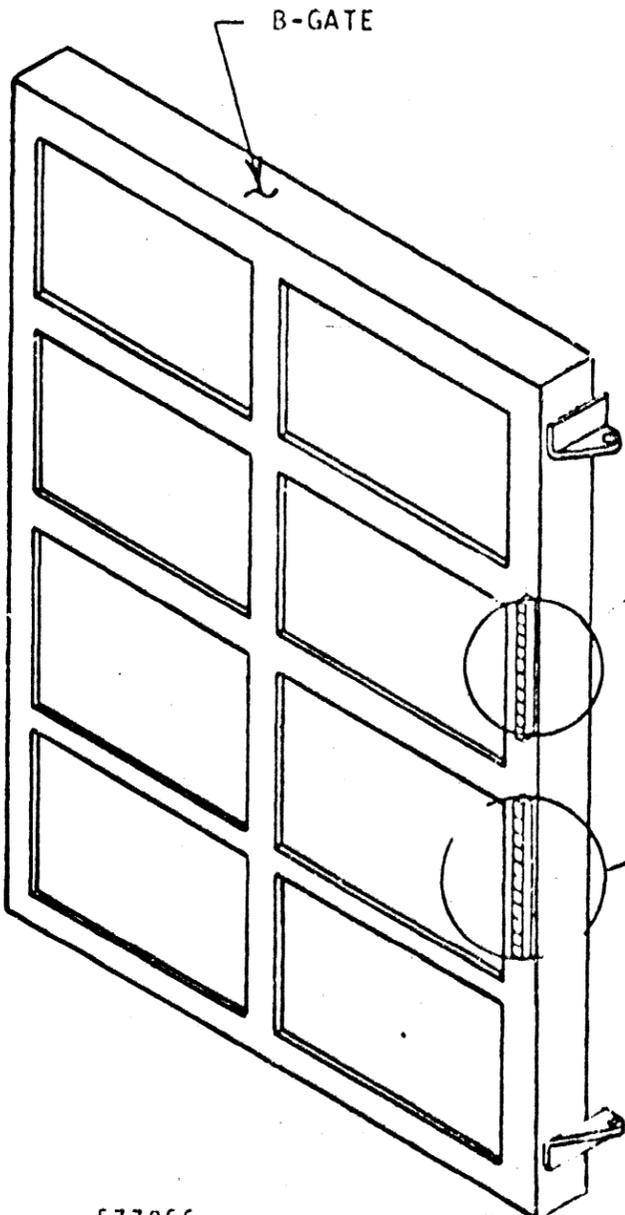
ENG. CHANGE NO.	DATE	3JUL71 613664	18AUG71 613315	15OCT71 819016	818387 8DEC71	819020 10JAN72	31JAN72 818388	22MAR72 818392	22APR72 577044	01JUN72 577045	577054 7SEP72
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- () 9.11 CHECK THE FEATURE VOLTAGES AT THE LOCATIONS GIVEN IN FIGURE 25 IF THE SUPPLY IS ON YOUR SYSTEM.
NOTE: THE -12V (BSCA) P/S CAN BE MEASURED ONLY -- THERE IS NO ADJUSTMENT.
THE ±12V (MLTA & BSCA) P/S CAN BE MEASURED ONLY -- THERE IS NO ADJUSTMENT.
- () 9.12 GO TO 5422/5424 INSTALLATION INSTRUCTIONS FOR 5422/5424 POWER ON CHECK. RETURN TO THESE INSTRUCTIONS (THIS POINT) WHEN DIRECTED.
- () 9.13 GO TO 5203 PRINTER OR 5421 INSTALLATION INSTRUCTIONS FOR THEIR POWER ON CHECKS. RETURN TO THESE INSTRUCTIONS (THIS POINT) WHEN DIRECTED.
- () 9.14 IF YOUR SYSTEM HAS DISK FILE FEATURE, GO TO THE 5444 DISK FILE INSTALLATION INSTRUCTIONS AND PERFORM THE POWER CHECKS, START STOP SEQUENCE, AND HEAD AND TRANSDUCER ALIGNMENT, THEN RETURN TO THIS POINT.
- () 9.15 GO TO 1442 INST. INSTR. FOR POWER ON CHECKS AND RETURN TO THIS POINT.
- () 9.16 IF YOUR SYSTEM HAS A 5445 DISK FILE FEATURE, GO TO THE 5445 DISK FILE PACK/UNPACK INSTRUCTIONS AND INSTALLATION INSTRUCTIONS AND PERFORM ALL STEPS. RETURN TO THESE INSTRUCTIONS (THIS POINT) WHEN DIRECTED (SEE APPENDIX 111 IN THIS MANUAL FOR I/O CABLE CONNECTIONS).
- () 9.17 IF YOUR SYSTEM HAS A 3411/3410 TAPE FEATURE, GO TO 3411/3410 INSTALLATION PROCEDURES LOCATED IN IMM FOR POWER ON CHECKS AND RETURN TO THIS POINT.

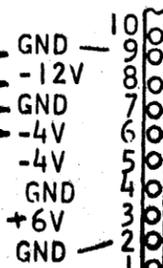
SUPPLY	NOMINAL VOLTAGE	TOLERANCE	LOCATION
-12V* RECT/FILT	-12.0	-10.2 TO -13.8	-12V POSITION 8 TO GND POSITION 9 ON B-GATE UPPER LAMINAR BUS
±12V*** RECT/FILT	+12.0 -12.0	+10.2 TO +13.8 -10.2 TO -13.8	+12V POSITION 10 TO GND POSITION 9 -12V POSITION 8 TO GND POSITION 9 B-GATE LOWER LAMINAR BUS
-4V LOGIC P/S #2	-4.05	NO TOLERANCE SEE APPENDIX II IF ADJUSTMENT IS NECESSARY	-4V POSITION 6 TO GND POSITION 7 ON B-GATE UPPER LAMINAR BUS

* THIS SUPPLY WILL BE IN YOUR SYSTEM ONLY IF BSCA MEDIUM SPEED FEATURE IS INSTALLED.

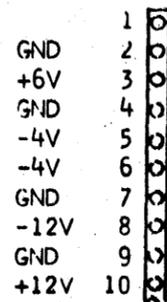
***THIS SUPPLY WILL BE IN YOUR SYSTEM ONLY IF MLTA IS INSTALLED



B-GATE
UPPER LAMINAR BUS



B-GATE
LOWER LAMINAR BUS



577066
10JAN73

FIG. 25

ENG. CHANGE NO.	DATE	3JUL71 813364	18AUG71 813815	15OCT71 819616	818387 8DEC71	819020 10JAN72	31JAN72 818388	22MAR72 818392	22APR72 577044	01JUN72 577045	577054 7SEP72
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CHAPTER 10
SYSTEM TESTING

NOTE: IF YOUR SYSTEM HAS A 5422 USE CHAPTER 10A.

- (10.1) PLACE BLANK CARDS IN MFCU PRIMARY HOPPER, DEPRESS IPL (EXPECT A PROCESSOR CHECK) A NUMBER OF TIMES (6-8). EXAMINE THE BLANK CARDS IN THE STACKER FOR DAMAGE. IF THERE IS VISIBLE DAMAGE, CORRECT THE PROBLEM BEFORE PROCEEDING.
- () 10.2 REMOVE THE PROGRAM CARDS FOR UNINSTALLED FEATURES FROM THE CPU AND MEMORY TEST DECK. REFER TO CPU AND MEMORY USER'S GUIDE (MDM VOL 1).
- () 10.3 RUN CPU AND MEMORY TESTS (IF RUN PROCEDURES ARE NEEDED, REFER TO ENTRY 2 OF THE CPU SYSTEM STRATEGY CHART -- MDM VOL 2).
- () 10.4 CONFIGURE THE DCP TEST DECK. REFER TO THE DCP USER'S GUIDE (MDM VOL 1).
- () 10.5 GO TO 5424 MFCU INSTALLATION INSTRUCTIONS FOR MFCU TEST PROCEDURES. RETURN TO THESE INSTRUCTIONS (THIS POINT) WHEN DIRECTED.
- () 10.5A IF YOUR SYSTEM HAS 3411/3410 FEATURE, GO TO 3411/3410 INSTALLATION PROCEDURES CONFIGURATION SECTION FOR TAPE TEST PROCEDURES. RETURN TO THIS POINT WHEN DIRECTED.
- () 10.6 IF YOUR SYSTEM HAS ANY RPQ OR SPECIAL FEATURES, REFER TO THOSE INSTRUCTIONS FOR UNPACKING AND INSTALLATION INSTRUCTIONS. (SEE APPENDIX III FOR RESPECTIVE I/O CONNECTOR LOCATIONS) THEN RETURN TO THIS POINT.
- () 10.7 RUN ALL OTHER DEVICE FUNCTION TESTS.
NOTE: IF YOUR SYSTEM HAS A 1403, GO TO THE 5421 AND MAKE THE FINAL ADJUSTMENT TO THE -6V SUPPLY WHILE RUNNING THE 1403 FUNCTION TESTS.
NOTE: IF YOUR SYSTEM HAS BSCA, CONFIGURE AND TEST THE OPERATIONAL TEST DECKS (REFER TO PAGES 38, 39 OF BSCA MAPS, MDM VOL 10).
TEST THE 809 & 80A SECTIONS OF THE OPERATIONAL DECKS WITH ANOTHER SYSTEM ON YOUR COMMUNICATION NETWORK OR WITH THE RALEIGH TEST CENTER.
NOTE: IF YOUR SYSTEM HAS A 5444 DISK DRIVE, INITIALIZE THE FIXED DISK, THEN INITIALIZE THE REMOVABLE DISK WITH PROGRAM FF5 (SEE USERS GUIDE, MDM VOL 1 BLOCK 20). IF PROBLEMS ARE ENCOUNTERED BEFORE INITIALIZATION IS COMPLETED, DIAGNOSTIC PROGRAM AOI SHOULD BE RUN TO TEST THE DISK ATTACHMENT. IF AOI DOES NOT LOCATE THE PROBLEM, THEN AN INITIALIZED REMOVABLE DISK PACK MUST BE OBTAINED AND RUN WITH DIAGNOSTICS (SET SSW 16 AT BEGINNING OF EACH SECTION).
AFTER INITIALIZATION IS COMPLETE, RUN ALL 5444 DISK DIAGNOSTICS (SEE USERS GUIDE IN MDM VOL 1 BLOCK 13). THEN RETURN TO THIS POINT.
NOTE: IF YOUR SYSTEM HAS MLTA GO TO 7A.5, RUN DIAGNOSTICS THEN RETURN TO THIS POINT.
NOTE: IF YOUR SYSTEM HAS A 5445 DISK FILE FEATURE, PERFORM THE VFO ADJUSTMENT PER 5445 ATTACHMENT TMD, MDM VOL 15 APPENDIX A. INITIALIZE THE CE PACK AND/OR CUSTOMER SCRATCH PACK USING DIAGNOSTIC PROGRAM FF9 (SEE USERS GUIDE MDM VOL 1, BLOCK 24). IF PROBLEMS ARE ENCOUNTERED BEFORE INITIALIZATION IS COMPLETED, DIAGNOSTIC PROGRAMS C01 AND C02 SHOULD BE RUN TO TEST THE DISK ATTACHMENT. IF C01 AND C02 DO NOT LOCATE THE PROBLEM, THEN AN INITIALIZED PACK MUST BE OBTAINED AND RUN WITH DIAGNOSTICS. AFTER INITIALIZATION IS COMPLETE, RUN ALL 5445 DIAGNOSTICS (SEE USERS GUIDE MDM VOL 1, BLOCK 24). THEN RETURN TO THIS POINT.
- () 10.8 TAKE THE DECKS CONFIGURED IN STEP 10. (FOR BSCA SYSTEMS), GIVE IT TO THE CUSTOMER AND INSTRUCT HIM OF ITS USE.
- () 10.9 RUN ALL REMAINING DEVICE TAPS (IN TABULAR FORMAT. SAVE THE OUTPUT FOR FUTURE REFERENCE.
- () 10.10 CONFIGURE THE SYSTEM TEST DECK. USE THE "TABLE OF SYSTEM TEST MODULES" SHOWN IN THE SYSTEM TEST USER'S GUIDE (MDM VOL 1) TO FORMULATE THE DECK.
NOTE: THE SYSTEM TEST MODULES FOR THE FEATURES WILL BE FOUND IN THE RESPECTIVE SHIPPING GROUPS.
- () 10.11 RUN DCP AND SYSTEMS TEST.
- () 10.12 RUN DCP AND USAGE METER DIAGNOSTIC TO TEST 5410 CPU, 5424 MFCU, 5203 OR 1403 PRINTER, 1442 CARD READER/PUNCH, AND 5444 DISK FILE USAGE METERS.

577066
10JAN73

ENG. CHANGE NO.	DATE	8JUL71	18AUG71	15OCT71	818387	819020	31JAN72	22MAR72	22APR72	01JUN72	577054
		818664	818815	819016	8DEC71	10JAN72	818388	818392	577044	577045	7SEP72

CHAPTER 10A

SYSTEM TESTING (SYSTEM WITH 5422)

NOTE: INSURE THAT 5444 IS ON LINE AND READY.

- 10A.1 RUN CPU AND MEMORY TESTS (REFER TO ENTRY 2 OF THE CPU SYSTEM STRATEGY - MDM VOL 2)
- 10A.2 LOAD DCP. NOTE: PROGRAM FE6 (LSR FEATURE TEST) RUNS EVERY TIME DCP IS LOADED.
(REFER TO BLOCK 10 OF DIAGNOSTIC USERS GUIDE).
- 10A.3 RUN THE 5444 DISK DRIVE DIAGNOSTICS PER SECTION (J) OF UNIT INSTALLATION INSTRUCTIONS
P/N 2598260.
- 10A.4 IF YOUR SYSTEM HAS ANY RPQ OR SPECIAL FEATURES, REFER TO THESE INSTRUCTIONS FOR
UNPACKING AND INSTALLATION INSTRUCTIONS, THEN RETURN TO THIS POINT.
- 10A.5 IF YOU ARE REQUIRED TO CONFIGURE YOUR DIAGNOSTIC PACK TO MATCH THE SYSTEM
CONFIGURATION, USE THE PROGRAM FF6 ON THE DISK AND REFER TO BLOCK 20 OF THE USERS
GUIDE FOR DESCRIPTION OF THE PROGRAM.
- 10A.5A IF YOUR SYSTEM HAS 3411/3410 FEATURE, GO TO 3411/3410 INSTALLATION PROCEDURES
CONFIGURATION SECTION FOR THE TAPE TEST PROCEDURES. RETURN TO THIS POINT WHEN DIRECTED.
- 10A.6 RUN ALL DEVICE FUNCTION TESTS.
NOTE: CAUTION DO NOT INITIALIZE CE DIAGNOSTIC PACK.
NOTE: IF YOUR SYSTEM HAS A 1403, GO TO THE 5421 AND MAKE THE FINAL ADJUSTMENT TO
THE -6V SUPPLY WHILE RUNNING THE 1403 FUNCTION TESTS.
- NOTE: IF YOUR SYSTEM HAS A 5444 DISK DRIVE, INITIALIZE THE FIXED DISK, THEN
INITIALIZE THE REMOVABLE DISK WITH PROGRAM FF5 (SEE USERS GUIDE, MDM VOL 1
BN20). IF PROBLEMS ARE ENCOUNTERED BEFORE INITIALIZATION IS COMPLETED,
DIAGNOSTIC PROGRAM A01 SHOULD BE RUN TO TEST THE DISK ATTACHMENT. IF A01
DOES NOT LOCATE THE PROBLEM, THEN AN INITIALIZED REMOVABLE DISK PACK MUST
BE OBTAINED AND RUN WITH DIAGNOSTICS, (SET SSW 16 AT BEGINNING OF EACH SECTION).
AFTER INITIALIZATION IS COMPLETE, RUN ALL 5444 DISK DIAGNOSTICS (SEE USERS
GUIDE IN MDM VOL 1 BN 13). THEN RETURN HERE.
- NOTE: IF YOUR SYSTEM HAS MLTA GO TO 7A.5, RUN DIAGNOSTICS, THEN RETURN TO THIS
POINT.
- NOTE: IF YOUR SYSTEM HAS A 5445 DISK FILE FEATURE, PERFORM THE VFO ADJUSTMENT PER
5445 ATTACHMENT TMD, MDM VOL 15 APPENDIX A. INITIALIZE THE CE PACK AND/OR
CUSTOMER SCRATCH PACK USING DIAGNOSTIC PROGRAM FF9 (SEE USERS GUIDE MDM
VOL 1, BLOCK 24). IF PROBLEMS ARE ENCOUNTERED BEFORE INITIALIZATION IS
COMPLETED, DIAGNOSTIC PROGRAMS C01 AND C02 SHOULD BE RUN TO TEST THE DISK
ATTACHMENT. IF C01 AND C02 DO NOT LOCATE THE PROBLEM, THEN AN INITIALIZED
PACK MUST BE OBTAINED AND RUN WITH DIAGNOSTICS. AFTER INITIALIZATION IS
COMPLETE, RUN ALL 5445 DIAGNOSTICS (SEE USERS GUIDE MDM VOL 1, BLOCK 24).
THEN RETURN TO THIS POINT.
- 10A.7 RUN ALL DEVICE TAPS (IN TABULAR FORMAT). SAVE THE OUTPUT FOR FUTURE REFERENCE.
- 10A.8 RUN SYSTEM TEST ON ALL DEVICES.
- 10A.9 LOAD DCP AND USAGE METER DIAGNOSTIC TO TEST 5410 CPU, 5203 OR 1403 PRINTER, 1442
CARD READER/PUNCH, AND 5444 DISK FILE USAGE METERS.

577066
10JAN73

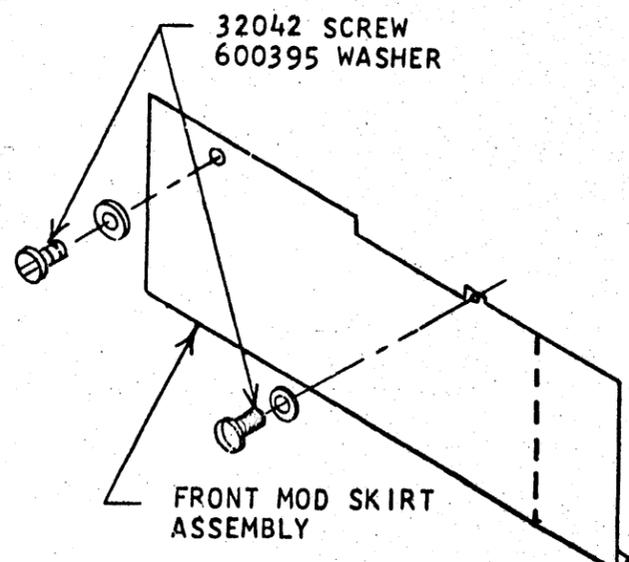
EC	818664	818387	819020	818388	818392	577044	577045	577054
DATE	8JUL71	8DEC71	10JAN72	31JAN72	22MAR72	22APR72	01JUN72	7SEP72

CHAPTER II

COMPLETING THE INSTALLATION

- () 11.1 LAY THE FRONT MODESTY SKIRT ON THE LOWER EDGE (LIP) OF THE BACK MODESTY SKIRT AND CHECK THAT THE FINGER STOCK IS INSTALLED AND MATCHES THE CONTACT PLATE ON REAR MODESTY SKIRT. (WHEN APPLICABLE SWING THE SKIRT UP UNTIL IT SNAPS ON THE SPRINGS MOUNTED BELOW THE TABLE TOP). FASTEN THE FRONT SKIRT TO THE TABLE TOP WITH THE SCREW AND WASHER SHOWN IN FIGURE 27. THE MODESTY SKIRT PROVIDED WITH THE 5422 ATTACHES WITH (2) SCREWS, TO PREVENT ESD PROBLEMS.
- () 11.2 SYSTEM/3 CARD SYSTEM CONTROL PROGRAM INSTRUCTIONS
 - 11.2.1 FOR INSTALLATION PROCEDURES REFER TO THE APPROPRIATE PROGRAMMING SYSTEMS OPERATING GUIDE.
CARD PROGRAMMING SYSTEMS OPERATING GUIDE FORM #GC21-7513.
DISK PROGRAMMING SYSTEM OPERATING GUIDE FORM #GC21-7508.
 - 11.2.2 CODE 71 IR MUST BE COMPLETE ON ALL SYSTEM/3 INSTALLATIONS.
SYS/3 CARD SYSTEM CONTROL PROGRAM FE SERVICE NO. IS 100000.
SYS/3 DISK SYSTEM CONTROL PROGRAM FE SERVICE NO. IS 100001.

FIGURE 27



NOTE: THIS SCREW USED ONLY WITH 5422
SKIRT IS SHORTER FOR 5422.

577066
10JAN73

ENG. CHANGE NO.	DATE	818387 8DEC71	819016	819020 10JAN72	818388 31JAN72	818392 22MAR72	577044 22APR72	577045 01JUN72	577054 7SEP72
	3JUL71 818664	18AUG71 818815	15OCT71 819016	819020 10JAN72	818388 31JAN72	818392 22MAR72	577044 22APR72	577045 01JUN72	577054 7SEP72

THIS PARAGRAPH IS NOT REQUIRED ON MACHINES MANUFACTURED TO EC 818926 OR LATER (IBM SYSTEM 3 PRINTED ON CE CONTROL PANEL COVER).

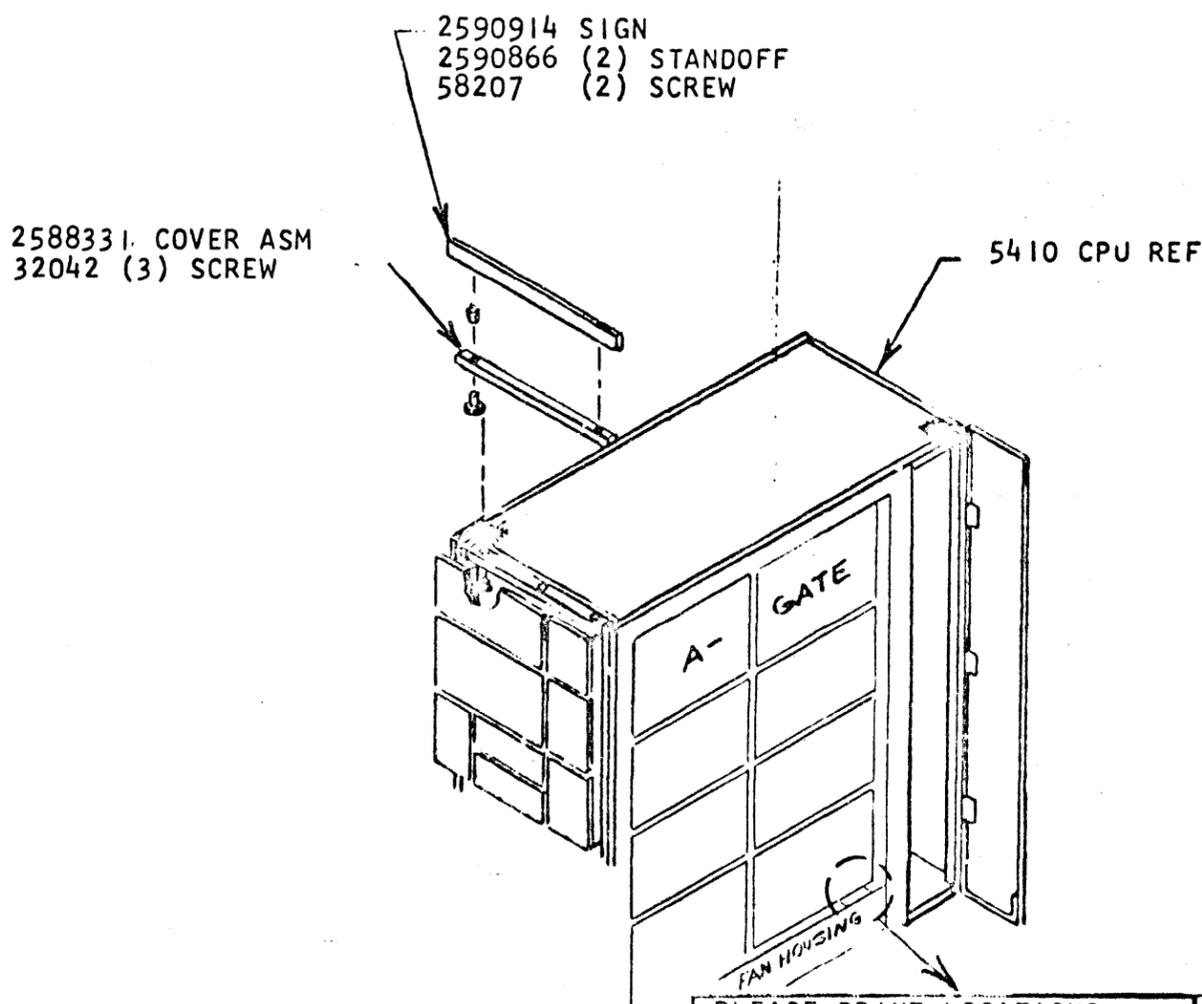
INSTALL THE SYSTEM NAME PLATE (TO COVER PN 2590030) USING (2) SCREWS PN 58207 AND TWO (2) STANDOFFS PN 2590866. THE FOLLOWING PN'S APPLY TO THE NAMEPLATE:

COUNTRY	PN
USA AND GERMANY	2590914
ITALY AND SPAIN	2588408
FRANCE	2588406
JAPAN	2454901

THEN INSTALL COVER ASSEMBLY ABOVE THE CPU USING (3) SCREWS PN 32042. REFER TO FIGURE 28 BELOW.

- () 11.4 READ AND RECORD ALL CUSTOMER USE METERS.
- () 11.5 IF DISK FILE IS INSTALLED, REMOVE AND STORE THE CE CARTRIDGE.
- () 11.6 TURN THE SYSTEM OVER TO THE CUSTOMER AND HAVE HIM VERIFY AND INITIAL THE METER READING.
- () 11.7 FILL OUT AND RETURN ALL APPLICABLE FORMS ASSOCIATED WITH THIS INSTALLATION TO THE ADDRESSEE.
- () 11.8 START THE SYSTEM LOG, IF APPLICABLE.
- () 11.9 FILL OUT THE LOCATOR DECAL (INCLUDED WITH 5410 SHIPPING GROUP) AND ATTACH TO THE 5410 CPU AS SHOWN BELOW.
- () 11.10 FILE ALL INSTALLATION INSTRUCTIONS, (SEE PREFACE FOR FILING THIS DOCUMENT) AND ANY REFERENCE MATERIAL RECEIVED FOR FUTURE REFERENCE.
- () 11.11 COMPLETE THE IR'S, RECORDING ALL PROBLEMS ENCOUNTERED DURING THE INSTALLATION. REPORT THE INSTALLATION COMPLETE TO YOUR BRANCH OFFICE, ACCORDING TO LOCAL PROCEDURES.

FIGURE 28



LOCATOR DECAL

PLEASE PRINT LOCATIONS	SYSTEM TYPE
INSTALLATION MANUAL	
LOGICS	IR/PAIR PACKETS
REFERENCE MANUAL	SYSTEM LOG
TEST CARDS/TAPE	METER LOG
PARTS AND SUPPLIES	PROGRAMMING SYSTEMS ACTIVITY LOG
SCOPE/SPECIAL TOOLS	EC RECORDS

577066
10JAN73

ENG. DATE	3JUL71	13AUG71	15OCT71	818387	819020	31JAN72	22MAR72	22APR72	01JUN72	577054
CHANGE NO.	013664	013815	819016	8DEC71	10JAN72	818388	818392	577044	577045	7SEP72

APPENDIX I

SAFETY

- () 1.1 POWER DOWN SYSTEM WHEN REMOVING AND INSTALLING CABLES, CIRCUIT CARDS, JUMPERS, ETC.
 - () 1.2 REMOVE ALL AC AND DC POWER AND DISCONNECT THE MAIN POWER CABLE WHEN REMOVING OR ASSEMBLING MAJOR COMPONENTS, WORKING IN IMMEDIATE AREA OF POWER SUPPLIES, PERFORMING MECHANICAL INSPECTION OF POWER SUPPLIES, AND INSTALLING CHANGES IN MACHINE CIRCUITRY.
- NOTE: IF YOUR SYSTEM HAS THE 5421 PRINTER CONTROL UNIT ATTACHED, IT WILL HAVE TWO MAIN POWER CORDS. BEFORE WORKING ON MAJOR COMPONENTS, POWER SUPPLIES ETC., IT IS NECESSARY TO DISCONNECT BOTH LINE CORDS.
- () 1.3 WHEN IT IS ABSOLUTELY NECESSARY TO WORK ON EQUIPMENT HAVING EXPOSED LINE ELECTRICAL CIRCUITRY ANYWHERE IN THE MACHINE, THE FOLLOWING PRECAUTIONS MUST BE FOLLOWED:
 ANOTHER PERSON FAMILIAR WITH POWER OFF CONTROLS MUST BE IN THE IMMEDIATE VICINITY.
 RINGS, WRIST WATCHES, CHAINS AND BRACELETS SHALL NOT BE WORN.
 ONLY INSULATED PLIERS OR SCREWDRIVERS SHALL BE USED.
 WHEN USING TEST INSTRUMENTS, BE CERTAIN CONTROLS ARE SET CORRECTLY AND PROPER CAPACITY, INSULATED PROBES ARE USED.
 AVOID CONTACTING GROUND POTENTIAL (METAL FLOOR STRIPS, MACHINE FRAMES, ETC).
 - () 1.4 SAFETY GLASSES MUST BE WORN WHEN SOLDERING, DRILLING, DRIVING PINS AND ALL OTHER CONDITIONS THAT MAY BE HAZARDOUS TO THE EYES.
 - () 1.5 DO NOT USE SOLVENTS, CHEMICALS, GREASES OR OILS THAT HAVE NOT BEEN APPROVED BY IBM.
 - () 1.6 AVOID USING TOOLS OR TEST EQUIPMENT THAT HAVE NOT BEEN APPROVED BY IBM.
 - () 1.7 REPLACE WORN OR BROKEN TOOLS AND TEST EQUIPMENT.
 - () 1.8 DO NOT LIFT MACHINES OR DEVICES WEIGHING IN EXCESS OF SIXTY (60) LBS (27,2 KG).
 - () 1.9 ALL SAFETY DEVICES SUCH AS GUARDS, SHIELDS, SIGNS, ETC., SHALL BE RESTORED AFTER MAINTENANCE.
 - () 1.10 EACH PERSON IS RESPONSIBLE TO BE CERTAIN THAT NO ACTION ON HIS PART RENDERS EQUIPMENT UNSFAE OR EXPOSES HAZARDS TO OTHER PERSONNEL.
 - () 1.11 MAINTAIN GOOD HOUSEKEEPING IN AREA OF MACHINES.

KNOWING SAFETY RULES IS NOT ENOUGH

OBSERVE THEM - FOLLOW THEM

USE GOOD JUDGEMENT

THINK SAFETY

WORK SAFELY

577066
10JAN73

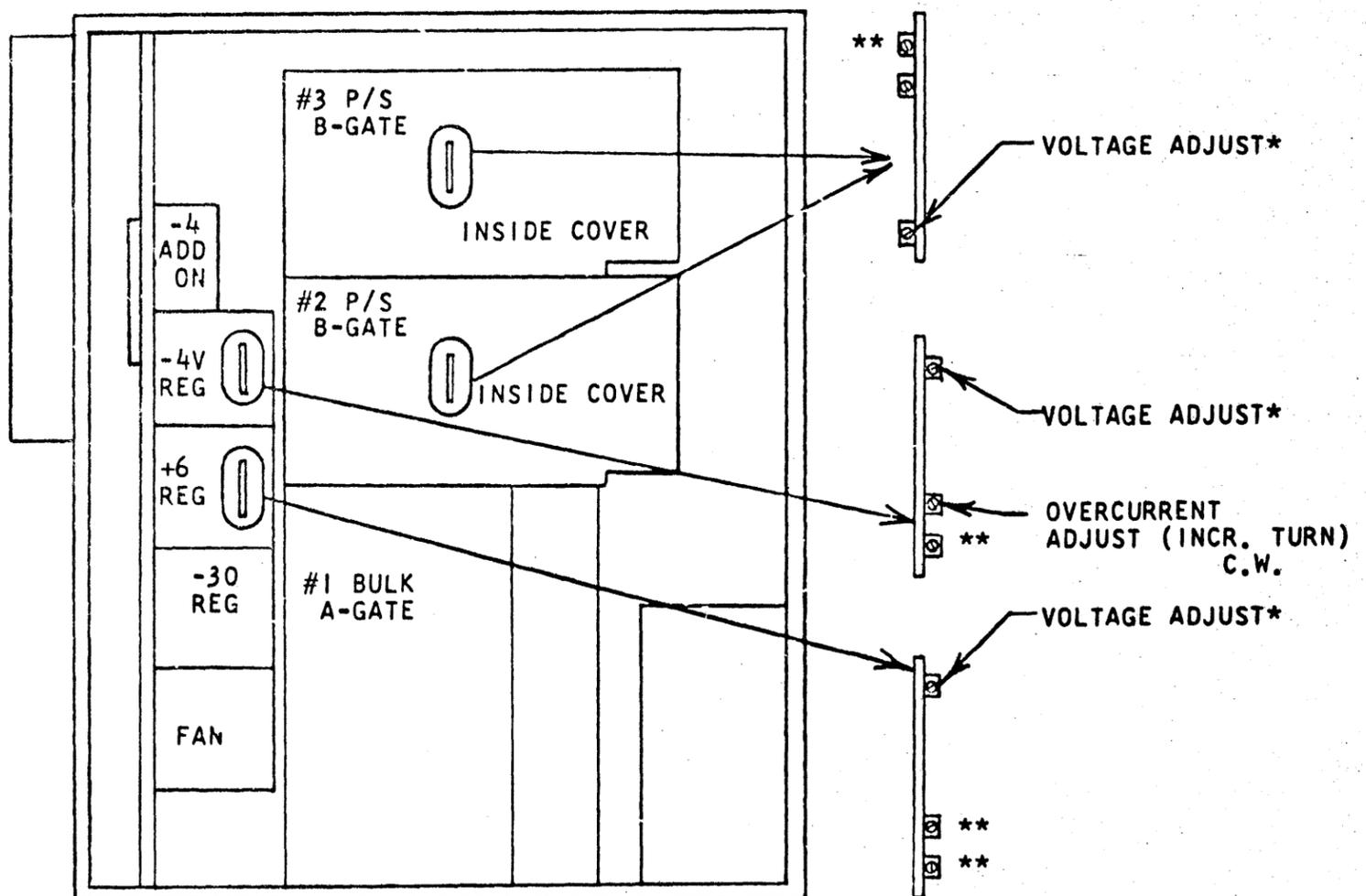
ENG. CHANGE NO.	DATE	8JUL71 818664	18AUG71 818815	15OCT71 819016	818387 8DEC71	819020 10JAN72	31JAN72 818388	22MAR72 818392	22APR72 577044	01JUN72 577045	577054 7SEP72
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APPENDIX II

VOLTAGE ADJUSTMENT

- 1.0 -4 VOLT POWER SUPPLY #1 (A-GATE) OVERCURRENT PROTECTION.
 - 1.1 REFER TO 5410 FEMM CHAPTER 5 (SECTION 5.5) TO ADJUST THE OVERCURRENT.
- 2.0 -4 VOLT POWER SUPPLY #1 (A-GATE)
 - 2.1 CONNECT METER BETWEEN BRASS PLATE #2(-4V) AND BRASS PLATE #1(GROUND) BEHIND CPU CONSOLE.
 - 2.2 ADJUST VOLTAGE FOR -4.15V. (SEE FIGURE 29)
 - 2.3 CONNECT METER ACROSS A-A3C2B06(-4V) AND A-A3C2D08(GROUND). THIS VOLTAGE SHOULD FALL BETWEEN -3.85V AND -4.15V.
 - 2.4 IF 5203 PRINTER IS INSTALLED, CONNECT THE METER ACROSS PEPTB2-8(-4V) AND PEPTB2-7(GROUND)(PRINTER ELECTRONICS GATE.) THIS VOLTAGE SHOULD MEASURE BETWEEN -4.15V AND -3.85V. IF 5421 IS INSTALLED CONNECT METER ACROSS PEPTB1-1 (-4V) AND PEPTB1-3 (GND).
 - 2.5 IF VOLTAGE MEASURED IN EITHER STEP 1.3 OF 1.4 IS OUT OF TOLERANCE, RE-ADJUST THE -4V SUPPLY.
- 3.0 +6 VOLT POWER SUPPLY
 - 3.1 CONNECT METER BETWEEN BRASS PLATE #3(+6V) AND BRASS PLATE #1(GROUND) BEHIND CPU CONSOLE.
 - 3.2 ADJUST VOLTAGE FOR +6V. (THIS ADJUSTMENT HAS NO PLUS OR MINUS TOLERANCE. SET AS CLOSE TO +6V AS POSSIBLE) (SEE FIGURE 29).
- 4.0 -4 VOLT POWER SUPPLY #2 (B-GATE)
 - 4.1 CONNECT METER BETWEEN UPPER LAMINAR BUS POSITION 6(-4V) AND POSITION 7(GROUND). (THE UPPERMOST SCREW ON THE UPPER LAMINAR BUS IS POSITION 10).
 - 4.2 ADJUST VOLTAGE FOR -4.05V. (SEE FIGURE 29).

FIGURE 29



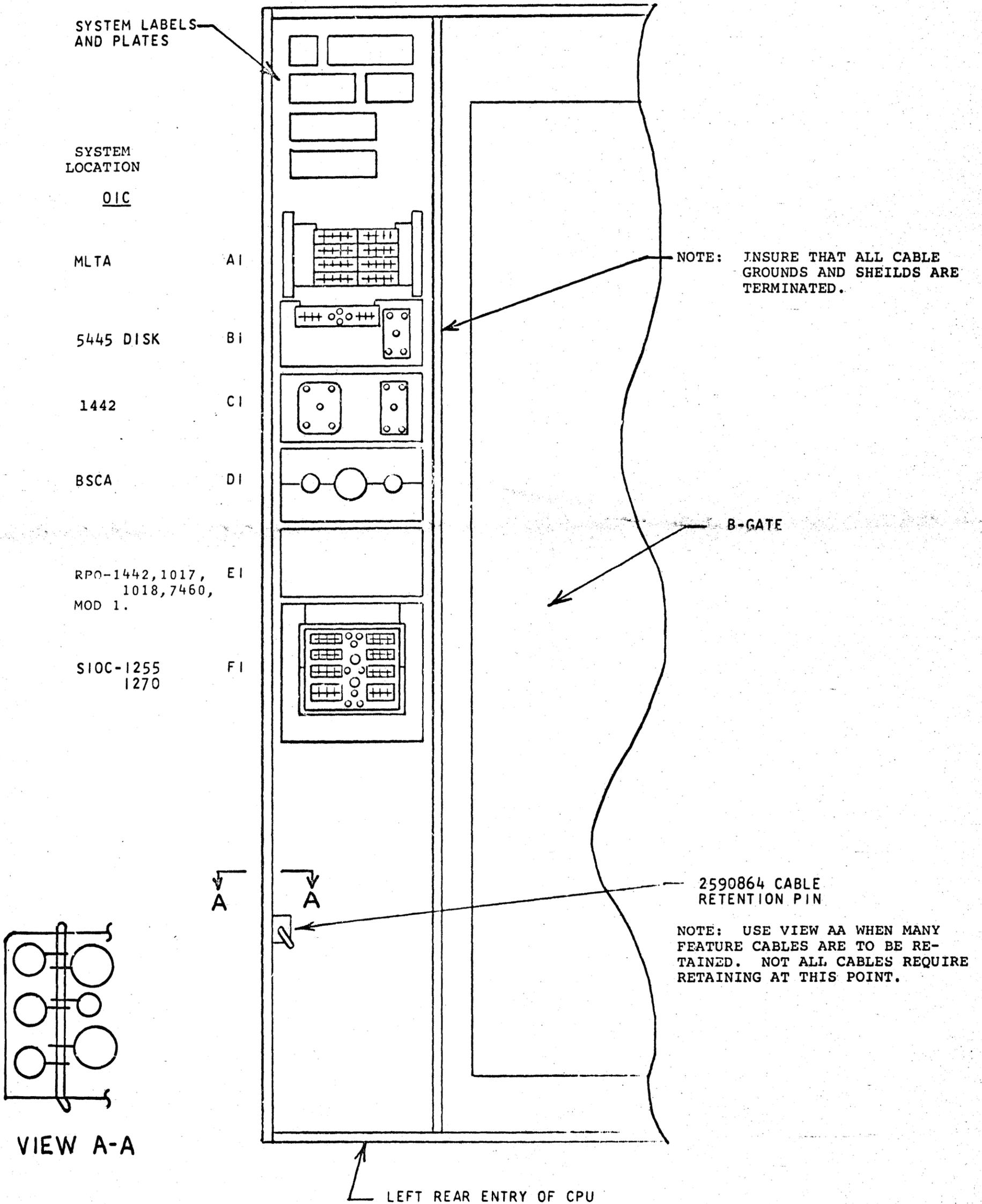
* TURN POT CLOCKWISE TO INCREASE VOLTAGE.
** POT MAY NOT BE ON ALL CARDS.

END VIEW OF INDICATED REG CARDS.

577066
10JAN73

ENG.	DATE	8JUL71	18AUG71	15OCT71	818387	819020	31JAN72	22MAR72	22APR72	01JUN72	DATE TYPED
CHANGE NO.		818664	818615	819016	8DEC71	10JAN72	818388	818392	577044	577045	577054 7SEP72

APPENDIX III
I/O CABLE CLOSET



57706G	818815	819016	818387	819020	818388	818392	577044	577045	577054
10JAN73	18AUG71	15OCT71	8DEC71	10JAN72	31JAN72	22MAR72	22APR72	01JUN72	7SEP72
EC	818664	818815	819016	818387	819020	818388	818392	577044	577045
DATE	8JUL71	18AUG71	15OCT71	8DEC71	10JAN72	31JAN72	22MAR72	22APR72	01JUN72

VIEW

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