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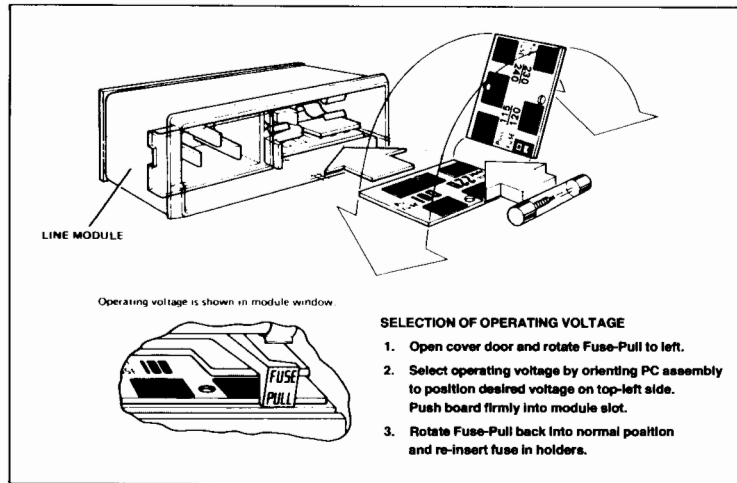
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C. OPTIONS AVAILABLE

2631G OPTION	DESCRIPTION
-STD.	180 CPS printer with raster data graphics and HP-IB interface. (Pedestal not included. See 26098A).
-001	Adds Swedish/Finnish character set.
-002	Adds Norwegian/Danish character set.
-003	Adds French character set.
-004	Adds German character set.
-005	Adds United Kingdom character set.
-006	Adds Spanish character set.
-007	Adds Cyrillic character set.
-008	Replaces USASCII with Katakana/JASCII character set.
-009	Adds Extended Roman character set.
-010	Adds Math character set.
-011	Adds Line Draw.
-012	Adds high density.
-015	220V, 48-62 Hz.
-016	100V, 48-62 Hz.
-017	240V, 48-62 Hz.
-715	Service documentation.
-835	HP-IB I/F for 9835.
-845	HP-IB I/F for 9845.
-888	Used and re-sold.

D. VOLTAGE SELECTION
SELECTION OF OPERATING VOLTAGE

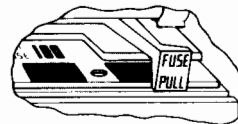


E. FUSE REPLACEMENT

If it is necessary to change the main line fuse, perform the following steps:

- a. Remove the power cable from the printer.
- b. The power cord receptacle contains the fuse. Uncover the fuse by sliding the cover over the power cable connection.
- c. Pull the fuse release lever and remove the fuse.
- d. Reseat the fuse release lever.
- e. Insert a new fuse:
- f. Slide the fuse cover back over the fuse and reconnect the main power cable.

Operating voltage is shown in module window



F. PREVENTIVE MAINTENANCE

The CE is not required to perform PMs on the 2631G family of graphic printers. All preventive maintenance should be performed by the operator as outlined in the 2631G Operator's Manual (02631-90909).

2

ENVIRONMENTAL/ INSTALLATION/PM

A. ENVIRONMENTAL

Temperature

Operating 0° to 55°C (32° to 131°F)
 Non-operating -40° to 75°C (-40° to 167°F)
 **Relative Humidity 5% to 95% non-condensing

**EXCLUDES PAPER – forms should be tried at high humidity for satisfactory feeding and handling, and at low humidity to determine if static buildup must be eliminated for proper stacking.

B. PHYSICAL CHARACTERISTICS

Width 640mm (25.2 inches)
 Depth 470.4mm (18.5 inches)
 Height 215.7mm (8.5 inches)
 Weight 23kg (51 pounds)
 Stand Assembly 24kg (53 pounds)

Clearance Requirements

Front and Rear Adequate for operator access
 Side 76mm (3 inches)

C. ELECTRICAL CHARACTERISTICS

	INPUT (VAC)	RANGE (V)	FREQUENCY TOLERANCE (HZ)
Voltage Source (Selectable)	100	88-110	48-66 Hz
	120	105-132	48-66 Hz
	220	194-242	48-66 Hz
	240	212-264	48-66 Hz

Power Cable Length 1.8 meters (6 feet)
 Power Consumption 265 VA maximum

3

CONFIGURATION

A. RASTER LOGIC PCA (02631-60100)

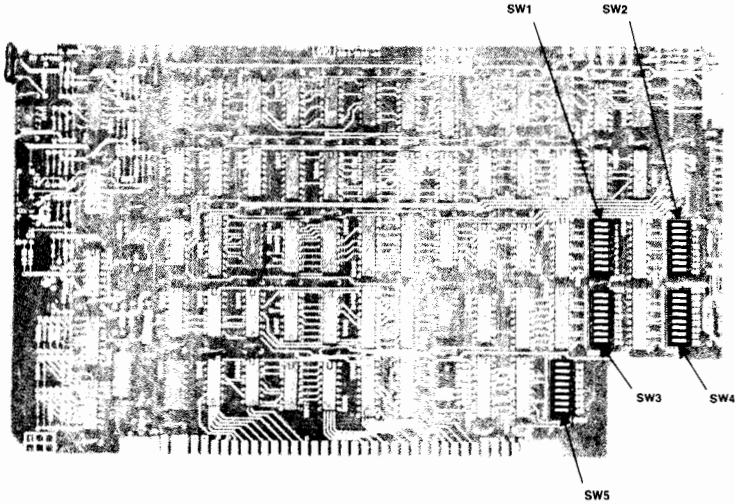
Raster Logic PCA Switch Settings

The Printer Logic PCA (P/N 02631-60100) contains five 8-position rocker switches which may be used to establish or change the operating status of the machine. The switch designations and the operating conditions which they control are:

- SW1 – Character Set Selection (Q-Parameter)
- SW2 – Character Set Selection (Power-On and ID Code)
- SW3 – Page Length
- SW4 – Not Used
- SW5 – Control Codes SO/SI and ENQ/ACK

NOTE

For all switches, the Open position is a logical 1 and the Closed position is a logical 0.



3-2 Configuration

Power-On Character Set Selection		0 = CLOSED 1 = OPEN
NOTE: S9 is indicated by the letter "n" If n = 0, USASCII is PRIMARY, SW1 & SW2 select SECONDARY. If n = 1, USASCII is SECONDARY, SW1 & SW2 select PRIMARY.		
CHARACTER SET NAME	QUALIFIER PARAMETER (S1) SW1 (S8)	IDENTIFIER CODE (S9) SW2 (S16)
Roman (USASCII)	00000000 0	n1010101 U
High Density	00000010 2	n1010101 U
ISO Denmark/Norway	00000000 0	n1000100 P
Roman Extension Chars	00000000 0	n1000101 E
ISO U.K.	00000001 1	n1000101 E
ISO French	00000000 0	n1000110 F
ISO Finland	00000001 1	n1000110 F
ISO Belgium	00000010 2	n1000110 F
ISO German No. 1	00000000 0	n1000111 G
ISO German No. 2	00000001 1	n1000111 G
ISO Austria	00000010 2	n1000111 G
ISO Hungary	00000001 1	n1001000 H
ISO Italy No. 1	00000000 0	n1001001 I
ISO Italy No. 2	00000001 1	n1001001 I
Japanese (JASCII)	00000000 0	n1001011 J
Katakana	00000001 1	n1001011 K
Line Draw	00000000 0	n1001100 L
Math Symbols	00000000 0	n1001101 M
Roman (Russia)	00000000 0	n1010010 R
Cyrillic	00000001 1	n1010010 R
ISO Romania No. 1	00000010 2	n1010010 R
ISO Romania No. 2	00000011 3	n1010010 R
ISO Romania No. 3	00000100 4	n1010010 R
ISO Sweden/Finland	00000000 0	n1010011 S
ISO Spain	00000001 1	n1010011 S
ISO Switzerland No. 1	00000010 2	n1010011 S
ISO Switzerland No. 2	00000011 3	n1010011 S
ISO Switzerland No. 3	00000100 0	n1010011 S
ISO Switzerland No. 4	00000101 5	n1010011 S
All Blank Characters	00000000 0	n1011010 Z

POWER ON PAGE LENGTH SELECTION:	0 = CLOSED 1 = OPEN
--	--------------------------------------

PAGE LENGTH SETTING	(S17) SW3 (S24)
3 inches	00100100
3.5	00101010
4	00110000
5.5	01000010
6	01001000
7	01010100
8.5	01100110
11	10000100
12	10010000
14	10101000

NOTE: For page length not shown in the above table, the binary number coded in the SW3 represents increments of 1/2 of an inch.

Alternate Character Set Selection & Graphics Protocol

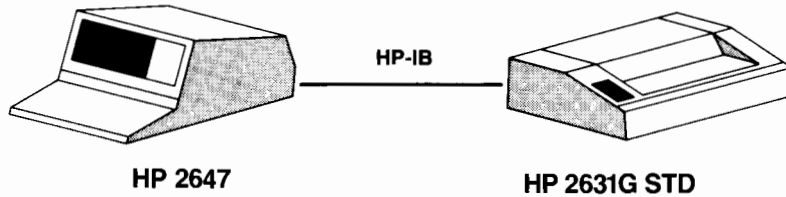
SW5	CLOSED	OPEN
Power on alternate Character Set selection S38	SI/SO	8th Bit Code
ENQ/ACK Graphics Protocol (if this switch is not enabled, self test will fail) S39	Enabled	Disabled



B.

HP 2647 to HP 2631G
 With HP-IB I/O PCA 02631-60145 or 0231-60226

(SUPPORTED)



SYSTEM INFORMATION

I/F: 13296A (02640-60128)
CABLES: 10631A (1m)
 10631B (2m)
 10631C (3m)
 10631D (0.5m)

ADAPTER: 02640-60215
FROM: RTD

SWITCH SETTINGS: O = OPEN
 C = CLOSED

HP-IB INTERFACE (02640-60128)

A4	A11	A10	A9	ATN	ATN2			
C	O	C	C	O	C			
PL6	PL5	PL4	PL3	PL2	PL1	PL0	FC	
C	O	O	O	O	O	O	C	
TA	LA	B4	B3	B2	B1	B0	SC	
C	O	O	O	O	C	O	O	

NOTES:

1) HP-IB address of terminal is #29

PRINTER INFORMATION

I/F: 02631-60145 or 02631-60226

ADAPTER: 02631-60011

CONTROL PANEL: 02631-60087

SWITCH SETTINGS:

Raster Logic PCA (02631-60100)

SW1: 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X
 SW2: 1-C 2-X 3-X 4-X 5-X 6-X 7-X 8-X
 SW3: 1-O 2-C 3-C 4-C 5-C 6-O 7-C 8-C
 SW4: 1-C 2-C 3-C 4-C 5-C 6-C 7-C 8-C
 SW5: 1-C 2-C 3-C 4-C 5-C 6-C 7-C 8-C

HP-IB Adapter (02631-60011)

1	2	3	4	5	6	7
O	O	C	C	O	O	O

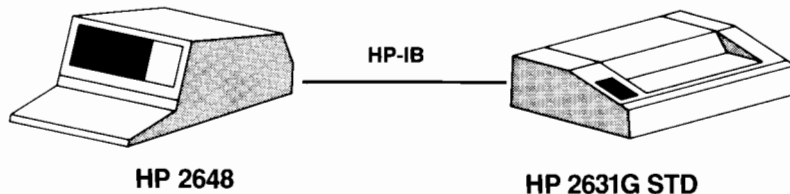
NOTES:

- 1) 2631G is only HP-IB compatible
- 2) HP-IB address of printer is #06
- 3) 11" page selected
- 4) USASCII is primary

C.

HP 2648 to HP 2631G
 With HP-IB I/O PCA 02631-60145 or 0231-60226

(SUPPORTED)



SYSTEM INFORMATION

I/F: 13296A (02640-60128)
CABLES: 10631A (1m)
 10631B (2m)
 10631C (3m)
 10631D (0.5m)
ADAPTER: 02640-60215
FROM: RTD
SWITCH SETTINGS: O = OPEN
 C = CLOSED
 HP-IB INTERFACE (02640-60128)

A4	A11	A10	A9	ATN	ATN2		
C	O	C	C	O	C		
PL6	PL5	PL4	PL3	PL2	PL1	PL0	FC
C	O	O	O	O	O	O	C
TA	LA	B4	B3	B2	B1	B0	SC
C	O	O	O	O	C	O	O

- NOTES:**
- 1) HP-IB address of terminal is #29
 - 2) 2648 requires "raster dump ROM" (p/n 1818-1388) in location 12 on second control memory PCA.
 - 3) Default value for hardcopy (printer) output is HP-IB address #06.
 - 4) "Gold" key f3 (display) "insert char" "green" key f1 (all).

PRINTER INFORMATION

I/F: 02631-60145 or 02631-60226
ADAPTER: 02631-60011
CONTROL PANEL: 02631-60087
SWITCH SETTINGS:
 Raster Logic PCA (02631-60100)
 SW1: 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X
 SW2: 1-C 2-X 3-X 4-X 5-X 6-X 7-X 8-X
 SW3: 1-O 2-C 3-C 4-C 5-C 6-O 7-C 8-C
 SW4: 1-C 2-C 3-C 4-C 5-C 6-C 7-C 8-C
 SW5: 1-C 2-C 3-C 4-C 5-C 6-C 7-C 8-C

HP-IB Adapter (02631-60011)

	1	2	3	4	5	6	7
	O	O	C	C	O	O	O

- NOTES:**
- 1) 2631G is only HP-IB compatible
 - 2) HP-IB address of printer is #06
 - 3) 11" page selected
 - 4) USASCII is primary

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TROUBLESHOOTING

A. TROUBLESHOOTING TABLE

Common Symptoms and Possible Causes

PROBLEM	CAUSE
POWER-ON indicator not illuminated	<ol style="list-style-type: none"> 1. Power cord not connected. 2. Line fuse in power module is bad. 3. No current from power outlet. 4. Indicator light is bad (fan will operate). 5. Front switch panel or keyboard cable is disconnected.
Machine not going through power-up	<ol style="list-style-type: none"> 1. If head drives slowly to right, check left crash stop. 2. Bad control board. 3. Bad interface PCA. 4. Top connector bad or on backwards.
Print quality very light or smudged	<ol style="list-style-type: none"> 1. Print head out of adjustment. 2. Ribbon cartridge needs replacing. 3. Print head needs cleaning. 4. Print head bracket on carriage assembly is loose. 5. Bent or improperly seated lead screw – check for pattern of light and dark.
Missing dots or ragged characters	<ol style="list-style-type: none"> 1. Print head out of adjustment. 2. Print head needs cleaning. 3. Bad print head. 4. Raster logic PCA is bad. 5. Servo speed too high. 6. Encoder out of alignment. 7. Bad power supply. 8. Bad print head cable.
Random dots missing in characters	<ol style="list-style-type: none"> 1. Encoder alignment. 2. Servo speed adjustment. 3. Dirty head. 4. Too much head to platen gap.

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Common Symptoms and Possible Causes (continued)

PROBLEM	CAUSE
Paper does not advance properly	<ol style="list-style-type: none"> 1. Paper not properly loaded, check tractors and paper alignment. 2. Paper perforations damaged. 3. Paper is catching on box. 4. Bad paper drive circuitry (raster logic PCA, power electronics PCA, stepper motor). 5. Paper guide too tight. 6. Bad "O" ring on paper drive clutch.
Circuit breaker trips	<ol style="list-style-type: none"> 1. Defective print structure or lead screw (excessive friction on guide bars, try dry lubricant). 2. Print head movement obstructed (paper jammed, ribbon jammed). 3. Servo motor is bad.
Paper tearing or separating on multipart forms	<ol style="list-style-type: none"> 1. Paper binding or dragging, check paper path. 2. Multipart forms not entering unit through the bottom opening. 3. Print head needs adjustment. 4. Paper guide too tight.
Print wires snag ribbon	<ol style="list-style-type: none"> 1. Dirty print head. 2. Print speed too tight. 3. Bad print head. 4. Bad ribbon.
Fails ROM/RAM portion of self-test	<ol style="list-style-type: none"> 1. Control PCA is bad. 2. Memory information circuits on I/O interface PCA bad. 3. Clock circuits on printer logic PCA bad. 4. Power electronics PCA is bad.
Fails I/O test or power-on routine portion of self-test	<ol style="list-style-type: none"> 1. I/O interface PCA bad. 2. Control PCA bad. 3. Power electronics PCA bad. 4. Front panel/keyboard bad.
Fails servo movement portion of self-test	<ol style="list-style-type: none"> 1. Circuit breaker tripped, reset and try again. 2. Raster logic PCA bad. 3. Power electronics PCA bad. 4. Control PCA bad. 5. Servo motor, lead screw, guide rails, or carriage may be bad. 6. Encoder PCA bad or needs alignment. 7. Front panel/keyboard bad.
Printing portion of self-test fails or is bad	<ol style="list-style-type: none"> 1. Print head or associated fuses on power electronics PCA are bad. 2. Power electronics PCA bad. 3. Raster logic PCA bad. 4. Control PCA bad. 5. Encoder PCA bad or encoder alignment needed. 6. I/O interface PCA bad.

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Common Symptoms and Possible Causes (continued)

PROBLEM	CAUSE
+ 5 LED off or noticeably different intensity	<ol style="list-style-type: none"> 1. Check fuses on power electronics PCA. 2. Check + 5V source. 3. Replace power electronics PCA. 4. Check crimps on transformer cable.
+ 12 LED off or noticeably different intensity	<ol style="list-style-type: none"> 1. Check fuses on power electronics PCA. 2. Check + 12V source. 3. Replace power electronics PCA. 4. Check crimps on transformer cable.
- 12 LED off or noticeably different	<ol style="list-style-type: none"> 1. Check fuses on power electronics PCA. 2. Check - 12V source. 3. Replace power electronics PCA. 4. Check crimps on transformer cable.
Power fuses open repeatedly	<ol style="list-style-type: none"> 1. Print head coil is shorted. 2. Ribbon cable to head is bad. 3. Servo cable is bad. 4. Static turns on SCR and blows fuse.
Random shifting of left margin in and out	<ol style="list-style-type: none"> 1. If shift is by dot columns, check encoder alignment. 2. If shift is by complete characters, check encoder alignment and head location circuits (raster logic PCA and control PCA). 3. Check crash stops. 4. Check for static. 5. Print structure bad. 6. Excess wear of print head bracket.
Occasional stepping of left margin to the right	<ol style="list-style-type: none"> 1. Static electricity. 2. Intermittent left crash stop. 3. Bad raster logic PCA. 4. Bad control PCA. 5. Noisy motors. 6. Be sure stand or table is grounded to the unit chassis ground. 7. Encoder alignment drifting.
Print density (darkness) varies between left and right side of platen	<ol style="list-style-type: none"> 1. Loose head or bracket. 2. Defective print structure.
Character tilted (not vertical)	<ol style="list-style-type: none"> 1. Loose head or bracket. 2. Defective head. 3. Defective bracket.
Top or bottom dots missing	<ol style="list-style-type: none"> 1. Head bracket bent or tipped up or down. 2. Bad head. 3. Bad power PCA. 4. Defective ribbon.

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Common Symptoms and Possible Causes (continued)

PROBLEM	CAUSE
Graphics printout shows lines of overlap and spacing.	1. Paper path obstructed. 2. Excess drag on paper. 3. Bent tractor support shaft.
Self test will not print graphics portion	1. Bad raster logic PCA 2. Switch S39 disabled on raster logic PCA.

B. HINTS

1. If after removing and replacing power PCA, only the lights come on but there is no servo motion; check cables and connectors to power PCA to ensure proper positioning (connectors are not keyed).

C. MECHANICAL PROBLEM SOLVING

1. **Ribbon snagging** can occur in any machine if the head is too close to the platen, and some heads are quite sensitive to this distance. There may be imperfections such as a small burr on a wire which can catch the ribbon threads. The designated head to platen distance is 0.019 inch, though some heads have been found to operate best at gaps of up to 0.026 inch. On machines that are subject to snagging, try a wider gap before replacing the head. Snagging is also associated with sudden speed changes such as occur when print modes are changed while printing a line. A bent lead screw can also cause ribbon snagging.
2. The **circuit breaker** on the print mechanism assembly may pop for a variety of causes. This thermal breaker is activated when current through the breaker remains above 3 amps for an extended period of time. The lead screw, helix nut, carriage, and rails can all contribute to driving the servo current above this limit and popping the breaker. The white lead screw nut seems to particularly aggravate the problem. If a unit has been popping breakers, the lead screw and rails should be thoroughly cleaned with isopropyl alcohol. Check to see that the carriage and head move freely on the rails and that the lead screw isn't bent. Any binding or friction in this area should be corrected. A temporary fix is to carefully apply a thin film of dry lubricant until a new print mechanism can be obtained. It is believed this will cause future problems, however, so only utilize lubricants as a last resort.

3. Vertical column offset appears as a shifting of the leftmost character every other line

during bidirectional printing. The symptom is repeatable in bidirectional printing, but disappears in unidirectional printing. The causes include: worn head mounting bracket, binding ribbon, bad encoder, and bad print structure. The specification for margin wander is .015 inch. This can be measured with an optical comparator or with the edge of a feeler gauge. .015 inch is approximately one dot row.

4. When printing graphics with the 2631G, it is absolutely essential that there is no excess friction along the paper path. A "cocked" box of paper, extra tension, or the perforations catching while passing the bottom of the platen will cause lines of either space or overlap in graphics mode. Another cause of lines to space of overlap is a bent tractor support shaft (P/N 02631-20004). This is one of the two shafts on which the tractors slide (the square shaft).

S E R V I C E N O T E

2631G MANUFACTURING CONVERSION

WARRANTY INFORMATION FOR UNITS
PRECEDING SERIAL PREFIX 2141

Supersedes:

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
PERFORM:	Immediately <input type="checkbox"/>	At PM Normal Call <input type="checkbox"/>
	On Failure <input checked="" type="checkbox"/>	Information Only <input type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		NONE
PARTS:	See text	X
TRAVEL:		X
SERVICE	Return for update	Obsolete <input checked="" type="checkbox"/>
INVENTORY	Return for salvage	See text <input type="checkbox"/>
WARRANTY EXTENDED UNTIL: 9/30/82		

The 2631G previously contained six PCA's; Top Plane, Power PCA, 24K PROM PCA, Control PCA, Raster Logic PCA, and HP-IB I/O PCA. A change has been made which obsoleted four of the PCA's. The currently manufactured 2631G contains only four PCA's (because while performing the change, two PCA's have been eliminated). The PCA's are; Power PCA (02631-60277), Control/ROM PCA (02631-60626), Raster Logic PCA (02631-60100), and HP-IB I/O PCA (02631-60226).

Procedure of retrofitting original unit to current unit.

Problem (any of the following PCA's has failed):

Control PCA	(Obsolete)	02631-60089
HP-IB I/O PCA	(Obsolete)	02631-60145
24K PROM PCA	(Obsolete)	02631-60102 or 02631-60602
Top Plane Connector	(Obsolete)	02631-60014

Solution:

1. Remove all of the above PCA's (none of the PCA's are compatible with the new PCA's in any combination).
2. The character sets and bar code ROMs must be removed from the original PCA (24K PROM, P/N 02631-60102 or 02631-60602) and transferred to the current PCA (Control/ROM, P/N 02631-60626). See Figures 1 and 2 on back.
3. Install current PCA's listed below:

Control/ROM PCA	(New)	02631-60626
HP-IB I/O PCA	(Same as 2631B)	02631-60226

 (Notice that four PCA's have been replaced by two PCA's.)

Field offices are recommended to combine 2631G and 263XB Service kits.

(over)

MH
10/30/81



WARRANTY:

Division 5400 will assume parts cost of the Control/ROM PCA (p/n 02631-60626), but does not assume parts cost of the HP-IB I/O PCA (p/n 02631-60226, this PCA is currently part of the 2631B Support Kits).

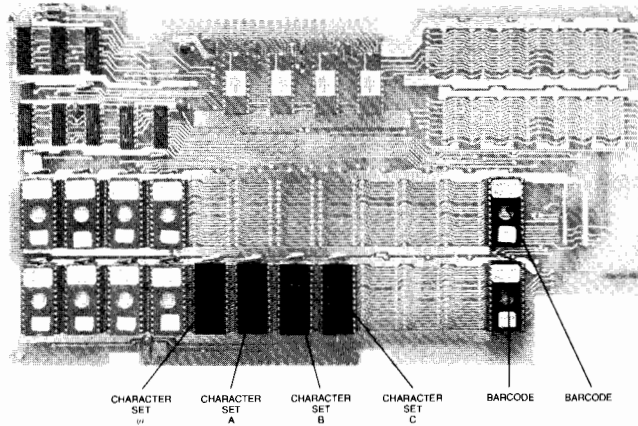


Figure 1
Obsolete 24K PROM OCA
(Note Character ROM locations)

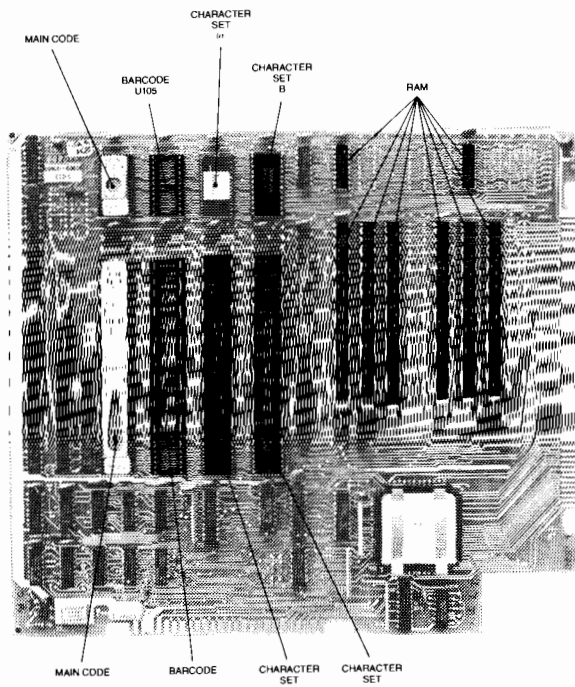


Figure 2
Current Control/ROM PCA
(Note corresponding Character ROM locations)

Self-Test

The TEST switch on the operator control panel initiates a routine which tests the unit to determine if it is in proper operating condition. To perform self-test from the operator control panel, press and release the SELF-TEST switch. When the switch is pressed self-test begins.

Immediately after the interface test has been completed, default conditions for the self-test are established, a checksum is performed on the character set ROMs, then the unit performs the printing test. The order of the printing test is: two lines at 6 LPI (lines per inch) and in 10 character per inch density, one line at 8 LPI, one line each of the other character densities (14.4 cpi, 7.2 cpi, 5 cpi), one line in the auto-underline mode, one line of the graphics display, one line each for all characters sets installed in the unit, and one line of the display functions with the full primary character set. The symbols displayed to the left of each characters set line are the identity codes for each set. **NOTE:** If a secondary character set has not been selected or is not present, the second line of the printout will be blank.

A continuous ripple print feature is also part of the printer's self-test function. It is accessed by pressing the TEST switch twice within 30 milliseconds. Once invoked, this test pattern will be repeated continuously, and can only be terminated by pressing the RESET switch (pressing the RESET switch to terminate ripple print will cause programmable information to be lost and return the unit to power-on default conditions).

If the LINE FEED switch is pressed when the unit is printing the continuous ripple print portion of self-test, the unit will print on the same line 27 times before performing a line feed. Each toggling of the LINE FEED switch will toggle the overprint mode. The unit must be reset to cancel this operation.

There is a row of LEDs along the top edge of the raster logic PCA (P/N 02631-60100) which indicate go/no go operation. During self-test all LEDs will be off. After self-test the end LED will be blinking. If any other LEDs are on after self-test, there is a failure. Normal operation has the end LED blinking.



6

ADJUSTMENTS

A. COMMON ELECTRICAL ADJUSTMENTS

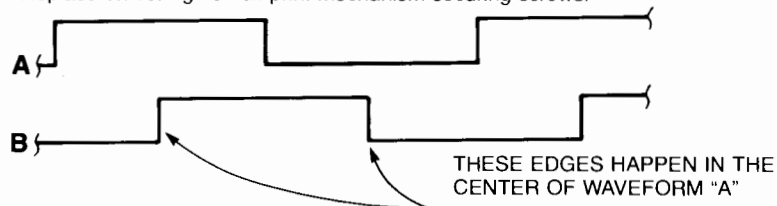
Encoder Assembly Alignment

To properly align the encoder assembly, a dual trace, 10 MHz oscilloscope is required. Perform the following steps.

1. Set the main power switch to OFF.
2. Disconnect the helix nut from the carriage to prevent rotation of the lead screw from driving the print head into the crash stops. This can be accomplished by removing the three screws on the lower right side of the carriage. Next, move the carriage to the center of the print mechanism.
3. If the encoder assembly is to be replaced or if the 90° phase shift is off, use a #3 pozi to remove the screw securing the right end of the print structure to the base. Also, loosen the two screws holding the left end of the print structure. The encoder may now be replaced and/or adjusted. It is attached to the side plate with two screws which can now be accessed by raising the right end of the print mechanism.
4. While holding down the RESET switch, apply power to the unit. Release the RESET switch. The lead screw should be driven counterclockwise when viewed from the right side of the print mechanism. If upon release of the RESET switch the lead screw rotation appears to be too rapid again perform step 5 to correct the runaway condition.
5. Connect the channel A and channel B scope probes to test points A and B on the raster logic PCA. Adjust potentiometers A & B on the encoder PCA for 50% duty cycle with the scope sync set on the channel being adjusted.
6. Move the scope probes to test points C and D. Adjust potentiometers C and D on the encoder PCA for 50% duty cycle with the scope sync set on the channel being adjusted.
7. Reconnect the scope probes to test points A & B, syncing on A. Loosen the screw holding the encoder assembly and move the encoder inward as far as possible, then back it out slightly until the waveform shown in figure 1 is observed.
8. Repeat steps 5 through 7 until no further adjustment is necessary.
9. Move the scope sync probes to test points C and D again and verify a similar waveform to that shown in figure 1. (The frequency of the waveform will vary from the waveform observed in step 7.) Note that the 90° phase shift must occur on A vs. B and C vs. D simultaneously. It is a trial and error process to find an encoder position that satisfies this.

6-2 Adjustments

10. Remove power from the unit.
11. Tighten both encoder assembly mounting screws carefully to avoid disturbing the alignment. The measurements in steps 5 and 6 should be repeated to ensure that the alignment has not changed.
12. Replace and/or tighten all print mechanism securing screws.



Print Speed Adjustments

This adjustment allows the print speed to be adjusted to the speed specification of 180 characters per second. Proceed as follows:

1. Set the main power switch to OFF.
2. Connect an oscilloscope input lead to test point C or D and ground on the raster logic PCA, then sync the oscilloscope for the channel being used. (A frequency counter may be used in the following steps.)
3. Set the main power switch to ON.
4. Press the SELF-TEST switch twice to provide a continuous ripple print for the following adjustments. (Pressing RESET will end the ripple print mode.)
5. Adjust R1 (labeled SPEED) on the raster logic PCA for a pulse every 556msec (1800 Hz) on the oscilloscope display. The trace on the display represents the print speed only while the unit is printing. During carriage return or skip modes, the trace is of no value for this adjustment.

CAUTION

Do not attempt to increase the print speed of the unit by adjusting R1 for pulses having a frequency in excess of 556 msec. Poor print quality or damage to the unit may result.

6. Repeat steps 4 and 5 as many times as necessary to achieve a pulse width of 556 msec.
7. Set the main power switch to OFF and disconnect the oscilloscope leads.

7

PERIPHERALS

DOES NOT APPLY.

8

REPLACEMENT PARTS

THE FOLLOWING PAGES CONTAIN THE ORIGINAL PARTS TO REPLACEMENT PARTS TABLES.



A. TABLE – ORIGINAL PARTS TO REPLACEMENT PARTS

HP PART NUMBER	DESCRIPTION	2631G		EXCHANGE PART NUMBER	REPLACEMENT PART NUMBER
		STD	200		
02631-60001	Power Electronics	X		02631-69001	02631-60277
02631-60002	Motherboard	X	X	N/A	N/A
02631-60011	HP-IB Adapter	X	X	N/A	N/A
02631-60014	3 Position Control Bus	X	X	N/A	obsolete
02631-60016	Crash Stop Cable Assy.	X	X	N/A	02631-60603
02631-60020	Transformer	X	X	N/A	N/A
02631-60027	Print Structure	X	X	N/A	N/A
02631-60030	Stepping Motor	X	X	N/A	N/A
02631-60040	Fan	X	X	N/A	N/A
02631-60055	Power Module	X	X	N/A	N/A
02631-60056	Line Filter	X	X	N/A	N/A
02631-60068	Print Head	X	X	N/A	N/A
02631-60089	Control PCA	X	X	N/A	N/A
02631-60097	Head Guard	X	X	02631-69089	See Note 1
02631-60100	Raster Logic PCA	X	X	N/A	N/A
02631-60102	PROM/RAM PCA	X	X	02631-69100	N/A
02631-60145	HP-IB I/O PCA	X	X	02631-69102	See Note 1
02631-60147	Print Mechanism	X	X	02631-69145	See Note 1
02631-60226	HP-IB I/O PCA	X	X	N/A	N/A
02631-60253	Leadscreen, Bearing, Disc	X	X	02631-69226	N/A
02631-60255	Antistatic Tinsel Kit	X	X	N/A	N/A
02631-60273	Antistatic Tinsel Kit	X	X	N/A	N/A
02631-60277	Power Electronics PCA	X	X	N/A	02631-60255
02631-60380	Opto-Interrupter Cable Assy.	X	X	02631-69277	N/A
02631-60626	ROM/Control PCA	X	X	N/A	N/A
		X	X	02631-69626	N/A

NOTE 1: The 2631G underwent a manufacturing change in late 1981. The 12V logic was eliminated along with a change to 3 of the major PCAs. The 02631-60089, 02631-60145 and 02631-60102/02631-60602 were replaced by the 02631-60626 and 02631-60226. See Service Note 2631G-16 for more information. (The service note is included in this section.)

B. TABLE — CHARACTER ROM P/NS

OPTION	CHAR SET	ROM PART NUMBER
001	Swed/Fin	1818-0881
002	Nor/Dan	1818-0881
003	French	1818-0881
004	German	1818-0881
005	UK	1818-0881
006	Spanish	1818-0881
007	Cyrillic	02631-60190
008	Katakana	02631-60192
009	Roman Ext.	1818-0881
010	Math Sym	02631-60218
011	Line Draw	1818-0882
012	High Density USASCII	1818-0883
S03	Hebrew	02631-81024



9

DIAGRAMS

NOT AVAILABLE AT PRINTING.

10

REFERENCE

A. DOCUMENTATION SUMMARY

TITLE	HP P/N
HP 2630B Family Service Manual	02631-90919
HP 2631G Option 200 Bar Code & Mark Sense Printing Guide	02631-90194
HP 2631G Operator's Manual	02631-90909
HP 2631G Reference Manual	02631-90911
HP 2630 Parts & Diagrams Manual	02631-90913



11

SERVICE NOTES/ IOSMs

A. 2631G

SEQ. NO.	PUB. DATE	TITLE
1	Oct. 1978	2631A/35A/39A/31G Printer/Terminal 02631-60027 Print Structure
2	Dec. 1978	Opt. 009 Roman Extension Character Set
3	Feb. 1979	2631A/35A/39A/31G Printer/Terminal Operator Service
4	Feb. 1979	Head Mounting Bracket Assy. 02631-60223 and 02635-60024
5	Feb. 1979	MC ² , PHI and CHI Chips New Part Numbers
6	Mar. 1979	263X Family Print Head HP P/N 02631-60068
7	Mar. 1979	2631A/35A/39A 02631-60037 Encoder Assy./2631G 02631-60163 Enc. Assy.
8	July 1979	Motherboard
9	Aug. 1979	02631-60040 Fan Assembly 4208-0183 Filter
10	Aug. 1979	8-Bit Differential Interface 02631-60008 (-69008 exchange)
11	Aug. 1979	Flame Sprayed Cases
12	Jan. 1980	Right Hand Ribbon Drive Assemblies 02631-60254/02635-60029
13	Jan. 1980	Head Cable Retainer (HP P/N 4320-0327)
14	June 1980	Intermittent 263XA/B/G Failures With Cover On
15	June 1980	Power Supply Compatibility Between 263XA and 263XG
16	Oct. 1981	2631G Manufacturing Conversion

B. INTEROFFICE SERVICE MEMOS

DATE	SUBJECT
Aug. 1978	2631G Graphics Terminal Support Plan
Mar. 1979	Support Recap – 2631A/35A/39A/31G
Sept. 1979	Electrostatic Discharge – A Review
Oct. 1979	263X Print Heads, P/N 02631-60068
Feb. 1980	Support Recap II – 2631A/35A/39A/31G

