INTEGRATED ASYNCHRONOUS "DATASPEED*" 40

RECEIVE-ONLY PRINTER STATION

GENERAL DESCRIPTION

CONTENTS PAGE

1. GENERAL

1.01 This section contains a brief general description of Integrated Asynchronous DATASPEED 40 Receive-Only Printer (ROP) Stations in both DATAPHONE† (40/1 and 40/2) and multipoint private line (40/3) service. It is intended to meet the needs of field maintenance personnel. More complete information is provided in the reference BSP sections listed in Part 4.

1.02 This section is reissued to include the latest USO codes.

1.03 Integrated ROP station configurations are shown in Figs. 1, 2, 3, 4 and 5.

1.04 The 40C303/AD integrated asynchronous controller replaces the 40C303/-AA/001 integrated asynchronous controller. It has all of the features of the 40C303/AA/001 plus additional features.

1.05 These station arrangements are capable of being used for (1) operation on the switched network using Data Set 202SR, 212AR or equivalent (with appropriate data auxiliary set or telephone set as required); (2) operation on the switched network using Data Set 103JR, 113AR, 202SR, 212AR, or equivalent (with appropriate data auxiliary set or telephone set as required); and (3) operation on multipoint private lines using Data Set 108D, 108E, or 202T or equivalent. These three types of operation are designated 40/1, 40/2, and 40/3, respectively. In addition, they may be used in two point nonselective private line applications (point-to-point private line) using Data Set 108F, 108G, or 202T. Variations in operation are obtained solely by means of options in the integrated controller, plus selection of the appropriate data set.

1.06 Speeds of 110 baud, 150 baud, 300 baud, 600 baud (40C303/AD only), 1050 baud, 1200 baud, 1800 baud, 2100 baud, 2400 baud, 3000 baud, 3600 baud or 4800 baud asynchronous may be selected independently of operation, if permitted by data set capabilities. In addition, the 40C303/AD may be operated isochronously. A 10- or 11-unit ASCII (American National Standard Code for Information Interchange) character, with or without parity, may be used.

1.07 The interface to the data set is compatible with EIA (Electronic Industries Association) RS-232-C. It is defined in Table A.

1.08 Friction feed arrangements use the noise reduced printer cabinet previously released for use with the 40C303/AA/001 integrated asynchronous controller. 80-column tractor feed printer cabinets are of the same size, shape and weight as those used previously for DATA-SPEED 40 KDP or ROP arrangements. The printer cabinets for the 132-column tractor feed arrangements are of the same size, shape and weight as those previously released for DATA-SPEED 40 KDP arrangements.

1.09 Opcons furnished for these arrangements are of the same size, weight and shape as previously released except for 40K005/AAC opcon which is used for forms access arrangements only.

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†Registered Service Mark of AT&TCo.

Prepared for American Telephone and Telegraph Company by Teletype Corporation

1.10 The printers are the same as those previously released except as noted below:

(a) The friction feed printer is noise reduced.

(b) The 80-column tractor feed printers provide additional voltages to drive the integrated asynchronous controllers.

(c) Additional switch controlled features are available on the 40P154/ZZ printer and the 40P202/ZZ printer.

1.11 Options in the integrated ROP set are installed by means of miniature slide, toggle, or rocker switches or by cutting diodes or the diode matrix card. Option implementation is given in Section 582-200-204.

1.12 When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

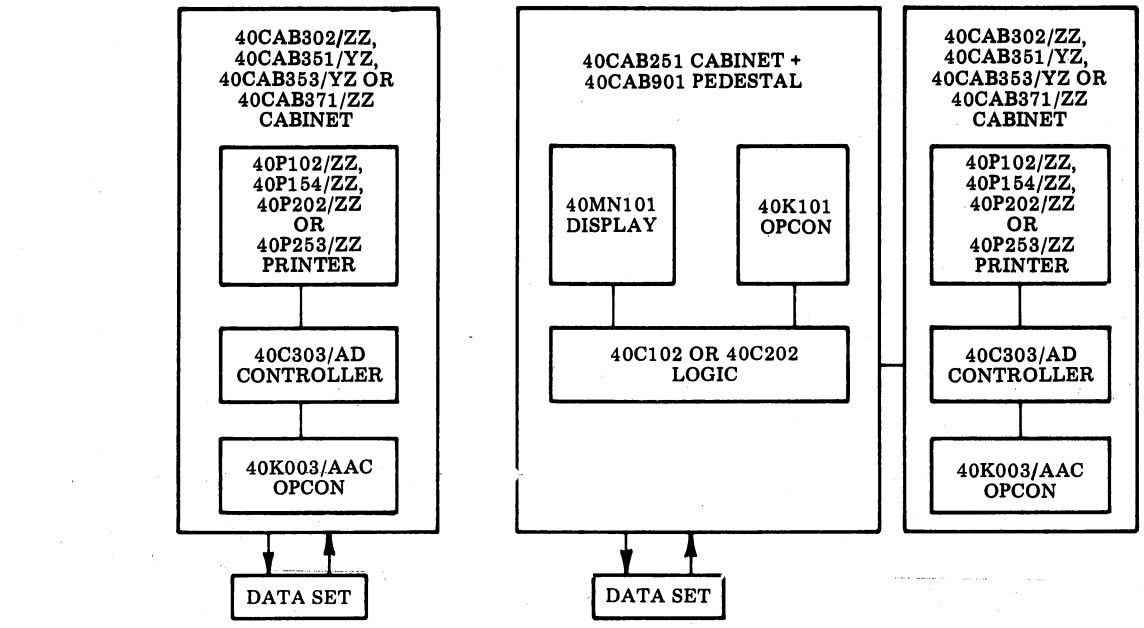
1.13 The arrangements shown in Fig. 1 reflect the recommended combination of equipment. The following substitutions may be made at a loss of some features (refer to Section 582-200-204 for feature comparisons):

Controllers — The use of the 40C303/AA/001 integrated asynchronous controller instead of the 40C303/AD integrated asynchronous controller requires that either a 40K001/AAA or a 40K004/-AAA opcon be used.

Printers — Tractor feed printers 40P153/ZZ and 40P201/ZZ may be used instead of tractor feed printer 40P154/ZZ and 40P202/ZZ.

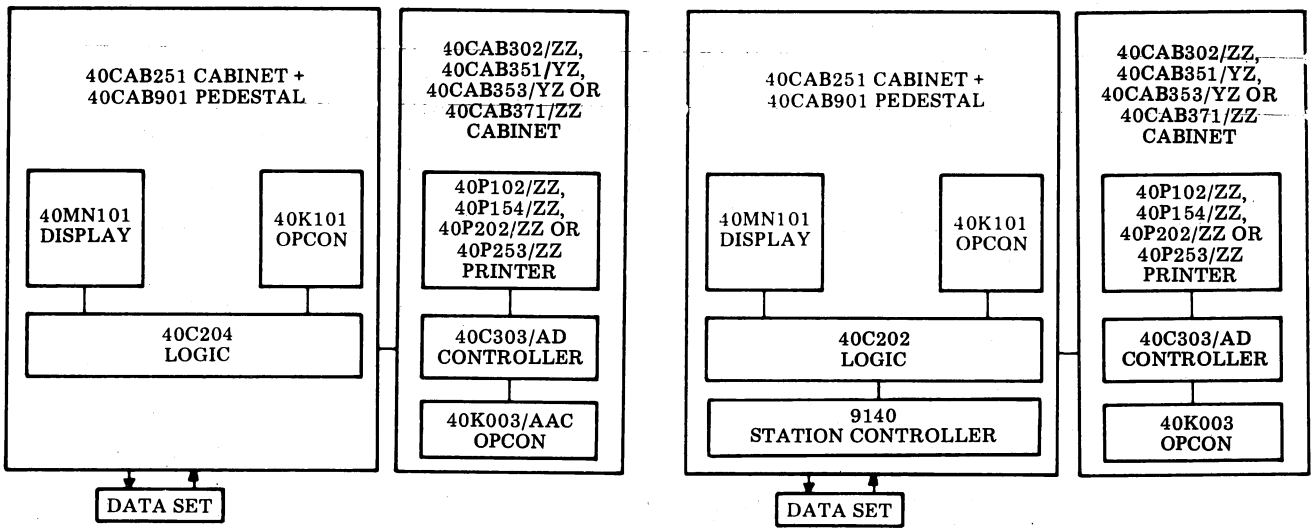
Cabinets — Cabinets 40CAB351/ZZ and 40CAB-353/ZZ may be used instead of cabinets 40CAB-351/YZ and 40CAB353/YZ; however, it is necessary that the 40CAB351/ZZ and 40CAB-353/ZZ cabinets have a 1-inch by 5-inches cut out in the lower left rear corner rather than a 1-inch by 2-1/2 inch cut out.

1.14 When only the 40C303/AA/001 integrated asynchronous controller of a terminal is to be replaced by a 40C303/AD integrated asynchronous controller it is necessary to employ 406207 modification kit.



Integrated
DATASPEED 40/1, 40/2,
or 40/3 ROP Station

Integrated
DATASPEED 40/1
KD-ROP Station



Integrated
DATASPEED 40/2
KD-ROP Station

Integrated
DATASPEED 40/3
KD-ROP Station

Fig. 1—Integrated Asynchronous ROP Station Configurations

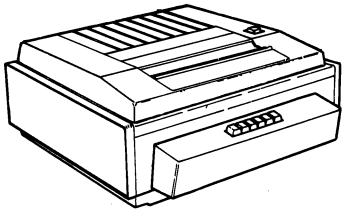
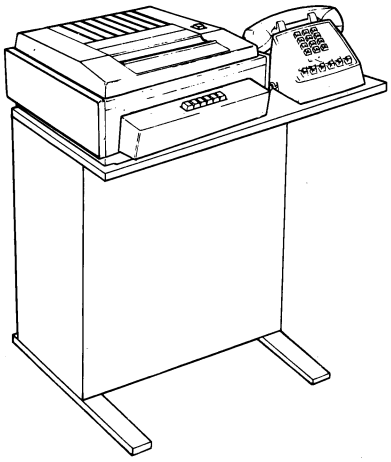


Table Top Friction Feed
RO Printer (Noise-Reduced)

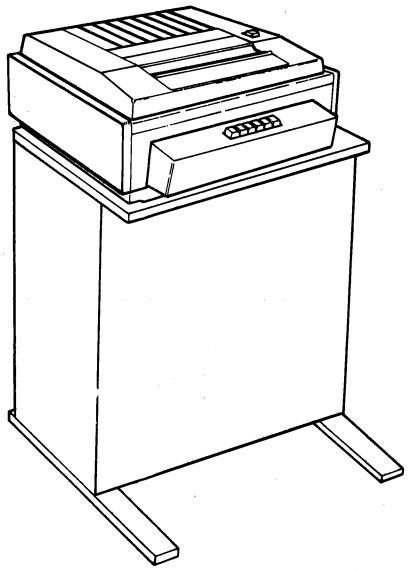
Private Line or Switched
Network Applications

USOC 400++ (See Note 2)



Friction Feed RO Printer With
24-1/2" Pedestal and 29" Top — Switched
Network Applications

USOC 400++ (See Note 2) +4TMBA



Friction Feed RO Printer With
24-1/2" Pedestal and 24-1/2" Top —
Private Line Applications

USOC 400++ (See Note 2) + 4TMAA

Note 1: All pedestals are empty except for convenience strip and cable rack.

Note 2: 1st Suffix Application
1+ — 40/1 Service (40C303AA/001 Controller)
2+ — 40/2 Service (40C303AA/001)Controller)
3+ — 40/3 Service (40C303AA/001 Controller)
4+ — 40/1 Service (40C303AD Controller)
5+ — 40/2 Service (40C303AD Controller)
6+ — 40/3 Service (40C303AD Controller)

2nd Suffix Application
+A — Monocase ASCII
+F — Up-Low ASCII

Fig. 2—80-Column Noise-Reduced Friction Feed Receive Only Printer
Pedestal and Cabinet Arrangements

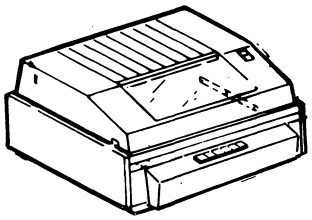
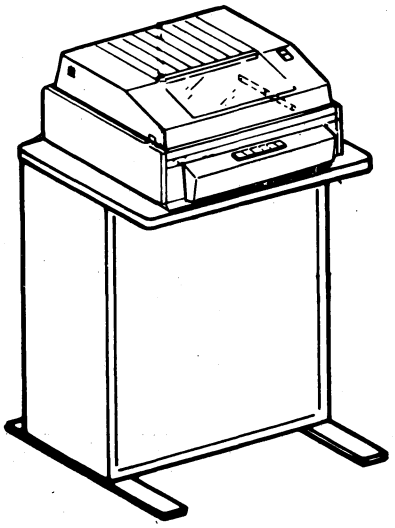


Table Top Tractor Feed
RO Printer

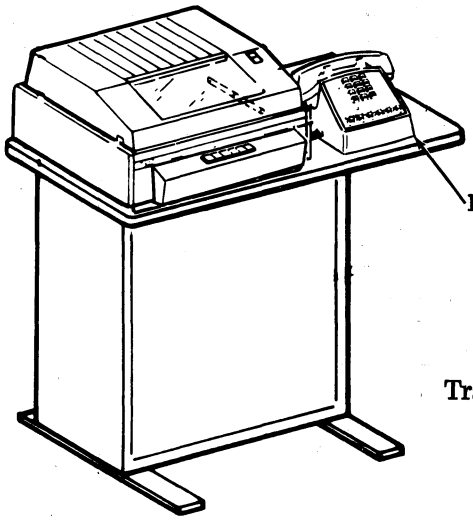
Private Line or Switched
Network Applications

USOC 40P++ (See Note 2)



Tractor Feed RO Printer With
24-1/2" Pedestal and 24-1/2" Slotted Top —
Private Line Applications

USOC 40P++ (See Note 2) + 4TMCB



DATA SET AND/OR
TELEPHONE

Tractor Feed RO Printer With 24-1/2" Pedestal
and 31-1/2" Slotted Top — Switched
Network Applications

USOC 40P++ (See Note 2) + 4TMCB

Note 1: All pedestals are empty except for convenience strip and cable rack.

Note 2: 1st Suffix Application
1+ — 40/1 Service (40C303AA/001 Controller)
2+ — 40/2 Service (40C303AA/001 Controller)
3+ — 40/3 Service (40C303AA/001 Controller)
4+ — 40/1 Service (40C303AD Controller)
5+ — 40/2 Service (40C303AD Controller)
6+ — 40/3 Service (40C303AD Controller)

2nd Suffix Application
+A — Monocase ASCII
+F — Up-Low ASCII

Fig. 3—80-Column Tractor Feed Receive-Only Printer
Pedestal and Cabinet Arrangements

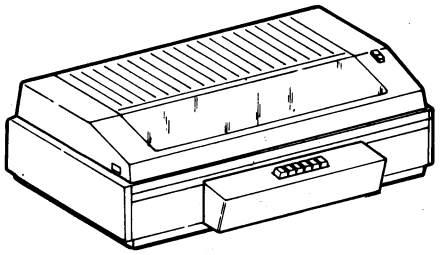
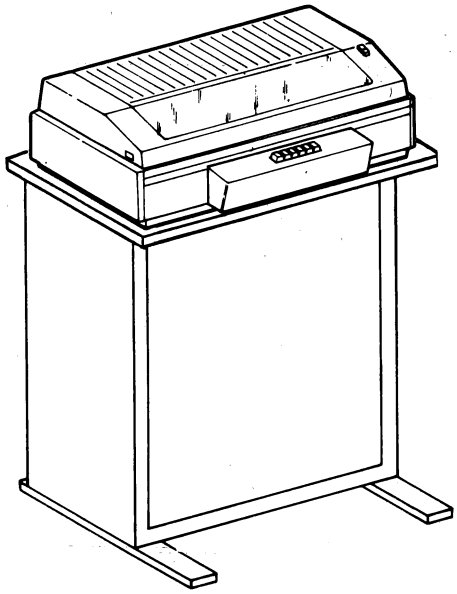


Table Top Tractor Feed RO Printer

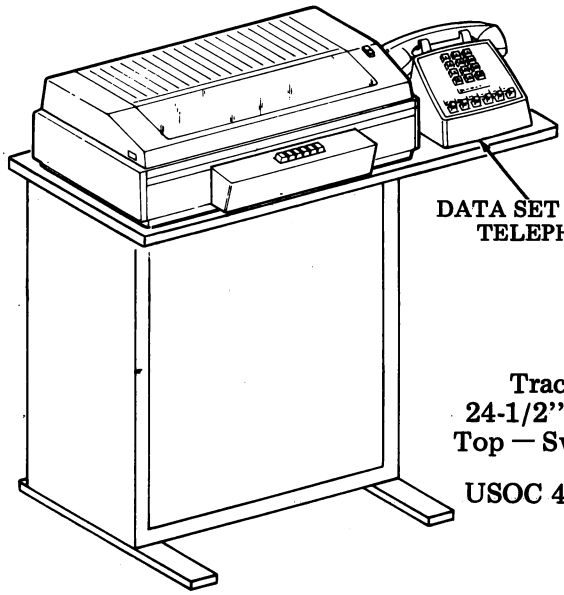
Private Line or Switched
Network Applications

USOC 40R++ (See Note 2)



Tractor Feed RO Printer With 24-1/2"
Pedestal and 27-5/8" Slotted Top —
Private Line Applications

USOC 40R++ (See Note 2) + 4TMEC



Tractor Feed RO Printer With
24-1/2" Pedestal and 39-1/8" Slotted
Top — Switched Network Applications

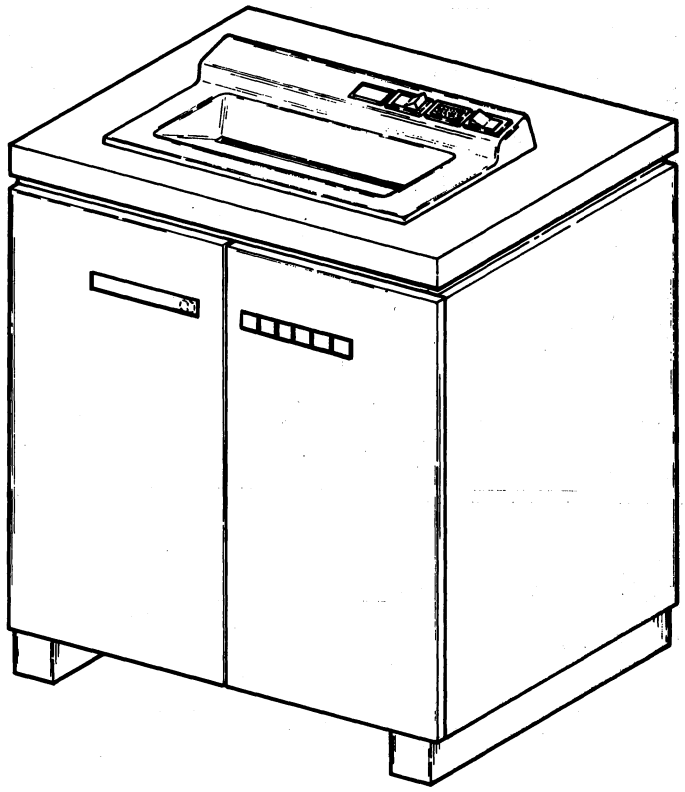
USOC 40R++ (See Note 2) + 4TMFC

Note 1: All pedestals are empty except for convenience strip and cable rack.

Note 2: 1st Suffix Application
1+ — 40/1 Service (40C303AA/001 Controller)
2+ — 40/2 Service (40C303AA/001 Controller)
3+ — 40/3 Service (40C303AA/001 Controller)
4+ — 40/1 Service (40C303AD Controller)
5+ — 40/2 Service (40C303AD Controller)
6+ — 40/3 Service (40C303AD Controller)

2nd Suffix Application
+A — Monocase ASCII
+F — Up-Low ASCII

Fig. 4—132-Column Tractor Feed Receive-Only Printer
Pedestal and Cabinet Arrangements



Forms Access RO Printer Private
Line or Switched Network Applications

USOC 4EQ++ (See Note)

Note: 1st Suffix Application

4+ — 40/1 Service (40C303AD Controller)
5+ — 40/2 Service (40C303AD Controller)
6+ — 40/3 Service (40C303AD Controller)

2nd Suffix Application
+A — Monocase ASCII
+F — Up-Low ASCII

Fig. 5—80-Column Forms Access Receive
Only Printer Arrangement

TABLE A

DATASPEED 40 ROP DATA SET INTERFACE

FOR A 40C303/AD INTEGRATED ASYNCHRONOUS CONTROLLER

DUAL CONNECTOR LEAD DESIGNATIONS			
PIN NO.	EIA CONNECTOR	PIN NO.	AUXILIARY CONNECTOR
1	Protective Ground (AA)	1	Protective Ground (AA)
2	Transmitted Data (BA)	2	Transmitted Data (BA)
3	Received Data (BB)	3	Received Data (BB)
4	Request to Send (CA) } May be strapped together in	4	Request to Send (CA) } May be strapped together in
5	Clear to Send (CB) } 108- and 113A-type data set.	5	Clear to Send (CB) } 108- and 113A-type data set
6	Data Set Ready (CC)	6	Data Set Ready (CC)
7	Signal Ground (AB)	7	Signal Ground (AB)
8	Data Carrier Detector (CF)	8	No Connection
9	No Connection	9	No Connection
10	No Connection	10	No Connection
11	Supervisory Transmitted Data SCA1 — 202-type data set only§	11	No Connection
12	Supervisory Received Data (SF) — 202-type data set only	12	No Connection
13	No Connection	13	No Connection
14	No Connection	14	20/60 mA +Received ‡
15	Transmit Clock (DB)	15	No Connection
16	No Connection	16	20/60 mA — Receive ‡
17	Receive Clock (DD)	17	No Connection
18	No Connection	18	No Connection
19	No Connection	19	No Connection
20	Data Terminal Ready (CD)	20	Data Terminal Ready (CD)
21	No Connection	21	No Connection
22	Ring Indicator (CB)	22	No Connection
23	Alarm ‡	23	20/60 mA +Transmit ‡
24	No Connection	24	No Connection
25	No Connection	25	20/60 mA — Transmit ‡

Cinch or Cannon Plug — DB-19604-432

‡Non EIA leads.

§RS-232-C uses pin 19 as SA. In 202-type data sets pin 19 may be strapped to pin 11.

Data and control circuits in accordance with EIA RS-232-C.

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

TABLE B

"DATASPEED" 40 ROP DATA SET INTERFACE

FOR A 40C303/AA/001 INTEGRATED ASYNCHRONOUS CONTROLLER

PIN NO.	LEAD DESIGNATIONS
1	Protective Ground (AA)
2	Transmitted Data (BA)
3	Received Data (BB)
4	Request to Send (CA) } May be strapped together in 108- and
5	Clear to Send (CB) } 113A-type data set.
6	Data Set Ready (CC)
7	Signal Ground (AB)
8	Data Carrier Detector (CF)
9	No Connection
10	No Connection
11	Supervisory Transmitted Data (SA) — 202-type data set only§
12	Supervisory Received Data (SB) — 202-type data set only
13	No Connection
14	20/60 mA Transmit + (with respect to pin 7)
15	20/60 mA Receive +
16	No Connection
17	20/60 mA Receive -
18	No Connection
19	No Connection
20	Data Terminal Ready (CD)
21	No Connection
22	Ring Indicator (CD)
23	Alarm*
24	No Connection
25	No Connection

Cinch or Cannon Plug — DB-19604-432

*Non EIA leads.
§RS-232-C uses pin 19 as SA. In 202-type data sets pin 19 may be strapped to pin 11.

Data and control circuits in accordance with EIA RS-232-C.

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

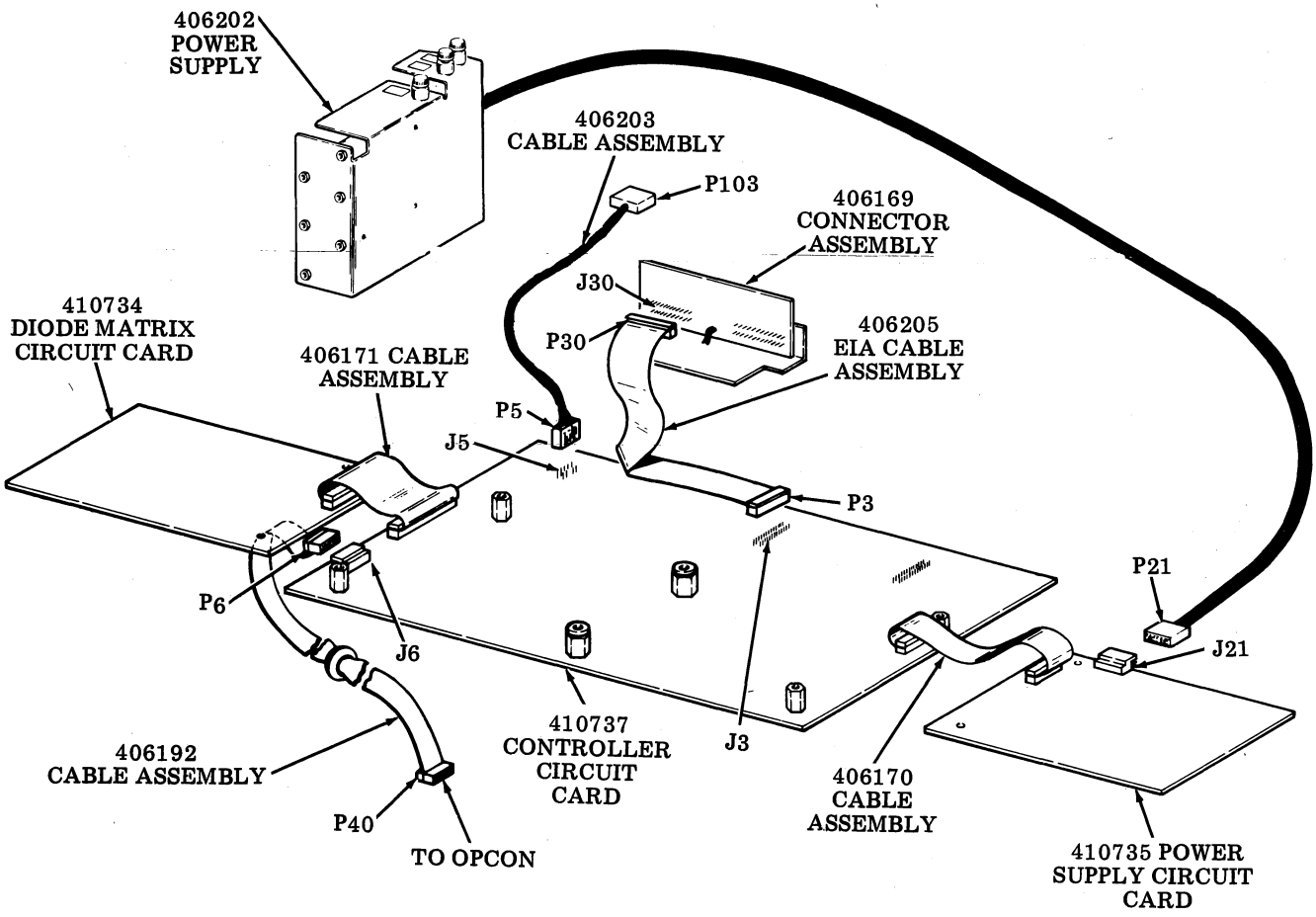


Fig. 6—40C303/AD Integrated Asynchronous Controller and Associated Cables for Friction Feed Applications (Cover Not Shown)

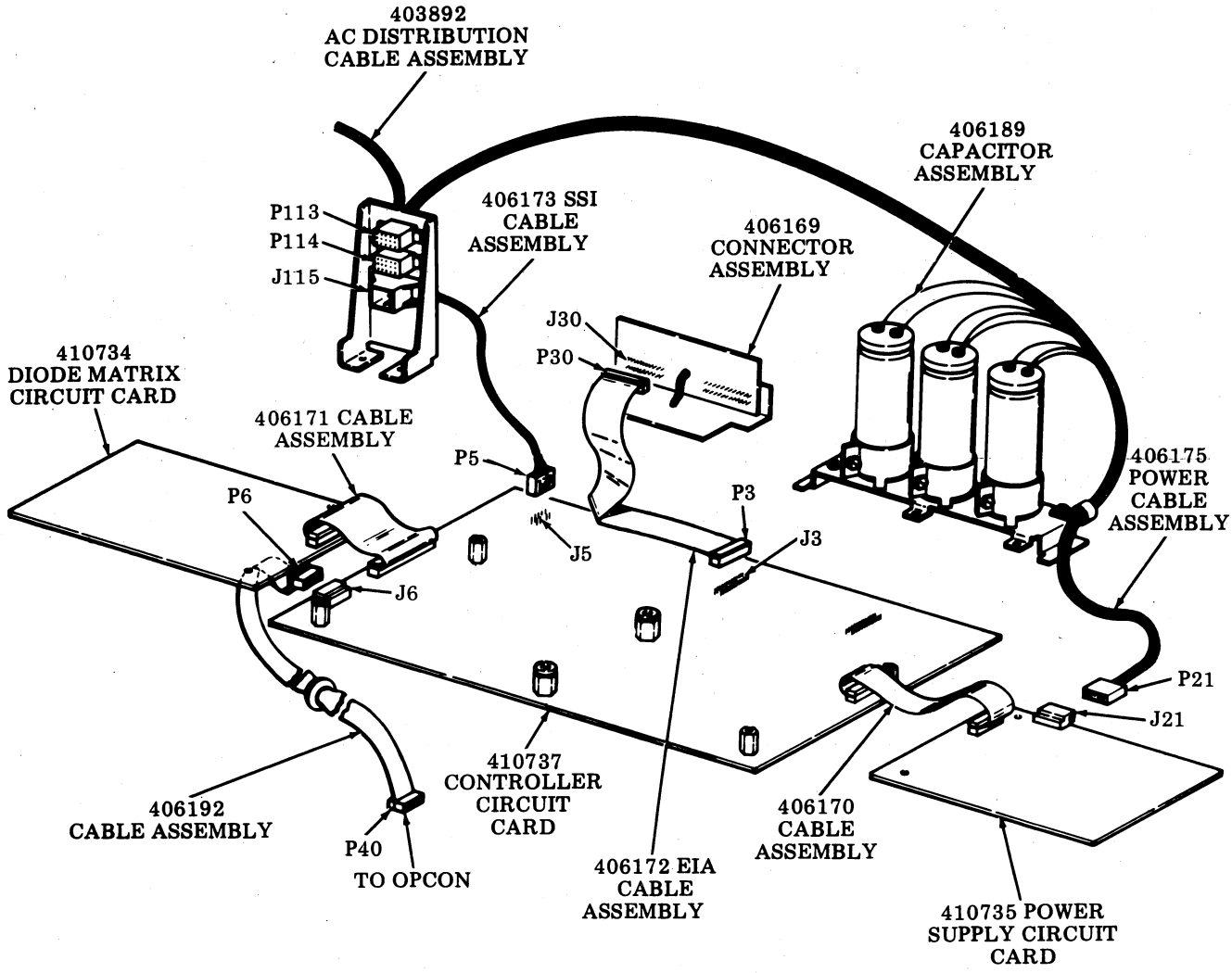


Fig. 7—40C303/AD Integrated Asynchronous Controller and Associated Cables for Tractor Feed Applications (Cover Not Shown)

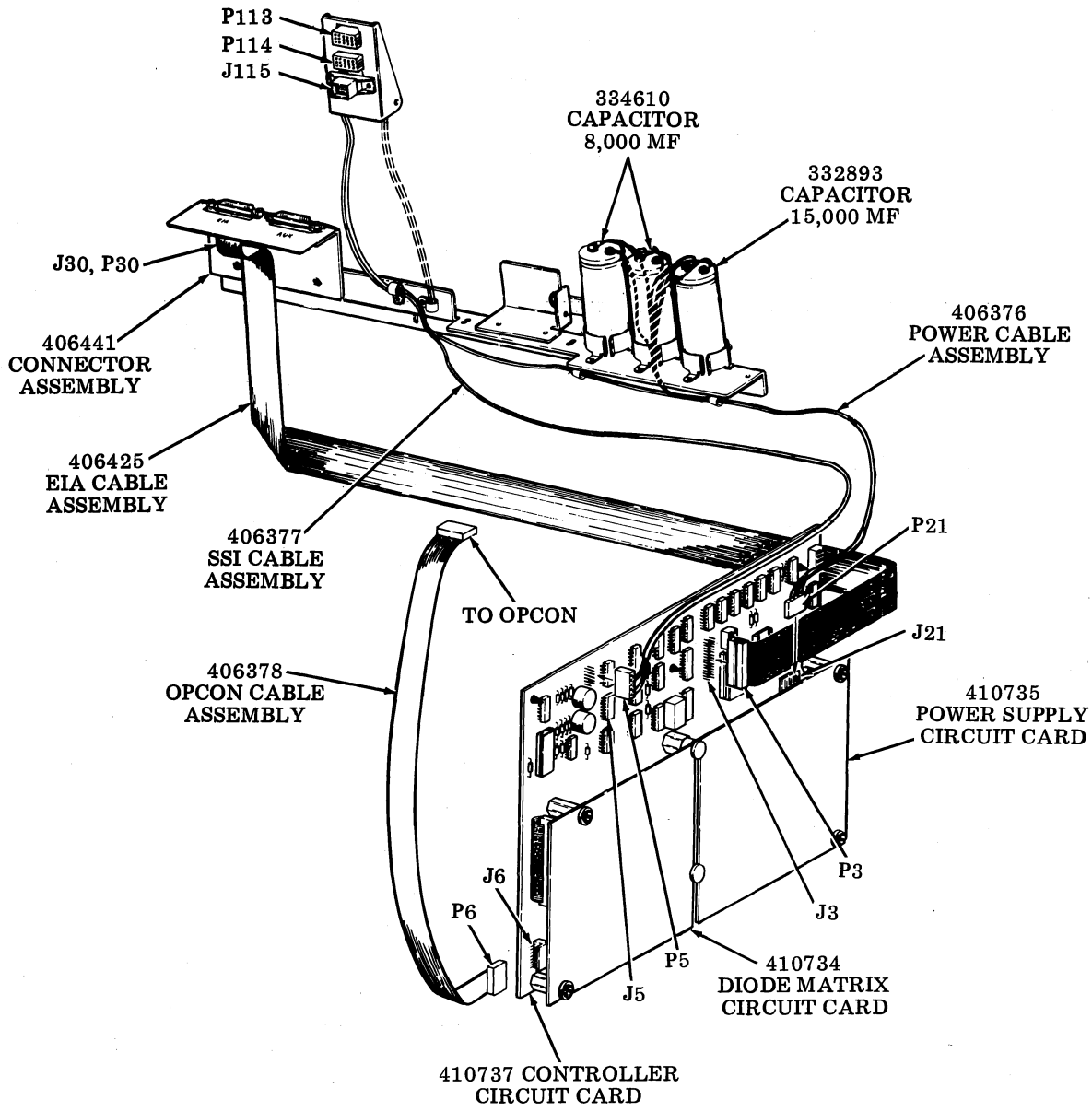


Fig. 8—40C303/AD Integrated Asynchronous Controller and Associated Cables for Forms Access Arrangements (Cover Not Shown)

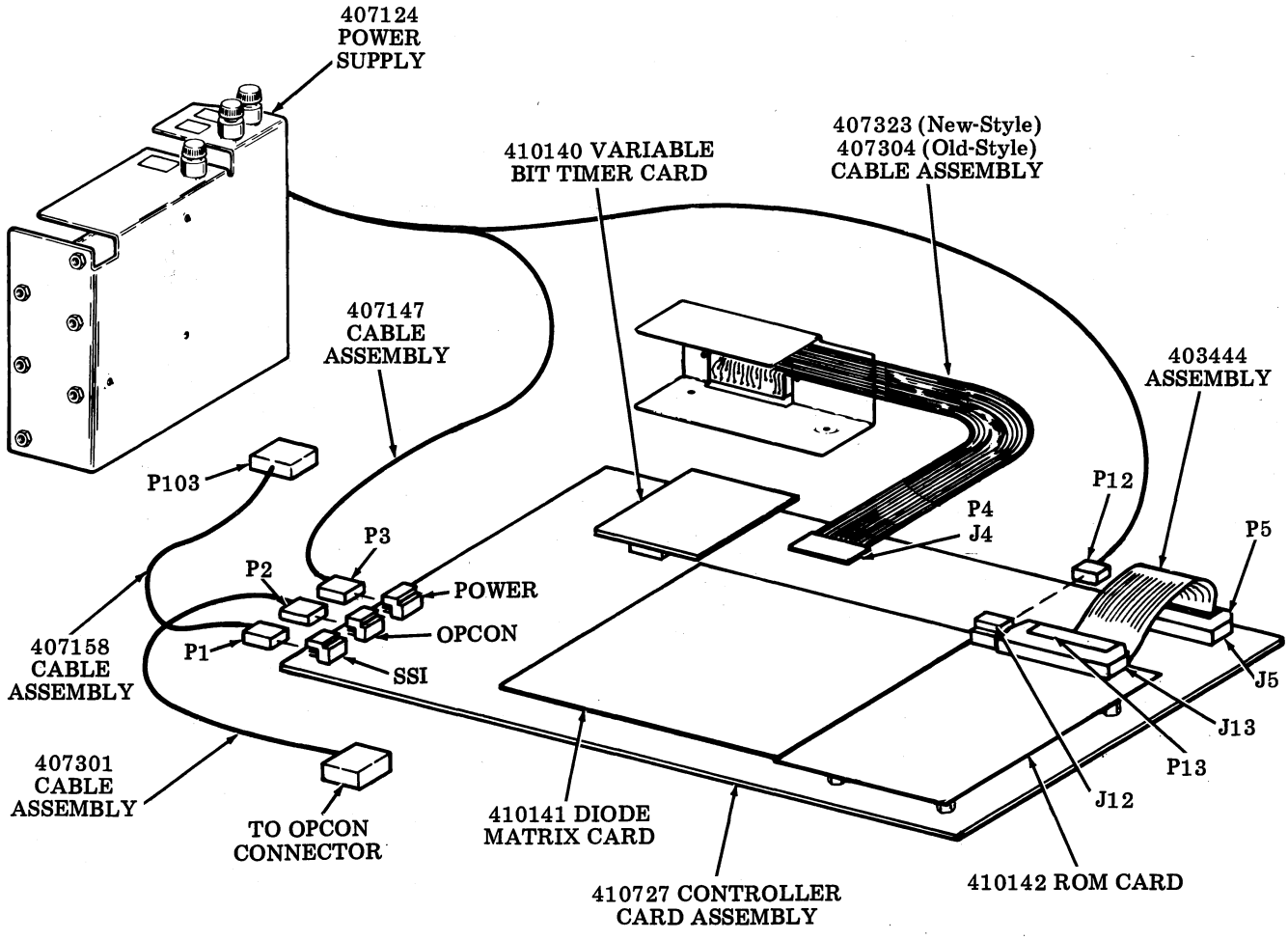


Fig. 9—40C303/AA/001 Integrated Controller and Associated Cables for Friction Feed Application (Cover Not Shown)

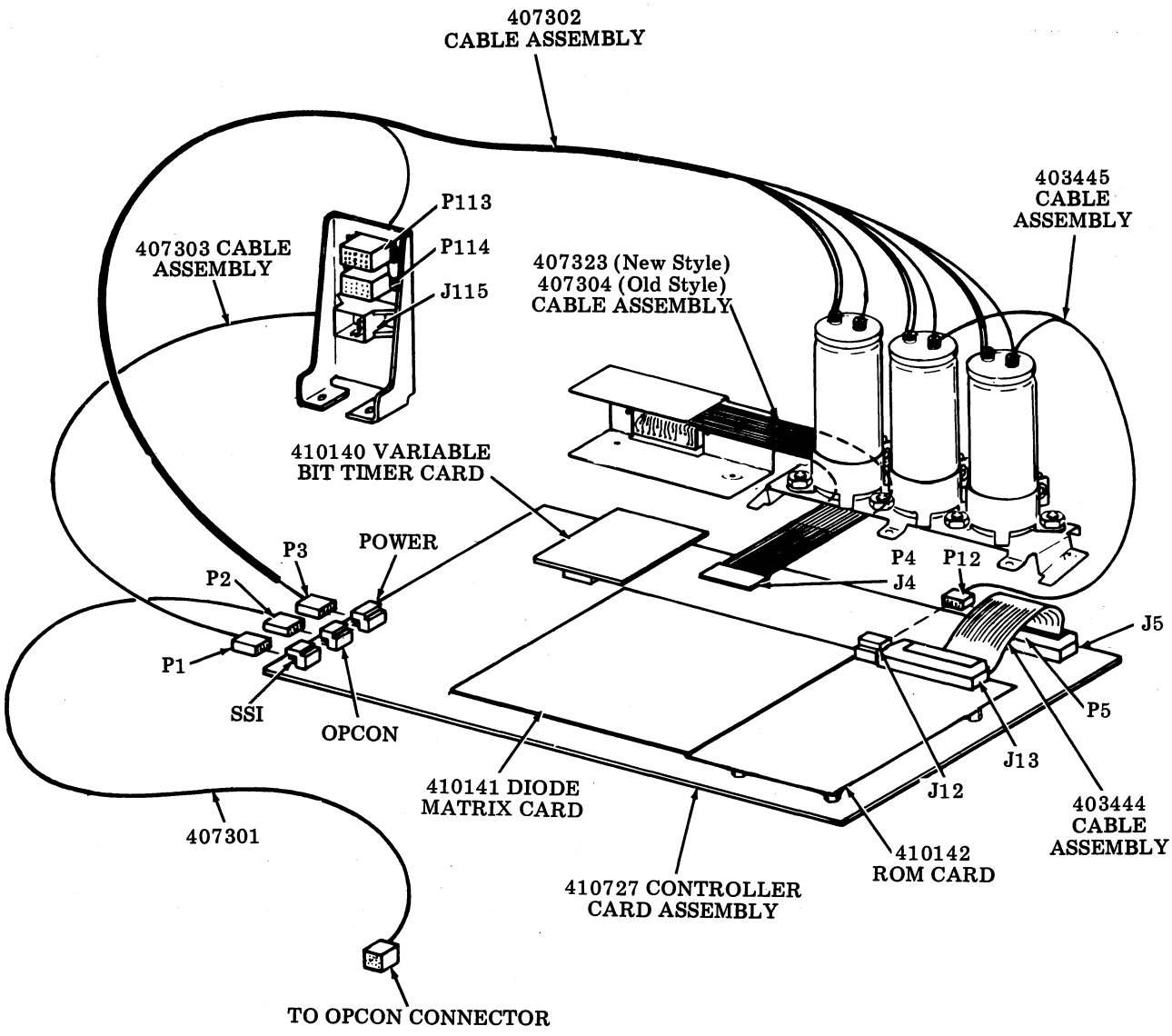


Fig. 10—40C303/AA/001 Integrated Asynchronous Controller and Associated Cables for Tractor Feed Applications (Cover Not Shown)

2. TECHNICAL DATA

2.01 Power Source Requirements: 104-127 V ac 60 Hz ±0.5 Hz or 50 Hz ±0.5 Hz from an unswitched standard 3-wire grounding type receptacle located within 8 feet of the ROP set location. One additional receptacle is required for data set except when terminal includes pedestal equipped with 7-receptacle convenience strip.

2.02 Maximum Inrush Current: 25 amps not exceeding three half cycles.

2.03 Operating Power Consumption and Heat Generation:

Component	Current	Power	Heat
Integrated ROP Set (motor OFF)	1.0 Amp	115 Watts	392 BTU
Integrated ROP Set (motor ON)	2.0 Amps	230 Watts	784 BTU

2.04 Environmental Restrictions (operating):

Ambient Temperature.....+40° to +110°F
Relative Humidity...5% to 95% (noncondensing)
Altitude..... Sea level to 10,000 feet

2.05 Weight (approximate) Unpacked:

Friction Feed Printer.....40 lbs
Friction Feed Printer Cabinet (Noise Reduced).....40 lbs
80-Column Tractor Feed Printer.....41 lbs
80-Column Tractor Feed Printer Cabinet.....43 lbs
132-Column Tractor Feed Printer.....56 lbs
132-Column Tractor Feed Printer Cabinet.....53 lbs
Forms Access Printer Cabinet.....111 lbs
Pedestal.....56 lbs
Data Set .....Up to 14 lbs (depending on type)

3. FEATURE COMPARISON

3.01 The features of the printer, cabinet, and opcon of integrated ROP stations are the same as for previous ROP stations, except for the addition of the 132-column printer (not previously available for ROP stations equipped with 40C103 type controllers). Many more features are provided by the integrated controller, however. These features are summarized in Table C.

TABLE C

INTEGRATED ROP CONTROLLER FEATURES

A. General Integrated RO Controller Features

FEATURE	DESCRIPTION
Interface	EIA RS-232-C
Speed of Operation	110, 150, 300, 600, 1050, 1200, 1800, 2100, 2400, 3000, 3600, or 4800 baud asynchronous field selectable. The 40C303/AD controller can be operated isochronously at speeds up to 4800 baud.
Code	10- or 11-unit ASCII with no parity, even parity, or odd parity field selectable. *Note:* Normally, 110 baud operation uses 11-unit characters while 150 through 4800 baud operation uses 10-unit characters.
Storage Buffer	•Built-in buffer standard. •Approximately 4000 characters capacity for 40C303/AD controller. (40C303/AA/001 controller has an 825 character buffer.) •No overwrite or overfill; data stacking begins as soon as buffer becomes full.

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

A. General Integrated RO Controller Features (Cont)

FEATURE	DESCRIPTION
Horizontal Tabulation Option	• From 2 to 132 column positions. • Fixed via optioning and/or set (ESC 1) and cleared (ESC 2) on-line. ESC 2 clears all tabs at and to the right of the point entered. A disconnect (or deselect) clears all on-line tabs and restores preselected tab stops, if any. Tabs can be preselected only, on-line only, or both together.
Vertical Tabulation Option	• From 2 to 72 preselected line positions. • Up to 132 on-line line positions. • Fixed via optioning and/or set (ESC 5) and cleared (ESC 6) on-line. ESC 6 clears all tabs at and below the point entered. As with horizontal tabulation, a disconnect or deselect clears all on-line tabs and restores any pre-selected tab stops. Also, tabs can be preselected only, on-line only, or both together.
Escape Sequence Response	Printing of escape sequences suppressed (option).
Adjustable Left Margin	Left margin electrically selectable up to any column position.
Pulse Output or Audible Alarm	Pulse output or tone generated on receipt of BEL character and on paper-out (option). Tone requires a 403418 audible alarm modification kit for 40C303/AA/001 applications. For 40C303/AD controller applications, the alarm is part of opcon 40K003/AAC or 40K005/AAC.
Delayed Motor Turnoff	Motor turnoff delayed approximately 45 seconds or approximately 2 minutes after end of transmission from sender or idle line (option). There is no option to turn off motor immediately upon end of transmission (except upon recognition of disconnect character(s) in switched network operation, provided minimum motor turnoff delay is selected). If additional characters are received following a motor turnoff without a disconnect or deselect, motor will turn on again as soon as first character enters buffer.
On-Line Printer Control Option	DC4 blinds printer; DC2 unblinds printer.
New Line on Received CR Option	Receipt of CR optionally causes CR and LF or CR.
Paper/Terminal Alarm Option	Paper alarm response (disconnect or deselect) delayed until new switched network call received or multipoint private line CDC detected (friction feed printer)/not delayed (tractor feed printer) — call disconnected or deselected immediately upon receipt of paper alarm signal (may be delayed with tractor feed printer — Option 48).

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

A. General Integrated RO Controller Features (Cont)

FEATURE	DESCRIPTION
Dual Operating Speed (40C303/AD Only)	The 40C303/AD controller can be used to interface to a 212A type data set at both high and low speeds or to a DATASPEED 40 KD (KD-ROP operation) at 1200 baud and to the transmission line at one of the other selectable speeds. The 40C303/AA/001 controller can be interfaced to a KD for KD-ROP operation at only one speed.
Line Wraparound Option	Line Wraparound performed by either printer or controller.

B. 40/1 (Switched Network Operation) Features

FEATURE	DESCRIPTION
Data Set Compatibility	Can be used with Data Set 202SR, 212AR, (40C303/AD Only) or equivalent.
40/1 Compatibility	On-line compatible with all 40/1 stations.
Answer-Back	•Optional 16-character answer-back started on either automatic answer or receipt of ENQ standard (separate answer-back unit not required). •Optional local copy of answer-back.
Reverse Channel Send and Receive	•Reverse channel send and receive (SCA and SCF) not required in data set. •If reverse channel is used, reverse channel receive required to send answer-back. •Manually depressing INTRPT key on opcon turns off reverse channel send.
Disconnect Options	Optional disconnect on: •DLE EOT or EOT •30-second idle line •No carrier for 15 seconds •Paper alarm •Internal terminal trouble (loss of signals at printer-controller interface).
Buffer 75% Full Indication	An indication that buffer is 75% full (or more) is provided. This indicates a storage of approximately 2925 (40C303/AD) or 640 (40C303/AA/001) characters. Reverse channel send is turned off until buffer is down to 25% full again or call is disconnected.
Form Feed on Disconnect	An additional paper advance on disconnect is available. All ROP terminals have an option (part of printer) to enable automatic paper feed-out of 16 lines on recognition of

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

B. 40/1 (Switched Network Operation) Features (Cont)

FEATURE	DESCRIPTION
Form Feed on Disconnect (Cont)	disconnect or, optionally, on recognition of ETX character (or not at all). With tractor feed printers this option should be changed by the operator to provide form-out on disconnect if form is out of register, since 16-line feed-out will be erratic (form-out overrides it). In place of this option a Form Feed character is sent to printer on disconnect in integrated ROP terminals. This provides uniform paper registration for each new message. Since form feed is nonrepeating until new form has advanced at least one line, only one form feed will occur even if a FF character appeared at end of message. In friction feed printers this FF character will cause a line feed to occur.
3-Second Answer-Back Delay After Clear to Send or ENQ (40C303/AD Only).	Answer-Back is delayed for 3-seconds after Clear-to-Send (CTS) is received from the data set or ENQ is received on-line. This feature is applied through the use of the 453936 modification kit.

C. 40/2 (Teletypewriter Compatible Operation) Features

FEATURE	DESCRIPTION
Data Set Compatibility	Can be used with: Data Set 103JR; Data Set 113AR; Data Set 202SR and Data Set 212AR (40C303/AD only) or equivalent.
40/2 KD and KDP Compatibility	On-line compatible with Teletypewriter Compatible (40/2) KD and KDP stations.
Reverse Channel Send and Receive	•Reverse channel send and receive (SCA and SCF) not required in data set. •If reverse channel is used, reverse channel receive required to send answer-back. •Manually depressing INTRPT key on opcon turns off reverse channel send.
Disconnect Options	Optional disconnect: •DLE EOT or EOT •30-second idle line •No carrier for 30 seconds •Paper alarm •Internal terminal trouble (loss of signals at printer-controller interface).

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

C. 40/2 (Teletypewriter Compatible Operation) Features (Cont)

FEATURE	DESCRIPTION
Buffer 75% Full Indication	An indication that buffer is 75% full (or more) is provided. This indicates a storage of approximately 3000 (40C303/AD) or 640 (40C303/AA/001) characters. Reverse channel send is turned off until buffer is down to 25% full again or call is disconnected.
Form Feed on Disconnect	An additional paper advance on disconnect is available. All ROP terminals have an option (part of printer) to enable automatic paper feed-out of 16 lines on recognition of disconnect or, optionally, on recognition of ETX character (or not at all). With tractor feed printers this option should be changed by the operator to provide form-out on disconnect if form is out of register, since 16-line feed-out will be erratic (form-out overrides it). In place of this option a Form Feed character is sent to printer on disconnect in integrated ROP terminals. This provides uniform paper registration for each new message. Since form feed is nonrepeating until new form has advanced at least one line, only one form feed will occur even if a FF character appeared at end of message. In friction feed printers this FF character will cause a line feed to occur.
3-Second Answer-Back Delay After Clear to Send or ENQ (40C303/AD Only)	Answer-back is delayed for 3-seconds after Clear-to-Send (CTS) is received from the data set or ENQ is received on-line. This feature is applied through the use of the 453936 modification kit.

D. 40/3 (Multipoint Private Line Operation)Features

FEATURE	DESCRIPTION
Data Set Compatibility	Can be used with Data Sets 108D, 108E, 202T or equivalent.
Calling-Directing Codes (CDCs)	Three 1- or 2-character CDCs detected. Each is fully field selectable and may be optioned to be followed by DELETE.
1 of 3 Answer-Backs (ABs) Sent Following a CDC	AB 1: Positive response (R_1R_2) AB 2: Terminal alarm response (R_3R_3) AB 3: Data error response (R_4R_4) (Requires enabling an option on the 40C303/AD controller).

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

D. 40/3 (Multipoint Private Line Operation) Features (Cont)

FEATURE	DESCRIPTION
1 of 3 Answer-Backs (ABs) Sent Following a CDC (Cont)	Answer-back (AB 3) will be sent to indicate that buffer is not empty at time CDC is detected (ROP still printing previous message). If roll call feature is used, AB 3 will indicate that either a vertical parity error was detected during the message or buffer became full at some time during the message. All answer-backs are fully field selectable. The use of AB 3 on 40C303/AA/001 controllers is always supplied except when the controller is modified with 406211 modification kit. The use of AB 3 is controlled by an option on 40C303/AD controllers. If AB 3 is not used then the terminal will reply with AB 1 following detection of a CDC with characters in the buffer (no alarm condition existing); AB 1 will also be sent rather than AB 3 replies for Roll Call applications. The use of AB 3 on initial addressing replies and roll call replies may be optioned independently of each other (see Option 153).
No Answer-Back Sent for Group and Broadcast CDCs (Option)	CDC 1 (Individual): Always answer-back. CDC 2 (Group or Broadcast): Answer-back optional. CDC 3 (Group or Broadcast): Answer-back optional.
Single Character Answer-Back Option	Answer-back responses may optionally be single character instead of two characters.
Answer-Back to CDC Delay Options	Answer-backs to CDCs may be delayed by: (1) No delay after Clear to Send ON from data set (for AB 1, AB 2, or AB 3). (2) Fixed 180 milliseconds (for AB 1, AB 2, or AB 3). Used when required for data set turnaround timing or on-line compatibility with Option 21.b. of 9140. (3) Time necessary for printer to signal that it is ready to accept a character — motor up to speed and type carrier flag detected (replaces Option 21.a. of 9140 for AB 1 only; AB 2 and AB 3 are delayed as selected in (1) or (2)). This corresponds to the fixed two-second delay option of 9140, but the new delay will usually be much shorter, perhaps less than 1-second. In all three cases motor is turned on immediately upon detection of CDC.
Field Selectable Start of Heading and Start of Text	Start of Heading and Start of Text characters are fully field selectable (normally coded for the ASCII characters SOH and STX).

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

D. 40/3 (Multipoint Private Line Operation) Features (Cont)

FEATURE	DESCRIPTION
Copy Text Before or After Start of Heading/Start of Text Character Received	Normally, detection of a Start of Heading or Start of Text character is required to unblind printer to copy text. However, an option to start copying after a positive answer-back to a CDC is available. Once enabled, ROP will copy before Start of Heading or Start of Text provided it answers back to the CDC.
Deselection Code Options	The station may be deselected (ROP blinded) on a fully field selectable End of Transmission character and on either EOT or a DLE EOT code (option). A field selectable EOT was not available with 9140 (through an additional deselect character, ETX, could be obtained by special modification), and a DLE EOT sequence could not be specified instead of EOT alone. (A received line break also deselects, as with 9140.)
Roll Call (Post-Message Recall)	Controller recognizes Interrupt character (fully field selectable) after receiving message, blinds printer, and monitors line for CDCs. Upon detection of CDC 1, sends: AB 1 — received entire message with no errors AB 2 — went out-of-service or had terminal alarm during message (with or without vertical parity errors) AB 3 — received entire message but with one or more vertical parity errors, or buffer became filled during message depending on what it received. The interrupt mode is terminated by a deselection code in this case.
Full Duplex Interrupt	In full duplex (simultaneous send and receive) systems, the Interrupt character is used to blind the printer to TSCs. Either of the characters selected as Start of Heading/Start of Text will terminate the interrupt mode.
Buffer 75% Full Indication	An indication that buffer is approximately 75% full (or more) is provided. This indicates storage of approximately 2925 (40C303/AD) or 640 (40C303/AA/001) characters. A continuous line break is generated to sending station until buffer is down to 25% full again or ROP is deselected by Data Communications Processor (requires full duplex data set).
Response to Loss of Ability to Receive	"Ability to Receive," as used here, corresponds to Data Terminal Ready, an EIA interface signal not used internally in integrated controller. It consists of the following indications: (1) terminal is in service, (2) printer is not in test mode, (3) no paper-out condition exists,

TABLE C (Cont)

INTEGRATED ROP CONTROLLER FEATURES

D. 40/3 (Multipoint Private Line Operation) Features (Cont)

FEATURE	DESCRIPTION
Response to Loss of Ability to Receive (Cont)	(4) printer connector is in place (SSI signals present), (5) motor is running at correct speed with type carrier initially synchronized to printer. When ability to receive is lost when copying a message, controller optionally: • Deselects/does not deselect station; • Generates/does not generate a 400 ms line break to Data Communications Processor.
Response to Detection of Vertical Parity Error	When a vertical parity error is detected when copying a message, the controller optionally: • Generates/does not generate a 400 ms line break to Data Communications Processor. If a line break is not generated, AB 3 will be sent in response to CDC 1 if the roll call feature is used.

4. REFERENCE BSP SECTIONS

Explanation of abbreviations used:

A & L	— Adjustments and Lubrication	RG	— Reference Guide
C	— Connections	RM	— Routine Maintenance
D	— Description	SI	— Supplementary Information
D & O	— Description and Operation	SS	— Summarizing Specification
D, R, & P	— Disassembly, Reassembly, and Parts	T & TS	— Testing and Troubleshooting
F	— Features	TO & SI	— Theory of Operation and Supplementary Information
I	— Installation		
I & C	— Installation and Connections	TP	— Test Procedures
M	— Maintenance	WD	— Wiring Diagrams
P	— Parts		

SECTION	EQUIPMENT COVERED	CONTENTS
582-200-104	Intergrated Asynchronous DATASPEED 40 ROP	D
-204		I
-404		WD
-504		T & TS
-704		D, R, & P
-754		RM
570-005-800	Tools	P
582-200-100	DATASPEED 40/1 Station	D
-200		I
-400		WD
-500		T & TS
-700		D, R, & P
-750		RM
582-200-102	DATASPEED 40/2 Station	D
-202		I
-402		WD
-502		T & TS
-702		D, R, & P
-752		RM
582-200-103	DATASPEED 40/3 Station	D
-203		I
-403		WD
-503		T & TS
-703		D, R, & P
-753		RM
582-210-100	DATASPEED 40 Printers	D & O
-200		I
-400		WD
-500		T & TS
-700		A & L
-702		D, R, & P
-750		RM

SECTION	EQUIPMENT COVERED	CONTENTS
582-211-400 -500 -700	DATASPEED 40 Operator Consoles	WD T & TS D, R, & P
582-212-400 -700	DATASPEED 40 Cabinets	WD D, R, P, A & L