

Index**A**

Announcement - IBM Fiftieth Anniversary Model Typewriter 12
Announcement of the IBM Model 95 Typewriter With Extended Memory 22
APM Correction 8
APM Revisions 12

C

Cardholder Bracket Assembly - Redesigned 7
Carrier Yokes - Redesigned 5
Compression Washer Added on Rocker Pivot Shaft 4
Correcting Centered Heading 21
Correcting Tape Lift and Feed Cam - Flange Missing 3
Cycle Clutch Latch Support 15

D

Deleting Memory on 85/95 CMOS 33
Diagnostic Entry Procedure 8
Diagnostic Manual Revision 9, 13, 17, 39
Dropping Characters 65/85/95 PC - Attachment Device 33

E

Electrical Safety Precaution 4
Electronic Typewriter Diagnostic Tool (XTDT) 1
Electronic Typewriter Diagnostic Tool-II - Announcement 7
Escapement Control Board Capacitor - Handling Procedures 5
Escapement Knockoff Arm Return Spring - Redesigned 2
Escapement Magnet - Improved 28
Escapement Magnet - New Guard 28
Escapement Magnet Pawl Spring 12
ESD Cord Connection Point 37
Extended Memory Protection (CMOS) Model 85/95 22
Extended Memory Protection Announcements 21

I

IBM Diskette Module 40
IBM 65/85/95-PC Attachment Device 18
IBM 65/85/95-PC Attachment Device - Description, Theory of 19
Index Detent Roller Bracket - Washer Added 5
Index Emitter Board Part Number Substitution 41
Installation of Modularity Option or the +16K Board MES 30

K

Keyboard Edge Connector Failure 29
Keylever Restoring Spring Clip 12
Keystroke Counter B/M 41

L

Leadscrew Nut Adjustment Procedure 4
Leadscrew Pulley Breakage 21
Level III Processor Board 42
Level 1 Velocity Magnet no Longer Available 40

M

Margin Bell Rings or the Index Magnet Picks When Main Power 30
MES Announcements 12
MES Numbers and Typewriter Configurations 38
Message Control Panel Guard 30
Motor Hubs - Quality Improvements 3

N

Negative Cam Follower - Redesigned 2
New Diagnostic Flow Chart - Carrier Jammed Chart 31
New Version Software for 65/85/95 PC - Attachment Device 37

P

PC - Attachment Problem Isolation Chart 34
 Platen Override Clutch 6
 Platen Removal Procedure 31
 Power Supply Board 65/85/95 41
 Print Feedback Conversion - Early Level
 Demonstrators 6
 Print Feedback Switch Integrator B/M 2
 Print Shaft Cycle Clutch B/M - Redesigned 28
 Processor Board - New Level 16

R

Reliability 4
 Removal of Packing Spacers 13
 Replacement Procedure - Keyboard Bellcrank Mounting
 Bracket Screw 3
 Resident Diagnostics 13
 Risk of Electric Shock Due to Damaged Transformer
 Leads 18
 Rocker Return Spring - Wear Prevention Clip 15
 Rotate Rack Return Spring - Wear Prevention Clip 8

T

Tape Lift Cam Follower RCS Machines 18
 Technical Information Index 1
 Technical Publications Available 42
 Tilt Ring Pins Manufacturing Process Change 37

X

XTDT-II New Level Carrier Cable Support Box 29
 XTDT-II New Level EPROM 29

Y

Yoke Breakage - Ribbon Cassette Carrier 1

Numerics

65/85/95 Keyboard Assembly Separation - Defective
 Tenon 33

A complete set of current Electronic Typewriter CEMs consists of Combined Service Information booklet, CEMs starting on page 1, and the Technical Information Index.

237 SERVICE INFORMATION 7-29-81
Type(s): 6713, 6723 (US Only) (Revised) 1-26-83

SUBJECT: ELECTRONIC TYPEWRITER DIAGNOSTIC TOOL (XTDT)

PURPOSE:
To announce the Electronic Typewriter Diagnostic Tool.

INFORMATION:
The Electronic Typewriter Diagnostic Tool (XTDT) is designed to aid the CSR in diagnosing difficult or intermittent problems, and for use on High Service machines with excessive calls and/or unresolved problems. The Diagnostic tool is installed in place of the machine electronics, and may be used on Models 50/60/75. A series of tests may be selected by the CSR using the typewriter keyboard. A "Failure message" or "passed test" message will print out at the conclusion of each test.

The Electronic Typewriter Diagnostic Tool is especially helpful in diagnosing escapement, character substitution, keyboard, velocity, print feedback, and print shaft cycle clutch failures.

The "XTDT" is considered a Branch Office tool and is not intended to be used on every service call. Local CSD management will control and direct the use of the tool within the branch.

The "XTDT" is a restricted part (Code Q) and may only be ordered through local CSD B/O management. With the announcement of "XTDT-II" (Jan 83), orders for XTDT's are subject to availability.

The "XTDT" and User Guide are stored in a protective carrying case. The User Guide contains the necessary training and operating instructions, and safety precautions. The User Guide should be thoroughly understood by the CSR before attempting to use the Electronic Typewriter Diagnostic Tool.

NOTE: Usage of the XTDT must be reported as the last call reporting entry. Use Service Code 48 and Activity Code 58 each time the XTDT is used (58 is a new code).

247 RELIABILITY 12-2-81
Type(s): 6713, 6723 (Revised) 12-29-82

SUBJECT: YOKE BREAKAGE – RIBBON CASSETTE CARRIER

MACHINES AFFECTED:
Below approx. 6713 50/60 – 0192274, 75 – 3141667, 6723 50/60 – 2032147, 75 – 4010112

Poor print quality, especially of the underscore, may be caused by a crack in the yoke near the tilt ring pivot pins. (Figure 1)

If the yoke is found to be cracked, replace the rocker asm. (2-450: Part Number 1440310) rather than the carrier asm. A method of removing the rocker is as follows:

1. Remove cardholder bracket asm. (2-493).
2. Disconnect shift mode switch (3-309).
3. Loosen the rocker pivot shaft retaining screws (2-6, 2-404).
4. Remove rocker pivot shaft retaining "C"-clip (2-274).
5. Remove rocker return spring (2-313).
6. Slide rocker pivot shaft to the left until the shaft is out of the rocker asm. (2-272). [Holding the thrust washer (2-271)].
7. Remove the rocker asm. (2-450).
8. Install new rocker asm., reverse steps 1-6.
9. Check all related selection adjustments.

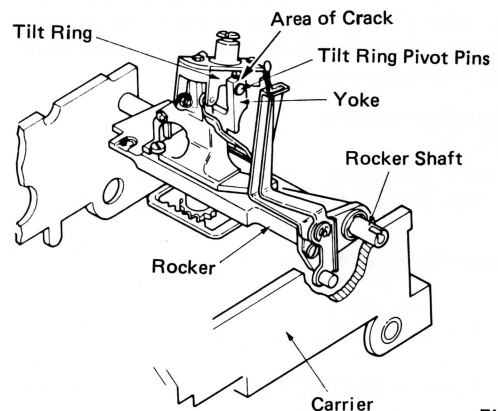


Figure 1

PARTS INFORMATION:
Greencastle stocks of yokes, rockers, and carriers have been replaced with inspected parts. Local parts centers have been instructed to return carriers, rockers and yokes and replace with new stock from Greencastle.

Estimated Install Time: .75 Hr.

Use Service Code 33

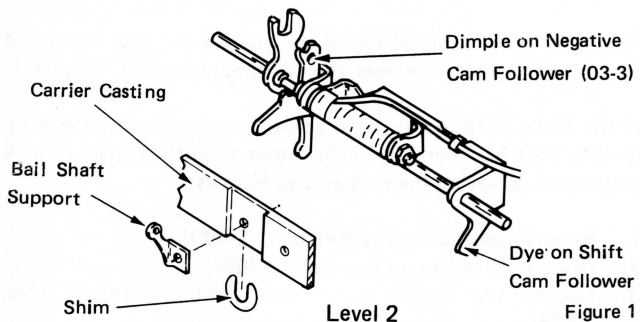
This CEM Expires 6-1-83

261 SERVICE INFORMATION 7-14-82

Type(s): 6713, 6714, 6723, 6724 (Revised) 3-23-83

SUBJECT: NEGATIVE CAM FOLLOWER – REDESIGNED

The negative cam follower (03-003) on the rack transfer bracket assembly (03-041) has been changed to improve negative transfer motion. The new level cam follower has a dimple on the upper right side, and new level bracket assemblies may be marked with blue dye on the shift cam follower (Figure 1).



These brackets do not require the shim (03-043) needed on old level steel brackets. The shim will no longer be included in the rack transfer bracket B/M.

Some new level rack transfer bracket assemblies have reached the field without any marking. To determine the level of the assembly, first ensure that all transfer-related adjustments are correct and hand cycle a negative transfer operation. Then watch for .015" additional motion of the negative cam follower after the rack detents to the front. If this motion is not present, install the shim between the bail shaft support (03-018) and the carrier casting.

PARTS INFORMATION:

MECH/REF PART NO.	DESCRIPTION	QTY.
03 043 1104493	Shim Parts Package No. 97	

Use Applicable Service Code

263 RELIABILITY 7-14-82

Type(s): 6713, 6723 (Revised) 10-6-82

SUBJECT: ESCAPEMENT KNOCKOFF ARM RETURN SPRING – REDESIGNED

MACHINES AFFECTED:

Plant installed above approx. S/N: Type 6713 (Model 50/60), 0203000; (Model 75), 3155000; Type 6723 (Model 50/60), 2033100; (Model 75), 4011000

If experiencing piling, chugging (Model 50/60) or system busy (Model 75) install the redesigned knockoff arm return spring (06-52). This spring provides more reliable inhibitor restoring and increases the escapement magnet seal force. The old knockoff arm return spring should be removed and discarded.

To install the spring remove the C-clip (06-59) and slide the components on the stud to the left until the spring can be installed, then reassemble. The override spring (06-05) may be removed to facilitate installation.

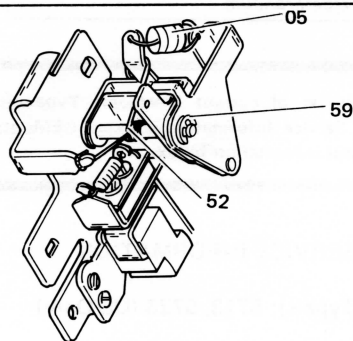


Figure 1

MECH/REF PART NO.	DESCRIPTION	QTY.
06 52 1446050	Spring, Knockoff Arm Return	

Estimated Install Time: .1 Hr.

Use Service Code 33 This CEM Expires 8-1-83

266 SERVICE INFORMATION: 8-11-82
Type(s): 6713, 6723 (Revised) 12-1-82

SUBJECT: PRINT FEEDBACK SWITCH INTEGRATOR B/M

A print feedback (PFB) switch integrator B/M is now available for use on Electronic Typewriters with straight lead PFB switches (all Model 75's and Model 50/60's manufactured since November, 1980). The integrator will reduce failures caused by PFB switch bounce.

The B/M includes an integrator which attaches to the PFB switch and a wire tie to secure the integrator. The integrator must be installed with the black wire from the PFB switch connected to the black wire on the integrator (Figure 1).

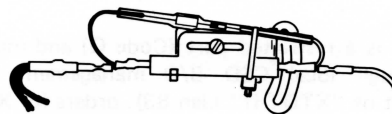


Figure 1

PARTS INFORMATION:

MECH/REF PART NO.	DESCRIPTION	QTY.
02 128 1303299	Integrator B/M (includes wire tie)	1

Estimated Install Time: .1 Hr.

Use Applicable Service Code

267 RELIABILITY 09-08-82
TYPE(S): 6713, 6723 (Revision) 06-11-84

SUBJECT: MOTOR HUBS – QUALITY IMPROVEMENTS

MACHINES AFFECTED:
Above approximately S/N: Type 6713 (Model 50/60)–019447, (Model 75)–3145281. Type 6723 (Model 50/60)–2031865 (Model 75)–4010167.

The manufacturing process on motor hubs (11-8) has been improved to prevent the motor pawl (11-9) mounting studs from coming loose. On machines manufactured prior to the specified serial number range, check for loose studs and replace the hub (P/N 1478225) as necessary.

Part number remains the same.

Use Service Code 33 This CEM Expires 09-01-83

268 SERVICE INFORMATION 09-08-82
TYPE(S): 6713, 6723

SUBJECT: CORRECTING TAPE LIFT AND FEED CAM – FLANGE MISSING

Some Ribbon Cassette System machines contain tape lift and feed cams (02-498) without a flange on the low dwell of the tape lift camming surface (Figure 1). A missing flange does not affect tape lift and will not cause correcting tape lift failures.

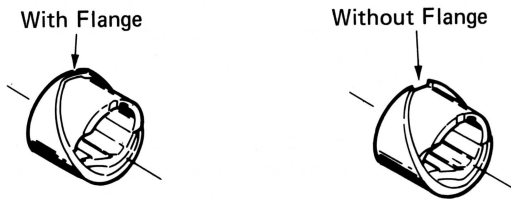


Figure 1

269 SERVICE INFORMATION 09-08-82
TYPE(S): 6713, 6723

SUBJECT: INDEX SELECTOR ADJUSTMENT CHECK

When checking the index selector adjustment, observe the index pawl entry from the bottom of the machine, while pulling down on the multiplying lever (22-109).

270 SERVICE INFORMATION 10-06-82
TYPE(S): 6713, 6723

SUBJECT: REPLACEMENT PROCEDURE—KEYBOARD BELLCRANK MOUNTING BRACKET SCREW

If the keyboard bellcrank mounting bracket screw (21-249) breaks and the remaining part of the screw cannot be removed, use the following procedure. Remove the keyboard assembly (21-264, 265) and drill a hole (Fig. 1) through the frame (08-16) and the bracket (21-247) alongside the existing screw, using a #29 drill bit (P/N 0450163). Install a new screw (P/N 1164581) and a nut (P/N 1134842). The nut should be installed on the rear side of the frame.

NOTE: To facilitate the drilling, the frame and the bracket may be held together with duck bill pliers.

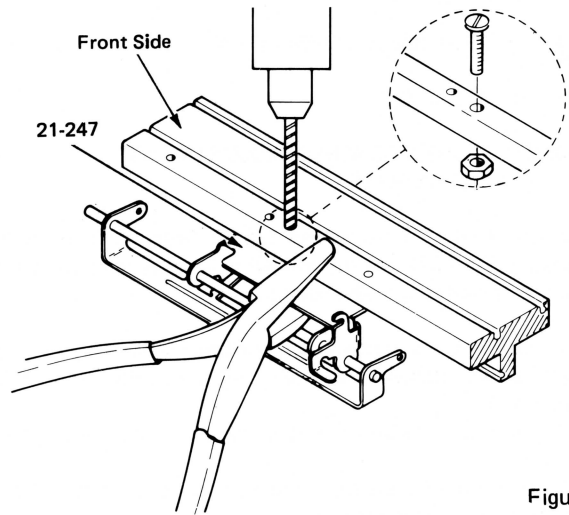


Figure 1

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION	QTY.
21 245	1164581	Screw, Bellcrank Mounting (Repair)	1
	246 1134842	Nut, Bellcrank Mounting (Repair)	1

271 SAFETY 10-6-82

TYPE(S): 6713, 6714, 6723, 6724 (Revised) 06-11-84

SUBJECT: ELECTRICAL SAFETY PRECAUTION

When replacing electrical components (i.e.: transformers, motor) on the Electronic Typewriter, all power should be removed from the machine.

The CSR should not rely on the motor switch and/or power switch to remove hazardous line voltage from electrical components. A defective or improperly adjusted switch can allow line voltage to be present even though the switch is in the OFF position.

When installing any MES, follow all safety precautions and any additional instructions as outlined in the MES Installation Instructions.

272 SERVICE INFORMATION 11-03-82

TYPE(S): 6713, 6723

 SUBJECT: LEADSCREW NUT ADJUSTMENT
 PROCEDURE

When adjusting a leadscrew nut (06-65) with the clip (06-13) installed (CEM 262), use the following procedure to ensure the leadscrew is centered in the leadscrew nut.

1. Loosen the leadscrew nut mounting screws (2), the leadscrew nut bracket screws (2), and the leadscrew lock link screw (1).
2. Tighten the leadscrew nut bracket screws (top) friction tight.
3. Push the leadscrew lock top to rear so that it is locked against the leadscrew nut.
4. Press the leadscrew nut down. Then slightly pull up on the leadscrew to center the leadscrew in the nut.
5. Center the leadscrew nut mounting screws (rear) left to right in their mounting holes and then tighten the screws.
6. Loosen the leadscrew nut bracket screws (top) and center the screws left to right in their mounting holes and then tighten the screws.
7. Half cycle the print shaft. Then continue to cycle the print shaft while watching the lock link move. When the lock link has moved .015"-.030" towards the front of the machine, stop cycling the print shaft and tighten the lock link screw.

After the adjustment is complete there should be a slight amount of carrier side to side movement with the print shaft at rest. With the print shaft half cycled there should be no carrier side to side movement.

273 RELIABILITY 11-03-82

TYPE(S): 6713, 6723

SUBJECT: TILT BIAS SPRING – REDESIGNED

The tilt bias spring (02-463) for ribbon cassette machines is now being manufactured with a thicker gauge material. This change was made to prevent the spring from breaking.

MACHINES AFFECTED:

Plant installed above approximately S/N Type 6713 (Model 50/60) 0210580 (Model 75) 3132720 Type 6723 (Model 50/60) 2034300 (Model 75) 4011400.

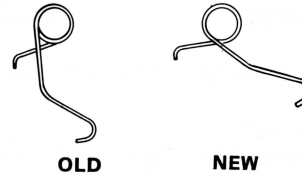


Figure 1

PARTS INFORMATION:

MECH/REF PART NO.	DESCRIPTION
02 463 1446034	Spring, Rocker Tilt Bias

PARTS AVAILABILITY:

Old level springs, P/N 1440374, will no longer be available.

Use Service Code 33 This CEM Expires 10-01-83

274 RELIABILITY 11-03-82

TYPE(S): 6713, 6723

 SUBJECT: COMPRESSION WASHER ADDED ON ROCKER
 PIVOT SHAFT

MACHINES AFFECTED:

Plant installed above approx. S/N Type 6713 (Model 50/60), 0202914; (Model 75), 3157480; Type 6723 (Model 50/60), 2033097; (Model 75), 4011150

A compression washer (02-263) and a flat washer (02-264) have been added between the rocker and retaining C-clip (02-274) on the rocker pivot shaft. The washers eliminate rocker end play and reduce rocker "bounce" during a repeat underscore. The rocker shaft (02-272) has been modified by increasing the length of the flat area.

When experiencing inconsistent print quality and/or voids in low velocity repeat characters and all print adjustments are correct (particularly velocity cam follower clearance), install the compression washer B/M (02-270). Lubricate the washers before assembly with a film of #23 grease.

Adjust the rocker shaft to compress the washer without causing an excessive bind. To do this, half cycle the print shaft and load the rocker shaft to the left with a minimum of 6 lbs. of force to compress the washer (a spring scale may be used). Then tighten the retaining screws (02-6, 404). While still half cycled check for binds by manually moving the rocker to the print position. The rocker must restore completely under tension of the restoring spring.

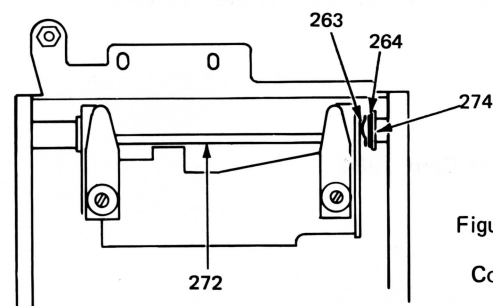


Figure 1

Continued

(CEM No. 274 Continued)

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION	
02 263	1446064	Washer, compression	
	264	1446062	Washer, flat
	272	1446063	Shaft, rocker pivot
	270	1303948	B/M, compression washer (includes ref. 263, 264, 272)

PARTS AVAILABILITY:

Previous level rocker shaft P/N 1449562 is obsolete.

Estimated Install Time: .3 Hr.

Use Service Code 33

275 SERVICE INFORMATION

11-3-82

Type(s): 6713, 6723

SUBJECT: CARRIER YOKES – REDESIGNED

MACHINES AFFECTED:

Plant installed above approx. S/N: Type 6713 (Model 50/60), 0206687; (Model 75), 3160350; Type 6723 (Model 50/60), 2033562; (Model 75), 4010993

Carrier yokes (02-275/276) have been redesigned to prevent cracking around the tilt ring pin screw (02-269) hole. These yokes will have thicker uprights and use smaller diameter tilt ring pins (02-278) and longer tilt ring pin screws (02-269). See Figure 1.

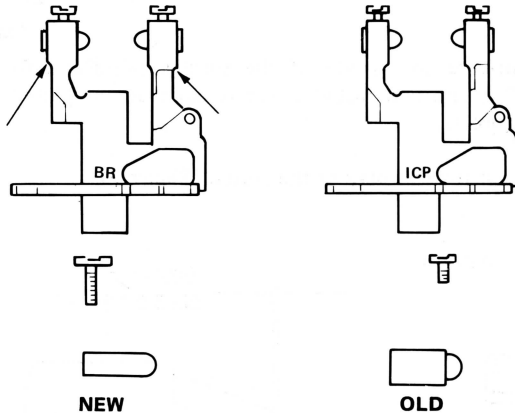


Figure 1

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
02 269	1446068	Screw, small diam. tilt ring pin
02 278	1446067	Pin, small diameter

PARTS AVAILABILITY:

Large diameter tilt ring pins and screws will remain available.

276 SAFETY 12-15-82

Type(s): 6714, 6724

SUBJECT: ESCAPEMENT CONTROL BOARD CAPACITOR – HANDLING PROCEDURES

The escapement control board (19-025) uses a capacitor which contains a small amount of Dimethylformamide (DMF). (Figure 1) Under normal use the capacitor does not pose a health problem.

Precautions should be taken when a leaking or damaged capacitor is found. Polyethylene gloves (p/n 2200041) should be worn when handling a board with a leaking or damaged capacitor. A board with a leaking or damaged capacitor should be placed in a plastic bag (p/n 9900387) before handling further. Any spilled material should be cleaned up with a shop cloth. Gloves and rags may be disposed of at the customer's location.

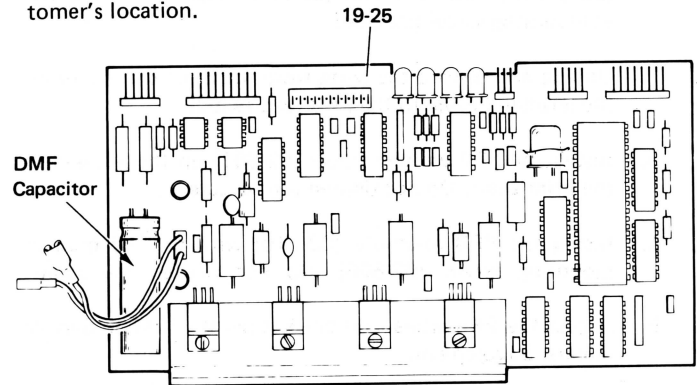


Figure 1

277 SERVICE INFORMATION

12-15-82

Type(s): 6714, 6724

SUBJECT: INDEX DETENT ROLLER BRACKET – WASHER ADDED

A washer has been added under the screw (23-30) that holds the detent roller bracket (23-32). This washer prevents the bracket adjustment from changing when the screw is tightened.

If experiencing difficulty making the detent roller bracket adjustment on an early level machine, install the new washer between the screw and the bracket.

PARTS INFORMATION

MECH/REF	PART NO.	DESCRIPTION
23 057	257985	Washer

Use Applicable Service Code

278 SERVICE INFORMATION

12-29-82

Type(s): 6714, 6724

 SUBJECT: PRINT FEEDBACK CONVERSION – EARLY
 LEVEL DEMONSTRATORS

MACHINES AFFECTED:

Plant installed above serial number 7001866.

Due to parts availability problems, early IBM 85 demonstrators were shipped with reed switch print feedback (PFB) mechanisms. The print feedback signal is integrated at the escapement control board, so the print feedback integrator is not necessary on these machines. If ANY service is necessary to PFB on these machines, convert the mechanism to LED with the following procedure:

1. Remove and discard the PFB switch (02-125), bracket (02-126), PFB magnet wheel (02-61), escapement link (06-108), knock-off adjusting screw (06-03), lock nut (06-04) and override spring (06-05). Retain the PFB bracket mounting screw (02-606).
2. Unplug and discard the wires from the 3-pin connector on the left-hand cable to the PFB reed switch.
3. Install the PFB emitter wheel (02-601) on the left end of the print shaft. Do not tighten the set screws.
4. Install the PFB assembly (02-610) with the old bracket mounting screw (02-606). Do not tighten the screw.
5. Adjust the PFB wheel and bracket per the IBM 85 Service Manual Supplement.
6. Connect the 3-pin connector from the left-hand cable to the PFB emitter board.
7. Install the knock-off screw (06-207) and washer (06-208).
8. Install the new escapement override spring (06-209).
9. Install and adjust the new escapement link (06-206).

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION	QTY.	
02	601	1437289	PFB Emitter Wheel	1
	610	1437501	PFB Emitter Assembly	1
06	206	1437284	Link, Escapement	1
	207	1164580	Screw, Escapement Knock-off	1
	208	1138796	Washer	1
	209	1141585	Spring, Escapement Override	1

Estimated Installation Time: .5 Hr.

Use Applicable Service Code

279 RELIABILITY

12-29-82

Type(s): 6714, 6724

SUBJECT: PLATEN OVERRIDE CLUTCH

An override clutch has been added to the left end of the platen assembly. The clutch prevents index and alignment failures caused by inconsistent drive in the index mechanism.

The clutch is plant installed on all customer machines and on field-service platen and paper feed assemblies. If experiencing index failures on sales demonstrator machines, install the clutch as follows:

1. Remove and discard the left platen knob (22-301), left bushing (22-305), and the washer between the index emitter wheel (23-20) and the c-clip (23-21).
2. Insert the extension of the override spring (22-302) into the hole in the new platen knob shaft (Figure 1).

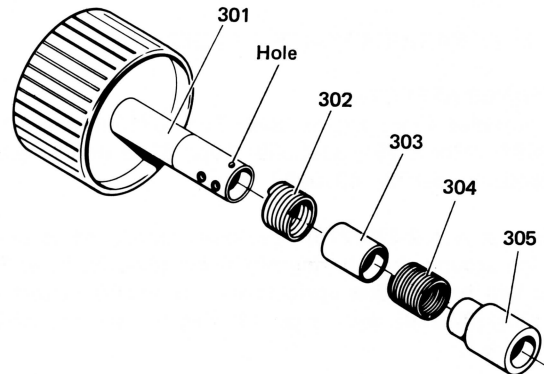


Figure 1

3. Lubricate the inside of the springs (22-302/304) with #23 grease and install the new parts on the platen shaft (Figure 1).
4. Adjust the end play of the clutch (Figure 2).

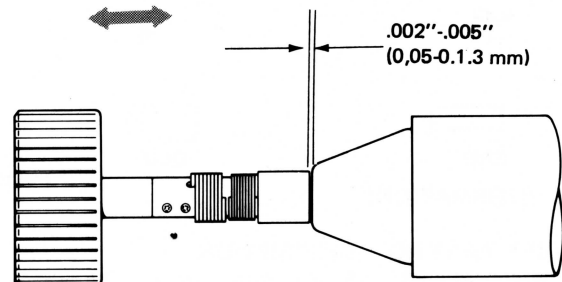


Figure 2

The following adjustments must be checked and/or made when the clutch is installed:

1. Left Platen Latch – The left platen latch (22-266) should hold the platen bushing so that it does not turn when the platen is rotated.

Continued

(CEM No. 279 Continued)

2. Detent Roller Bracket — The left platen latch must be held disengaged so that the bushing rotates freely when making the detent roller bracket adjustment. Disengage the detent roller from the platen ratchet and hand-cycle the index mechanism (follow steps b, c and d of the adjustment procedure in the IBM 85 Service Manual Supplement). Slowly release the detent lever and observe the platen ratchet. The ratchet should turn top-to-rear .000" - .025" (0.00 - 0.63mm) as the detent roller engages the ratchet. The roller should fully seat between ratchet teeth under its own spring tension. Adjust the detent roller bracket front-to-rear for this condition.

Check the adjustment at four locations on the ratchet, 90 degrees apart.

Service Tip — The blade of the 3" screwdriver or similar tool can be wedged between the stop lug of the left platen latch and the paper feed side plate to hold the latch disengaged.

3. Index Feedback LED Bracket — With the detent roller fully seated between ratchet teeth, adjust the bracket radially so that the upper rear corner of the LED block lines up with the scribe line on the index feedback wheel.

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
22	301 1436351	Knob, Platen, 65/85
	302 1436346	Spring, Platen Override
	303 1436345	Sleeve, Platen Override
	304 1436347	Spring, Platen Bushing
	305 1436349	Bushing, Platen Shaft, 65/85

ESTIMATED INSTALL TIME: .5 hr.

Use Service Code: 32 This CEM expires 12/31/83.

280 SERVICE INFORMATION 1-12-83
Type(s): 6713, 6714, 6723, 6724

SUBJECT: CARDHOLDER BRACKET ASSEMBLY — REDESIGNED

The cardholder bracket assembly (14-072) for the Ribbon Cassette System has been redesigned to prevent the cardholder from coming out unintentionally. The release lever stud has been extended and detents into a cutout on the bracket.

To remove the cardholder, move the release lever to the front, and then to the right and pull the cardholder up and out. To install the cardholder, move the release lever to the front, then to the right. Push the cardholder down onto the bracket studs. Pivot the release lever top-to-left until the pin detents into the bracket cutout.

The new bracket is designed so that the cardholder is not easily removed by an operator. Operator instructions for cardholder removal and cleaning have been removed from future revisions of the operator's manuals. CSR's are free to instruct operators on cardholder removal on an as needed basis.

MECH/REF	PART NO.	DESCRIPTION	QTY.
14	72 1446045	Assembly, Cardholder Bracket	

Previous level brackets (P/N 1440320) will no longer be available.

281 SERVICE INFORMATION 1-26-83
Type(s): 6713, 6723, 6714, 6724

SUBJECT: ELECTRONIC TYPEWRITER DIAGNOSTIC TOOL - II — ANNOUNCEMENT

The Electronic Typewriter Diagnostic Tool-II (XTDT-II) is a tool similar to the XTDT and is designed for use on Electronic Typewriter Models 65/85 as well as Models 50/60/75. It incorporates many of the tests used in XTDT along with some additional features and functions.

The following is a summary of the XTDT-II features and functions (see User Guide for details):

- Use on ALL Electronic Typewriter Models — 50/60/65/75/85
- Use Without Loss of Machine Memory
- New Functions
 - Programmable Input/Output
 - String Tests
 - Real Time Diagnostics
 - Keyboard Typing
 - Standby Mode
- Increased Diagnostic Capabilities
 - Escapement Magnet Drop Test (rates drop time)
 - Binds Test (Model 65/85)
 - DC Motor Test (Model 65/85)
 - Index Test (Model 65/85)

The "XTDT-II" is designed to aid the user in diagnosing difficult or intermittent failures, and for use on High Service machines with excessive calls and/or unresolved problems. Many tests are designed to stress particular components to help find the causes of intermittent failures. If a particular test detects a failure and the operator has not reported problems in that area, the CSR should exercise his/ her judgment for the proper, if any, repair action.

Continued

(CEM No. 281 Continued)

The "XTDT-II" is not intended to replace normal diagnostic/repair procedures including Resident Diagnostic Tests. Any problems identified while diagnosing failures should be repaired prior to using the "XTDT-II". This will allow the "XTDT-II" to more critically test the machine for intermittent and/or undetected problems.

The "XTDT-II" is considered a Branch Office tool and is not intended to be used on every service call. Local CSD management will control and direct the utilization of the tool within the branch. This will be a restricted part (Code "Q") and may only be ordered through local CSD management.

Each "XTDT-II" and User Guide is stored in a protective carrying case and should always be transported in the carrying case. The User Guide contains the necessary training information, installation instructions, operating instructions and safety precautions. The User Guide should be thoroughly understood by the CSR before attempting to use the tool. Additional copies of the User Guide (SR28-0097) can be ordered from Mechanicsburg Distribution Center.

NOTE: Usage of the "XTDT-II" must be reported as the last call reporting entry. Use Service Code 48 and Activity Code 58 each time the "XTDT-II" is used.

282 RELIABILITY 2-9-83
 Type(s): 6713, 6723, 6714, 6724 (Revised) 2-23-83

SUBJECT: ROTATE RACK RETURN SPRING—WEAR PREVENTION CLIP

MACHINES AFFECTED:

Plant installed on all machines and carriers manufactured after January 3, 1983.

A wear prevention clip is now available to prevent the rack return spring (02-298) from wearing through the rocker casting (02-289). The clip also provides a new surface if the rocker casting is partially worn or completely worn through. The existing spring will be used with the clip.

Note: Squeezing the clip together slightly before installing will help hold it in place while remounting the spring (Fig. 1).

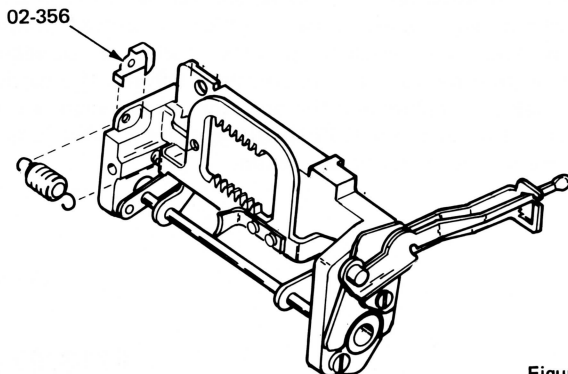


Figure 1

PARTS INFORMATION:

MECH/REF PART NO.	DESCRIPTION
02 356 1446048	Clip, rack return spring

Use Service Code 33 This CEM Expires 01-15-84

283 SERVICE INFORMATION 2-9-83
 Type(s): 6714, 6724

SUBJECT: APM CORRECTION

The adjustment specification for the print shaft cycle clutch spring (frame 14) is incorrect in the APM (F/N SR-28-0088-0). The proper clearance is .030"-.040" (0.76-1.02 mm).

Note: This adjustment specification is critical to proper machine operation. Make this correction in your APM.

284 SERVICE INFORMATION 2-9-83
 Type(s): 6714, 6724

SUBJECT: DIAGNOSTIC ENTRY PROCEDURE

MACHINES AFFECTED:

All Electronic Typewriter Model 65s.

SOLUTION:

All resident diagnostics in the IBM Electronic Typewriter 65 are identical to those found in the IBM Electronic Typewriter 85. However, the entry procedure for the following tests is different; Message Panel Test, Carrier Magnet/Solenoid Test, Pitch/SAPI Reed Test, and the Programmable Mode.

The Electronic Typewriter 65 has no "Advance" or "Return" button on the message panel; therefore, a service switch (Fig. 1) has been added in order to access the tests previously mentioned. To enter these specific tests, the service switch is used exactly as the "Advance" button is used on the IBM Electronic Typewriter 85.

Caution:

The service switch must remain depressed during the entire motor switch reset, therefore always move the carrier to the left of the switch to avoid having the carrier hit your hand while entering the diagnostic mode.

Pressing the service switch during the Message Panel test will cause the same LED response as the "Advance" button (Columns LED).

This switch is mounted to the machine frame to the right of the serial number.

Continued

(CEM No. 284 Continued)

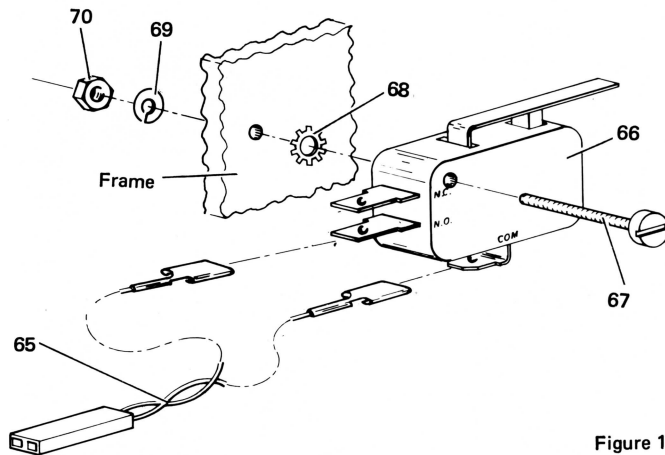


Figure 1

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION	QTY.
20	65	1436256 Cable	1
	66	1245535 Switch, Service	1
	67	0438554 Screw, Mtg.	1
	68	0257984 Lockwasher	1
	69	0338169 Star Washer	1
	70	0037913 Nut	1

285 SERVICE INFORMATION 2-3-83

Type(s): 6714, 6724 Model 65 (Revised) 2-23-83

SUBJECT: DIAGNOSTIC MANUAL REVISION

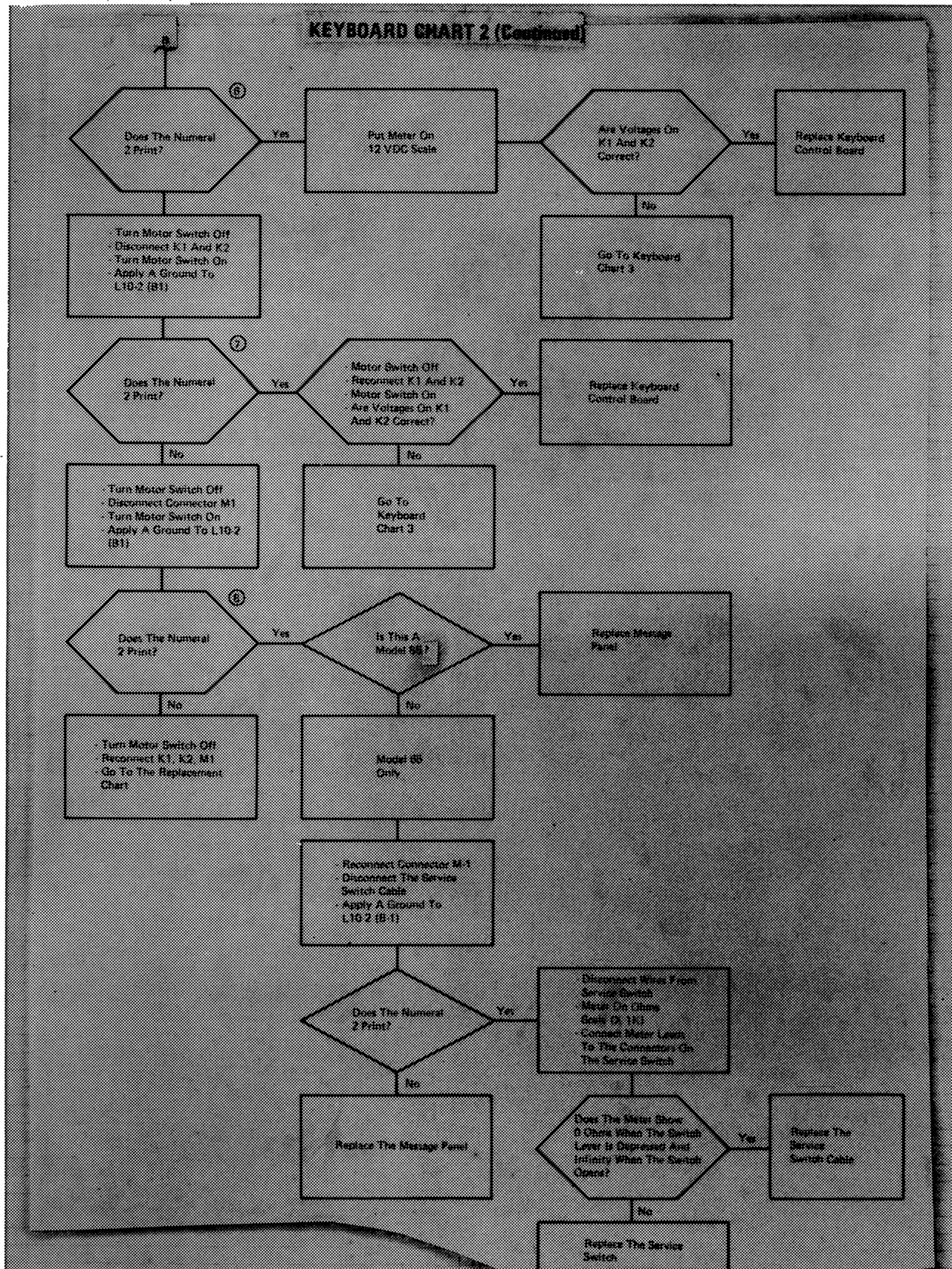
The following two flow charts from the Model 85 Diagnostic Manual (F/N SR-28-0075-0) have been revised to include Model 65 information. These charts should be used in place of the existing charts when servicing Model 65 Electronic typewriters.

Keyboard Chart 2	-Page 37
Message Panel Chart 1	-Page 43

OBSOLETE
11-16-83

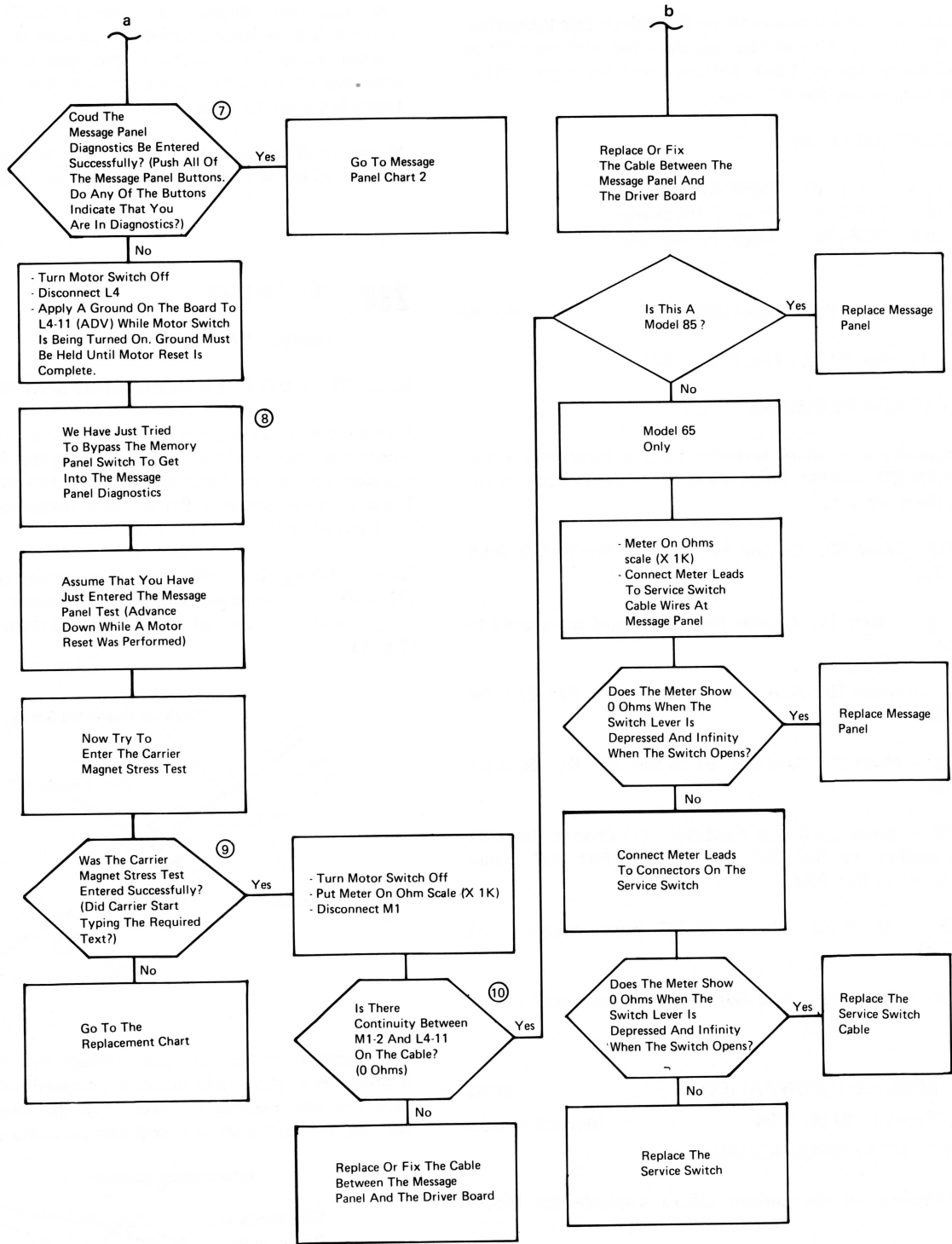
Continued

(CEM No. 285 Continued)



(CEM No. 285 Continued)

MESSAGE PANEL CHART 1 (Continued)



286 SERVICE INFORMATION

3-9-83

Type(s): 6714

 SUBJECT: ANNOUNCEMENT – IBM FIFTIETH
 ANNIVERSARY MODEL TYPEWRITER

Announcement of a limited edition IBM Electronic typewriter Model 85. The machine will be manufactured with pearl white top and center covers, black bottom cover and a gold "IBM Fiftieth Anniversary Model" logo.

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
05 004	1436558	Plate, Fiftieth ann.
05 314	1436476	Logo, Fiftieth ann.

287 SERVICE INFORMATION

4-20-83

Type(s): 6713, 6714, 6723, 6724

SUBJECT: APM REVISIONS

The following is a list of revisions for the Electronic Typewriter APM SR 28-0088. These are only revisions necessary for correct parts ordering.

Page 107 – Mech 02. Change Ref. 3 screw (for Ref. 2 only) to Ref. 76.

Page 118 – Mech 11. Change Ref. 223 (print shaft gear) to Ref. 234.

Page 123 – Mech 19. Add Ref. 27 to Ref. 28. Ref. 27 is for Model 65.

Page 125 – Mech 20. Add Ref. 61 to Ref. 60. Ref. 60 is for Model 65.

Page 128 – Mech 22 (Paper Feed 85). (1) Change Ref. 301 (platen ratchet) to Ref. 307. (2) Change Ref. 307 (paper release lever) to Ref. 339.

Page 130 – Mech 23. Change 22-307 (paper release lever) to 22-339.

Page 131 – Mech 29. Add Ref. 6 to keyboard reed switch cable.

288 SERVICE INFORMATION

4-20-83

Type(s): 6714, 6724

(Revised) 5-18-83

SUBJECT: MES ANNOUNCEMENTS

The following are the current MES's available for Model 65/85.

- Memory Protection Feature*
- Conversion from Model 65 to Model 85
- Modularity Option**

*Repair parts and diagnostic information in APM SR 28-0088.

**Repair parts and diagnostic information in SI SR 28-0098.

Order MES's through local marketing offices.

6713/6714**289**

SERVICE INFORMATION

4-20-83

Type(s): 6713, 6714, 6723, 6724

SUBJECT: ESCAPEMENT MAGNET PAWL SPRING

The escapement magnet pawl spring (06-57) may not be positioned as previously emphasized because of a manufacturing process change. The magnet is produced to meet specific drop time and hold force specifications and the positioning of this spring is critical to these specifications.

If the pawl is removed for cleaning, be sure the spring is reinstalled in the same position it was removed from.

290 RELIABILITY

4-20-83

Type(s): 6713, 6723

SUBJECT: KEYLEVER RESTORING SPRING CLIP

A single operation keylever restoring spring clip (21-85) and a repeat operation keylever restoring spring clip (21-86) are now available for use on Electronic Typewriters Model 50/60/75. These clips will prevent the keylever restoring spring (21-74, 80) from slipping off the keylever.

When installing either clip remove top section of the keyboard (21-084). To install a single-operation keylever restoring spring clip, slide the flat part of the clip on the restoring spring first (Fig. 1).

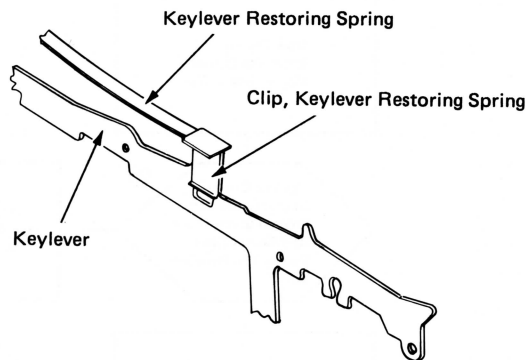


Figure 1

On repeat operation keylevers install the clip as follows; depress the keylever and install the hooked portion of the clip over the intermediate keylever (Fig. 2). Then slide the flat part of the clip over the keylever restoring spring (Fig. 3).

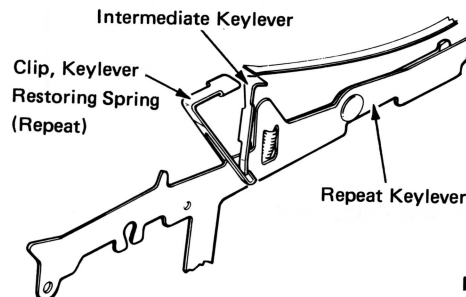


Figure 2

Continued

(CEM No. 290 Continued)

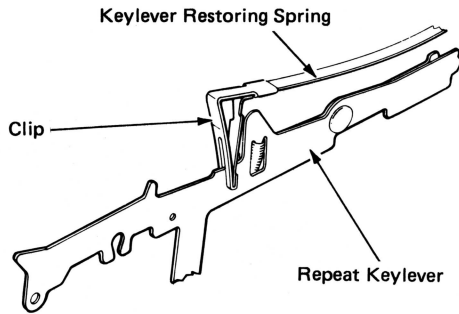


Figure 3

MECH/REF	PART NO.	DESCRIPTION
21 85	1303973	Clip, Keylever Restoring Spring
21 86	1303974	Clip, Keylever Restoring Spring (Repeat)

Use Service Code 33

This CEM Expires 2-9-84

291 SERVICE INFORMATION

5-4-83

Type(s): 6714, 6724

SUBJECT: RESIDENT DIAGNOSTICS

The following machine conditions will not allow the "Resident Diagnostics" to perform as expected. **Note:** The term "resident diagnostics" refers to the internal machine diagnostic entered by holding a message panel button or the service switch down while turning the motor switch on.

1. The operator's document can be altered from the "resident diagnostics" by two methods. First, if the 'store' button is pressed by itself after the message panel test has been exited. Second, if the document light is on when the message panel test is exited. Keyboarded inputs will be stored in the operator's document. Solution: After exiting the Message Panel Test, only use the 'store' button by itself to exit a document.
2. When in resident diagnostics always exit the programmable ('store' + 'comma') exercise routine before turning off the motor switch. If you fail to do this, the document LED will remain on when the motor switch is turned on again. Pressing the 'store' button alone will not turn the LED off. To turn the LED off: enter another document storage area, then exit document storage ('store' + 'A', then 'store' alone).

3. If you begin the carrier magnet/solenoid stress test with the element in upper case and the keyboard in lower case, the machine will cycle three times then pause for approximately ten seconds before printing the test. If you begin the carrier magnet/solenoid stress test with the shift key-button in upper case, and do not shift to lower case, you will be unable to enter the test. To avoid confusion: always shift to lower case before beginning the test.
4. Four known conditions will prevent the machine from entering resident diagnostics on the first attempt:
 1. Machine in the no-print mode.
 2. Carrier at the farthest right position.
 3. Semi-Automatic Paper Insertion (SAPI) circuit either active or shorted.
 4. Column layout mode, with one or more characters typed.

The machine will enter "resident diagnostics" on the second attempt.

292 SERVICE INFORMATION

6-15-83

Type(s): 6714, 6724

SUBJECT: REMOVAL OF PACKING SPACERS

Remove the packing spacers (65-2) to reduce idle noise and prevent cable damage. Failure to remove the left rear packing spacer may cause damage to the left cable if the spacer is not fully seated in its hole and the machine is continually moved in and out of the service position.

293 SERVICE INFORMATION

6-15-83

Type(s): 6714, 6724

(Revised) 6-29-83

SUBJECT: DIAGNOSTIC MANUAL REVISION

The following flowchart should be used in place of the existing one in the Diagnostic Manual (F/N SR-28-0075-0/1).

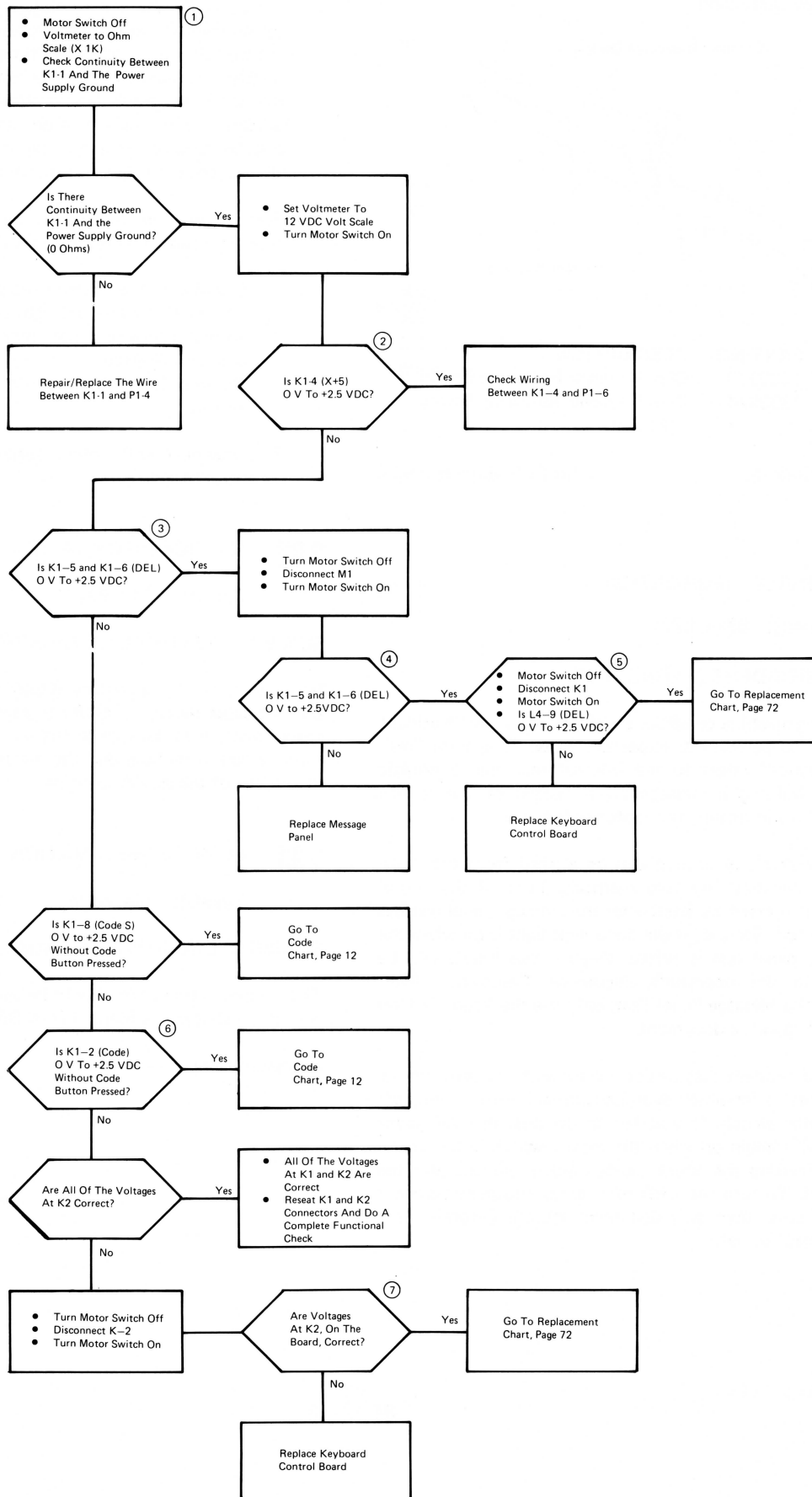
Keyboard Chart 3 -

Page 44

Continued

(CEM No. 293 Continued)

KEYBOARD CHART 3



294 RELIABILITY 6-15-83
Type(s): 6713, 6714, 6723, 6724 (Revised) 6-29-83

SUBJECT: ROCKER RETURN SPRING – WEAR PREVENTION CLIP

MACHINES AFFECTED:

Plant installed on machines above serial number: Type 6714 (Model 65) - 7023662, (Model 85) - 7024661; Type 6724 (Model 65) - 7505132, (Model 85) - 7501729.

A wear prevention clip is now available to prevent the rocker return spring (02-313) from wearing through the rocker casting (02-289). The clip also provides a new surface if the rocker casting is partially worn or completely worn through. The existing spring will be used with the clip.

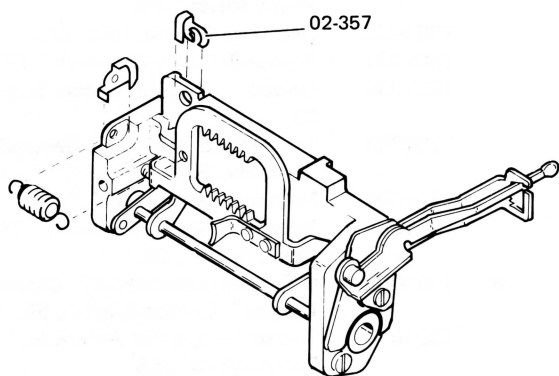


Figure 1

PARTS INFORMATION:

NOTE: Plant installed on carriers manufactured after April 4, 1983.

MECH/REF	PART NO.	DESCRIPTION
02 357	1446065	Clip, Rocker Return Spring
02 358	1303294	Field B/M Wear Prevention Clip. (Includes Clip in CEM 282).

Use Service Code 33

This CEM Expires 5/1/84

295 SERVICE INFORMATION 7-13-83
Type(s): 6713, 6723

SUBJECT: CYCLE CLUTCH LATCH SUPPORT

A cycle clutch latch support has been released for field use. This support will reduce PSCC extra cycles caused by the latch not holding the sleeve.

To install the support, remove the print shaft belt, the PSCC backcheck pawl (10-44) and the restore arm (10-71). Slide the support onto the restore arm (fig. 1) and re-install the restore arm (fig. 2), the backcheck pawl, and the print shaft belt.

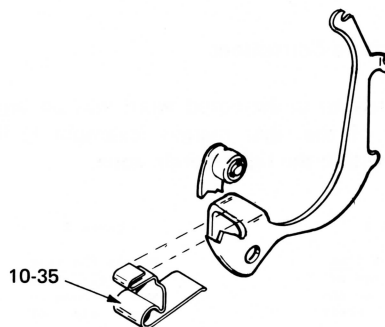


Figure 1

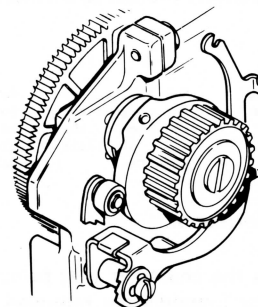


Figure 2

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
10 35	1303972	Support, cycle clutch latch

296 RELIABILITY 7-27-83
Type(s): 6714, 6724 (Revised) 11-2-83

SUBJECT: PROCESSOR BOARD - NEW LEVEL

MACHINES AFFECTED:

Plant installed above approx. S/N: Type 6714 7024129, Type 6724 7501577.

Model 65/85 Electronic typewriters are now being manufactured with a new level processor board. The new board has several microcode changes which are listed below. To identify a machine with a level 2 processor board installed see "Query Function Correction."

● Justification Feature Corrections

- On level 1 boards an underscored word will be one (1) character short of the right margin (example 1) if the word plays out within the right margin zone.

Example 1:	Level 1	Level 2
	Now is the <u>time</u> for all good men to come to the aid of their	Now is the <u>time</u> for all good men to come to the aid of

- On level 1 boards a carrier return (CR) typed in the right margin zone (example 2) and played back out of the zone, will not convert the CR to a space.

Example 2: Original	Level 1	Level 2
Now is the time for all good men to come to the aid of their country.	Now is the time for allgood men to come to the aid of their country.	Now is the time for all good men to come to the aid of their country.

● Query Function Correction

- On level 1 boards the character that prints after a query function cannot be immediately removed from the page using the automatic error correction key. To IDENTIFY a machine with a level 2 processor board installed perform a query function and then depress the correction key. If the character is immediately removed from the page, a level 2 board is installed.

● Model 65 Service Switch

- The level 2 board eliminates the need for the Model 65 Service Switch. Resident diagnostics are now accessed by holding down the "Play" button while turning the motor switch on.

NOTE: On Model 85's with a level 2 board installed, either the "Adv" or "Play" will access resident diagnostics.

● Message Panel Test

- The light pattern for the Message Panel Test has been changed on the level 2 boards. These changes are indicated below by an asterisk (*) next to the appropriate message panel button.

Switch Button Pressed	Level 1 LED(s) Lighted	Level 2 LED(s) Lighted
Adv (Service) Rtn	Columns Auto Return	Columns Auto Return
* Del	Hyphenate	Hyphenate & Auto Return
* Play	Document	Document & Columns
Store None	Wait & Phrase LED(s) Of Last Button Pressed	Wait & Phrase LED(s) Of Last Button Pressed

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
19 27	1301000	U.S. Correspondence, Canada-Bi-Lingual*, Canada-English, 65.
	1301008	Puerto Rico, Latin American, South Africa*, 65.
	1301002	Germany-Austria, Italy, 65.
	1301001	France-Belgium, Denmark*, 65.
	1301004	United Kingdom, Japan-English*, 65.
	1301003	Switzerland-French*, Switzerland-Germany, 65.
	1301006	Netherlands, Norway*, 65.
	1301007	Sweden-Finland, Sweden Transition*, Spain*, 65.
28	1301009	U.S. Correspondence, Canada-Bi-Lingual*, Canada-English, 85.
	1301017	Puerto Rico, Latin American, South Africa*, 85.
	1301011	Germany-Austria, Italy, 85.
	1301010	France-Belgium, Denmark*, 85.
	1301013	United Kingdom, Japan-English*, 65.
	1301012	Switzerland-French*, Switzerland-Germany, 85.
	1301015	Netherlands, Norway*, 85.
	1301016	Sweden-Finland, Sweden-Transition*, Spain*, 85.

* Jumper Required on Driver Board

PARTS AVAILABILITY:

Level 1 boards will no longer be available.

Use Service Code 33

This CEM expires 7-27-84

297

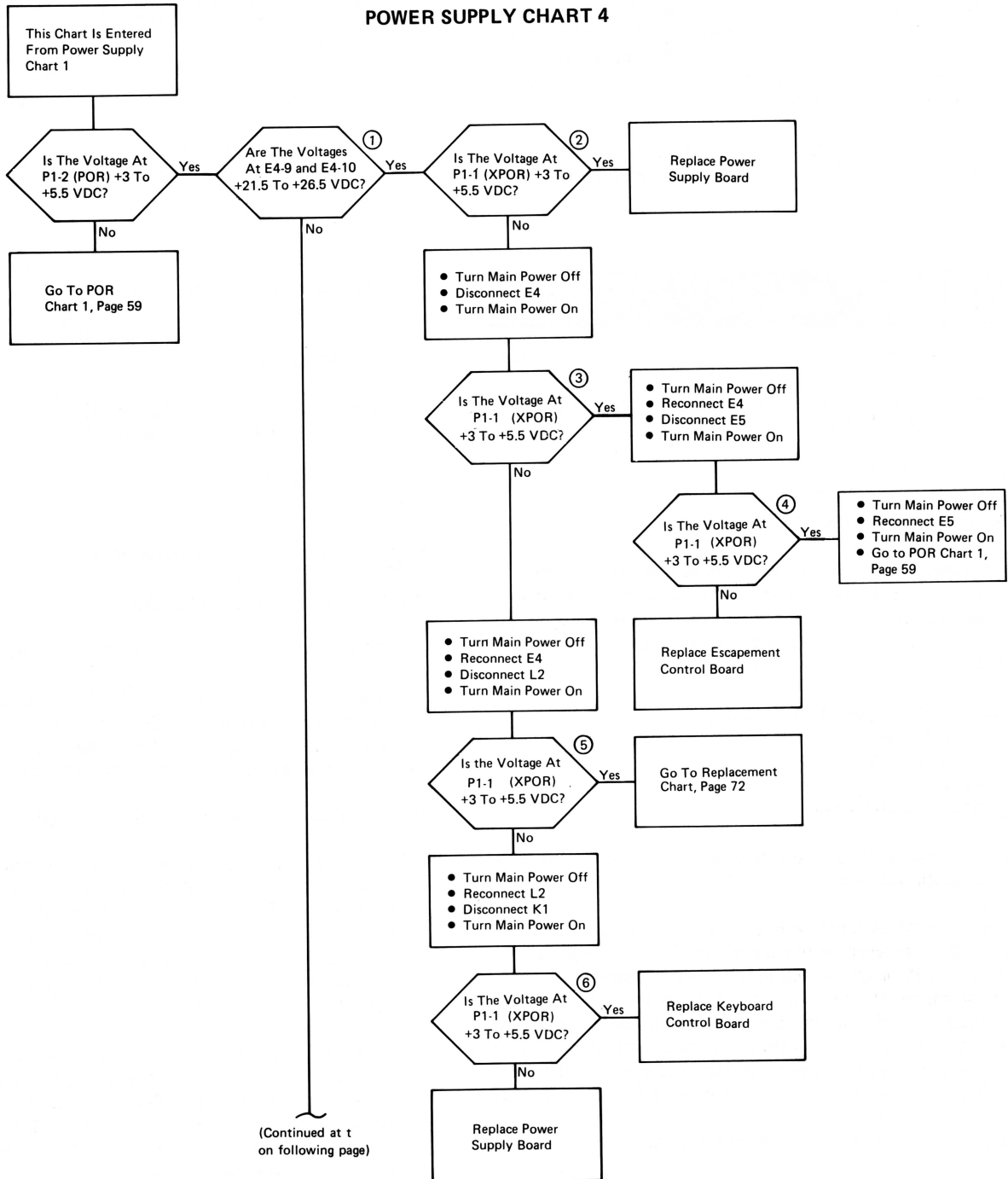
SERVICE INFORMATION

08-10-83

TYPE(S): 6714, 6724

SUBJECT: DIAGNOSTIC MANUAL REVISION

The following flowchart should be used in place of the existing one in the Diagnostic Manual (F/N SR28-0075-1).



298 SERVICE INFORMATION 09-09-83

TYPE(S). 6714, 6724 (Revised)05-14-84

SUBJECT. IBM 65/85/95-PC ATTACHMENT DEVICE

The 65/85/95-PC Attachment Device is a field installed MES that allows the IBM Electronic Typewriter 65/85/95 to be connected to the IBM Personal Computer or the IBM Personal Computer XT as a letter quality trail printer. With this device installed, the typewriter can still be used as a full feature typewriter until, by program command, it is accessed by the IBM Personal Computer. The 65/85/95-PC Attachment Device is available for field installation only and must be ordered through the MES procedure.

NOTE: The 65/85/95-PC Attachment Device **cannot** be installed on a Model 85 or 95 that has the Modularity Option installed.

299 **SAFETY** 10-24-83

TYPE(S): 6714 (Revised) 03-19-84

SUBJECT: RISK OF ELECTRIC SHOCK DUE TO DAMAGED TRANSFORMER LEADS

MACHINES AFFECTED:

6714 Below Approx. 7070100

6714 Anniv. Models 7800000-7801584

Transformer leads on affected machines may be positioned so that they are in the path of the carrier leadscrew nut. Insulation damage can occur to the primary power leads of the transformer, **exposing live voltage to the machine frame**. This involves the risk of electric shock.

Symptoms of this condition include:

Unexplained POR

Carrier hesitation/binds

Memory loss

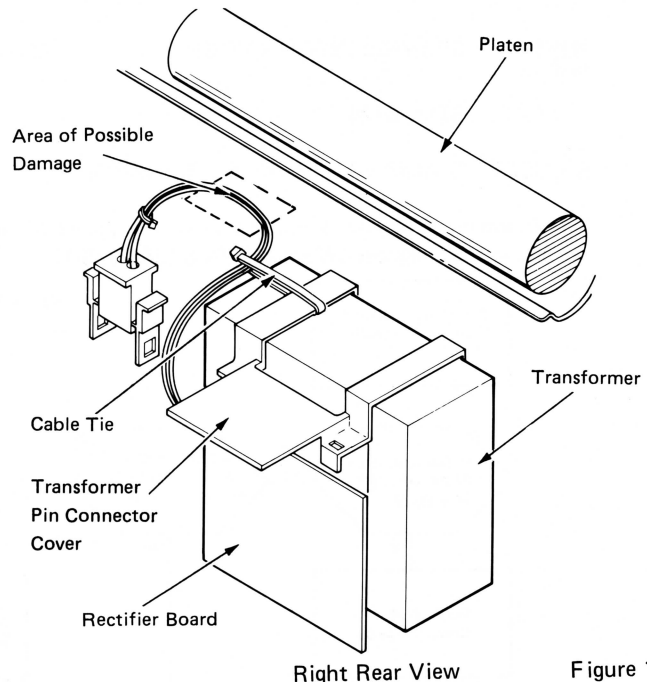
Dead or locked-up machine

NOTE: It is possible that the conductor can break with little or no insulation damage.

Affected machines must be inspected **at the earliest opportunity** for the existence of this condition. Observe proper safety precautions! Prior to inspecting the machine, position the carrier approximately 1 inch from the RH side frame to minimize the possibility of contact between the leadscrew nut and transformer leads. If the customer reports any of the above symptoms, remove the line cord from the wall outlet before removing the machine cover or inspecting for lead damage.

Replace any transformer(s) with lead damage.

Install wire tie (29-03) between the transformer leads and the transformer pin connector cover (12-52) (see Figure 1) on **all** machines within the specified serial range to ensure adequate clearance between the transformer leads and the leadscrew nut. The cable tie is plantinstalled above the specified serial range.



Right Rear View

Figure 1

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
29 03	1159913	Tie, cable

Use Service Code 33

300 SERVICE INFORMATION 11-02-83

TYPE(S): 6713, 6723, 6714, 6724

SUBJECT: TAPE LIFT CAM FOLLOWER RCS MACHINES

The tape lift cam follower has been redesigned to provide a more consistent method of adjusting its height. The follower is now threaded through the follower bellcrank and is adjusted with a bristol wrench. A nut secures the adjustment.

Use the following procedure to adjust the tape lift cam follower.

1. With the print shaft at rest, manually operate the erase latch to release the restore arm. Adjust the tape lift cam follower (14-80) so that the bottom of the follower just touches the erase cam (2-498) when the follower is unlatched. There should be no clearance between the follower and the cam. Secure the adjustment with the nut (14-81). Cycle the print shaft 360
2. With the high point of the correcting control eccentric (02-503) to the rear, half cycle the print shaft so the correcting control arm (02-501) is held by the erase latch (02-481). With the adjusting screw (02-483) adjust the latch vertically to obtain a .001" to .004" clearance between the bottom of the follower (14-80) and the erase cam (02-498).

NOTE: Update APM frame 155 to show new adjustment specification. This new specification applies to both levels of followers.

Operation and Diagnostics

(CEM No. 300 Continued)

- With the correcting control arm (02-501) on the high point of the correcting restore cam (02-499), adjust the correcting control arm eccentric (02-503), for .012" to .020" clearance between the latch surface of the correcting control arm and the erase latch. Keep the eccentric toward the rear.

NOTE: Update APM frame 156 to show new adjustment specification.

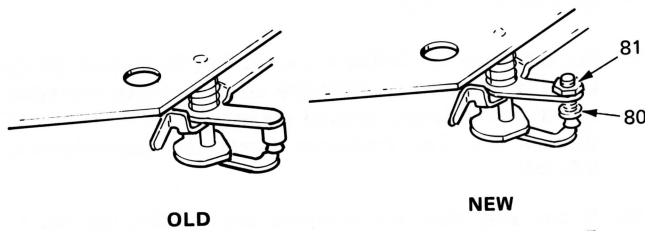


Figure 1

PARTS INFORMATION

MECH/REF	PART NO.	DESCRIPTION
14	80	1442991 Follower, Tape Lift Cam
	81	1622432 Nut, Tape Lift Follower

301 SERVICE INFORMATION 11-16-83

TYPE(S): 6714, 6724 (Revised) 07-23-84

SUBJECT: IBM 65/85/95 - PC ATTACHMENT DEVICE - DESCRIPTION, THEORY OF OPERATION AND DIAGNOSTICS

DESCRIPTION:

The IBM 65/85/95 - PC Attachment Device enables the IBM Personal Computer or the IBM Personal Computer XT to attach to the IBM Electronic Typewriter 65/85/95 as a letter quality trail printer. The attachment device consists of the following hardware: interface card, 6½ foot interface cable with associated mounting hardware, AC arc suppressor and a capacitor assembly.

To utilize the hardware, a software package is used by the customer which includes an IPL/Diagnostic diskette for the Personal Computer, a diagnostic wrap plug and operator training instructions.

THEORY OF OPERATION:

The interface card attaches to the Keyboard Control Board which buffers data from the Personal Computer to the typewriter via the 6½ foot interface cable. The interface card also provides status information back to the Personal Computer. The interface cable which attaches to the interface card connects the Personal Computer Printer Port to the typewriter. The interface cable provides the communication link

between the Personal Computer and the typewriter which enables the transfer of eleven lines of data. These lines of data are bail codes B1 through B6, shift, code, data control signal, print feedback control signal and print feedback. All other lines in the interface cable are grounds. For each character sent to the typewriter a print shaft operation occurs and a print feedback signal is sent back to the Personal Computer. The print feedback signal is used as a timing device to regulate the data signals from the Personal Computer to the typewriter. The AC arc suppressor is used to reduce power line noise between the typewriter and the Personal Computer.

DIAGNOSTICS:

Customer level diagnostics utilize the IPL/Diagnostic diskette and the wrap plug to isolate failures between the Personal Computer and the typewriter. All customer level diagnostics are performed by the customer.

Once accessed, the diagnostics consist of two parts:

- It internally wraps signals in the Personal Computer Printer Adapter Card.
- Instructs the operator to install the wrap plug which wraps the data control signal, Pin No. 1, from the Personal Computer Printer Adapter Card through the wrap plug and back into the Personal Computer on print feedback, Pin No. 10.

The remaining data signals are not wrapped by or during any other 65/85/95-PC Attachment Diagnostics. The extra pins in the wrap plug are used only to support the wrap plug once installed in the Personal Computer Printer Port.

The CSR diagnostics include a checkout procedure that instructs grounding of certain pins in the interface cable connector. By grounding certain pins, specified characters will print on the 65/85/95 typewriter if the processor/driver board or the CMOS Logic Board is functioning properly.

SERVICE TIPS:

If experiencing character substitution problems when using the 65/85/95 **only** as a trail printer and both the Customer Diagnostics and the CSR checkout procedures pass successfully, have the customer exercise the Personal Computer Advanced Diagnostics.

If experiencing dropped characters or functions when using the 65/85/95 as a trail printer **and** the Level II interface board is installed the failure can be attributed to an extra print feedback signal generated by the typewriter.

The extra print feedback signal can be caused by one of the following: shift hunt, escapement retries, print feedback bounce or an extra print shaft cycle.

(Continued)

(CEM No. 301 Continued)

If Modularity Option is installed, prior to installing the 65/85/95-PC Attachment Device **disconnect** the Link Interface Board L1 Connector from the typewriter processor board. Also remove the external link connector from the slot in the bottom cover and leave all Modularity Option parts in the typewriter bottom cover.

65/85/95 - PC ATTACHMENT DEVICE CHECKOUT PROCEDURE

1. If any step, 1 through 9, does not perform as described, go to step No. 10.
2. The interface cable should be disconnected from the back of the personal computer.
3. Turn the typewriter power and motor switches on.
4. Insert a sheet of paper into the typewriter.
5. Apply a ground to each pin, 1 through 8 (Fig.1), in the Interface Cable Connector. No response from the typewriter should occur.

NOTE: The interface cable connector housing is used as ground for the complete checkout procedure.

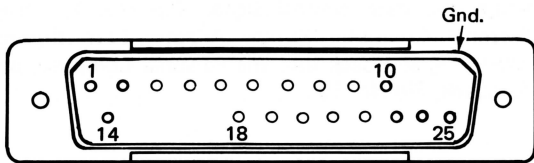
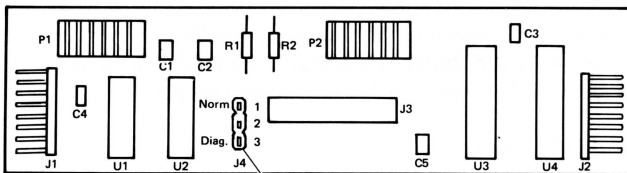


Figure 1

6. Turn the motor switch off. Move the Interface Board Diagnostic Jumper to the diagnostic position, Fig. 2. Turn the motor switch on.



Normal = 1 & 2
Diagnostic = 2 & 3

Figure 2

7. Apply a ground to the following pins in the interface cable metal connector. See Notes in steps 5 and 12.

PIN NO.	EXPECTED TYPEWRITER RESPONSE
2	Prints A "2"
3	Prints A "0"
4	Prints A "z"
4&5	Prints A "-"
5&6	Spacebar
6&7	Carrier Return
2&8	Prints A "@"
2&9	Tab

8. With the meter set on 12VDC, the black lead in COM and the red lead in VOM, take the following voltage readings.

Pin 10 is an inverted PFB (Print Feedback) signal from the typewriter. Connect the black meter lead to the typewriter power supply ground and the red meter lead to pin 10. (Note: Ensure the red lead does not contact the metal connector.) The meter should read 0-1 VDC.

With the meter connected to pin 10, apply a ground to pin 2. The meter needle should deflect and a "2" should print.

With the meter connected to ground and pin 10, apply a ground to pin 14. The meter should read 4-5 VDC. Turn the motor switch off.

9. Set the meter on OHMS X 1 scale. Pins 18 through 25 are grounds. Perform a continuity check between the typewriter power supply ground connector and each pin 18 through 25. The resistance should be approximately 0 OHMS.

10. If any step does not complete successfully, recheck all connections and perform the checkout procedure again. If the failure still exists, replace the device B/M. If all steps to this point perform successfully, turn the motor switch off and move the interface board diagnostic jumper to the normal position. Fig. 2.

11. Turn the motor switch on and do a complete strike up from the keyboard. If a failure occurs from the keyboard, recheck all the keyboard connections. If the failure still occurs, turn the motor switch off and disconnect the PC interface board and reattach K1 and K2 to the keyboard control card. Turn the motor switch on and do a strike up again. If the failure is gone, replace the device B/M. If the failure still occurs, diagnose the failure using the 65/85/95 Diagnostic Manual.

12. Remove the platen. Install the top cover and the platen. The checkout is complete.

NOTE: When using the CSR checkout procedure, test lead (part number - 1149315) can be used as an aid in applying grounds to multiple pins at the same time.

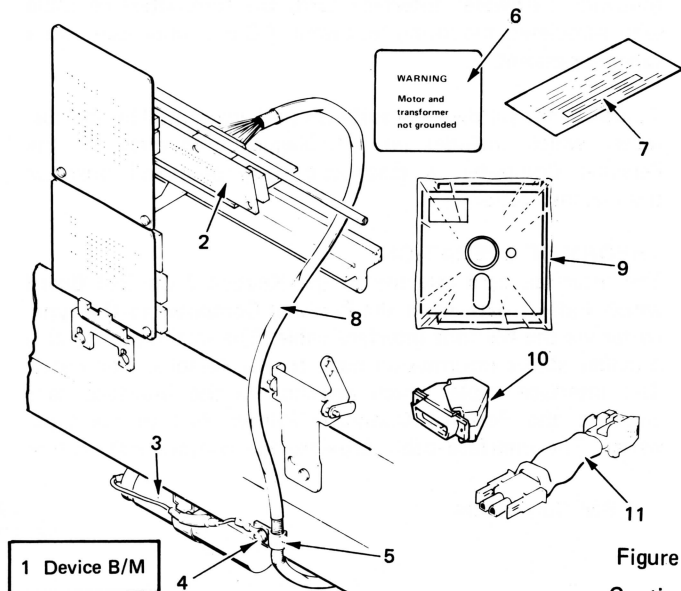


Figure 3

Continued

(CEM No. 301 Continued)

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION	QTY.
50	001 1301179	Device B/M (Hardware)	1
	002 1301236	Interface board (Level II)	1
	003 Ref only	Capacitor assembly	1
	004 Ref only	Screw	1
	005 Ref only	Clamp	1
	006 Ref only	Warning label	1
	007 Ref only	FCC label	1
	008 Ref only	Interface cable	1
	009 Ref only	IPL/Diagnostic Diskette	1
	010 Ref only	Wrap plug	1
	011 1301086	ARC suppressor	1

Ref 001 includes ref. 2, 3, 4, 5, 6, 7, 8 and 11

The IPL/Diagnostic Diskette and wrap plug are ordered thru IBM Direct only.

302 SERVICE INFORMATION 12-14-83

TYPE(S): 6714, 6724

SUBJECT: CORRECTING CENTERED HEADINGS

When correcting a centered heading, with an odd numbered combination of characters and spacebars typed in 10 or 12 pitch, use the "Reposition" correction method. This is necessary because the Model 65/85 centers the heading by unit spacing rather than character spacing.

Use Applicable Service Code

303 RELIABILITY 12-14-83

TYPE(S): 6713, 6723

SUBJECT: LEADSCREW PULLEY BREAKAGE

The manufacturing process of the lead screw pulleys (10-164, 167) has been improved to prevent cracking/breaking. The new pulleys are color coded for identification purposes: reverse-yellow and forward-blue.

CSR stock of the white (reverse) and grey (forward) pulleys should be scrapped locally. Replacement power modules and upper/lower shaft assemblies should be inspected before installation to verify the new yellow/blue pulleys are present. Power modules and upper/lower shaft assemblies are not to be returned as "New Defective" because of the presence of white/grey pulleys.

Use of Service Code 33 is authorized for replacement of white/grey pulleys whether in a machine or a replacement sub-assembly.

PARTS INFORMATION:

Part number remains the same.

MECH/REF	PART NO.	DESCRIPTION
10 164	1442793	Pulley, Reverse (Yellow)
10 167	1442792	Pulley, Forward (Blue)

Estimated Installation Time:

Power modules	.4 hr.
Upper/lower shafts	.1 hr.

Use Service Code 33

This CEM Expires 1-1-85

304 SERVICE INFORMATION 01-09-84
(Revised) 10-01-84

TYPE(S): 6714, 6724

SUBJECT: EXTENDED MEMORY PROTECTION ANNOUNCEMENT

Extended Memory Protection is now a standard feature on all Electronic Typewriters Model 85. The Extended Memory Protection utilizes CMOS (Complimentary Metal Oxide Semiconductor) technology which requires a minimum of power to maintain memory when line voltage is removed. The memory is maintained by three AA alkaline batteries that are customer replaceable. The batteries will maintain memory for approximately one year. Existing Model 65 and Model 85 typewriters can be field upgraded to a Model 85 with Extended Memory Protection. Field conversions are available via MES as follows:

- 1) Model 65 to Model 85 (Extended Memory Protection (16K))
- 2) Model 85 to Model 85 (Extended Memory Protection (16K))

CSR installation is included in the price of the upgrade kits.

The existing Model 65 to 85 Upgrade Kit will no longer be available.

The existing ½ hour Memory Protection Feature is still available via MES for field installation on existing Model 65 and Model 85. Plant installation is available for Model 65 only.

NOTE: CMOS is ESD sensitive, observe proper ESD handling procedures.

Estimated Installation Time: 1.0 Hour

Use Applicable Service Code

Protection

305 SERVICE INFORMATION 01-09-84

TYPE(S): 6714, 6724

SUBJECT: ANNOUNCEMENT OF THE IBM MODEL 95
TYPEWRITER WITH EXTENDED MEMORY
PROTECTION

The IBM Model 95 typewriter with Extended Memory Protection is an enhancement to the Model 85 typewriter with Extended Memory Protection. The Model 95 has a memory capacity of approximately 32K with Extended Memory Protection of approximately six months. Existing Model 65 and 85 typewriters can be field upgraded to a Model 95. Field conversions are available via MES as follows:

- 1) Model 65 to Model 95 (Extended Memory Protection (32K))
- 2) Model 85 to Model 95 (Extended Memory Protection (32K))
- 3) Model 85 (Extended Memory Protection (16K)) to Model 95 (Extended Memory Protection (32K))

CSR installation is included in the price of the upgrade kits.

Estimated Installation Time: 1.0 Hour

Use Applicable Service Code

306 SERVICE INFORMATION 01-09-84
(Revised) 11-12-84

TYPE(S): 6714, 6724

SUBJECT: EXTENDED MEMORY PROTECTION (CMOS)
MODEL 85/95

THEORY OF OPERATION:

When line voltage drops below approximately 90 VAC, three AA alkaline batteries will supply the necessary voltage to protect the memory. While in the protection mode, the machine will not be operational. When main power is restored, the machine will POR with memory intact. The batteries are customer replaceable and will maintain the 16K memory for approximately one year. Model 95 with 32K memory will maintain protection for approximately six months. Machines with Extended Memory Protection (CMOS) have no memory protection indicator light. The logic board monitors the battery voltage each time the motor switch is turned on. If the battery voltage is low (less than 4 VDC), the typewriter bell rings 100 times or until the "Store" button is depressed and released. Memory cannot be erased with the Main Power off if battery voltage is above 3.5 VDC. To clear all memory, two methods are available. Hold the "Del" and "Store" buttons down while turning on the motor switch. Continue to hold the buttons down until three "thumps" occur. Release the buttons and all message panel lights **except** "Wait" will be on. The second method is to remove the batteries and turn the Main Power off for five minutes.

COMPONENT DIFFERENCES:

The one piece logic board replaces the processor/driver board combination. The following additional components are: a **battery holder**, a **battery container** which includes the cable,

and an identifying **logo**. The battery container cable attaches to the logic board at a new L11 connector and is long enough to allow the logic board to be removed from the machine for diagnostic purposes without losing memory. For 32K memory the addition of a +16K board is required. See Figure 1 for component locations.

DIAGNOSTICS:

Three diagnostic charts have been changed to reflect a machine with Extended Memory Protection installed. These are the Bell Chart (Figure 2), the Replacement Chart 1 (Figure 3), and the Replacement Chart 2 (Figure 4).

NOTE: All existing Diagnostic Manuals may be used on Model 85/95 with the Extended Memory Protection. When a block refers to the processor or driver board connector, the same action would apply to the new logic board.

All the connector numbers and pin numbers are the same as the existing Processor/Driver Board.

NOTE: CMOS is ESD sensitive, observe proper ESD handling procedures.

CHECKOUT PROCEDURE: Low Battery Indicator

- Turn the motor switch off. Remove the battery holder. Turn on the motor switch. The bell should ring 100 times or until the "Store" switch is depressed and released. If bell does not ring or will not turn off, follow the new bell chart for diagnostics and repair actions.

NOTE: Before continuing, reinstall the battery holder.

- To verify memory protection store some characters in document "A". Play document "A". Turn off the Main Power switch for five seconds. Turn the Main Power and the motor switches on. Play document "A". If document "A" will not play after turning the motor and Main Power switches on, follow the new bell chart for diagnostics and repair actions.

CHECKOUT PROCEDURE: 32K Memory

- To verify 32K memory use the following procedure.
 1. Turn motor switch off.
 2. Depress and hold "Del" and "Store" buttons while turning the motor switch on.
 3. After 3 "thumps" (print shaft cycles) release the "Del" and "Store" buttons.
 4. At this time all message panel lights except "Wait" should be on.
 5. Type 100 characters in document "A".

NOTE: All characters on the 92 character keyboard in upper and lower case plus 2 carrier returns = 100 characters (96 character keyboard requires only 1 carrier return = 100 characters).
 6. Depress "Rtn" and the # 1 once.
 7. Depress "Adv" and the # 1 nine times.
 8. Depress "Rtn" and the # 2 once.
 9. Depress "Adv" and the # 2 nine times.
 10. Depress "Rtn" and the # 3 once.
 11. Depress "Adv" and the # 3 once.

NOTE: At this time there should be 31,100 characters in memory.
 12. Depress "Adv" and the #3. The bell should ring.
 13. Depress "Adv" and the # 2. The bell should ring.
 14. Depress "Adv" and the # 1 nine times. The bell should not ring until after the eighth time.

(Continued)

(CEM No. 306 Continued)

After successful completion of the above checks and a complete functional check, turn the motor switch off. Depress and hold "Store" and "Del" while turning on the motor switch and continue to hold "Store" and "Del" for three print shift cycles to erase the memory.

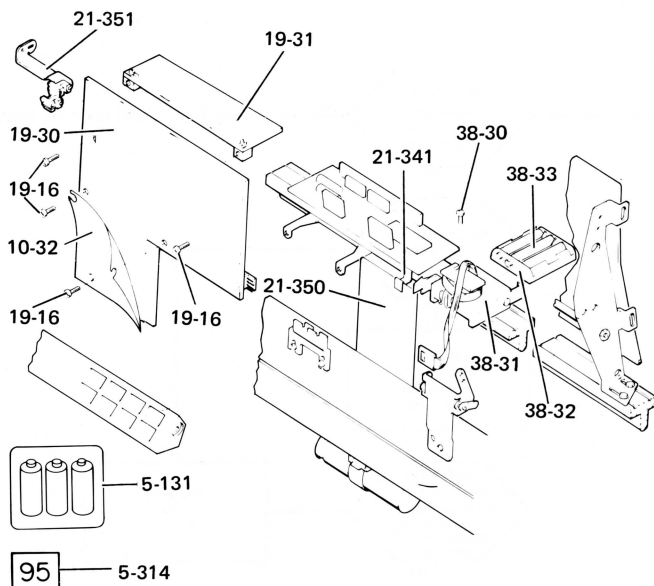


Figure 1

WORLD TRADE PARTS:

MECH/REF	PART NO.	DESCRIPTION - BOARD LOGIC
19	30 1301075	US - Canada English/Canada Bilingual
	30 1301076	French - Belgium/Denmark
	30 1301077	Austria - Germany/Italy
	30 1301078	Swiss German/Swiss French
	30 1301079	United Kingdom/Japan - English
	30 1301080	Netherlands/Norway
	30 1301081	Sweden/Finland - Spain
	30 1301082	Puerto Rico - Latin America/ South Africa

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
05	131 1436669	Logo, Extended Memory Protection
05	314 1436640	Logo, Model 95
19	16 1164580	Screw, +16K Mounting
19	30 1301075	Board, Logic (16K) (US)
19	31 1301189	Board, +16K
10	32 1436662	Insulation, Logic Board
21	341 1440127	Clip, Cable Shield Mounting
21	350 1436686	Shield, Cable
21	351 1436658	Bracket, Logic Board Mounting
38	30 0734483	Screw, Battery Container Mounting
38	31 1436659	Container, Battery
38	32 1436656	Holder, Battery
38	33	Batteries (Customer Supplied)
19	24 1448083	Jumper

(Continued)

(CEM No. 306 Continued)

BELL CHART

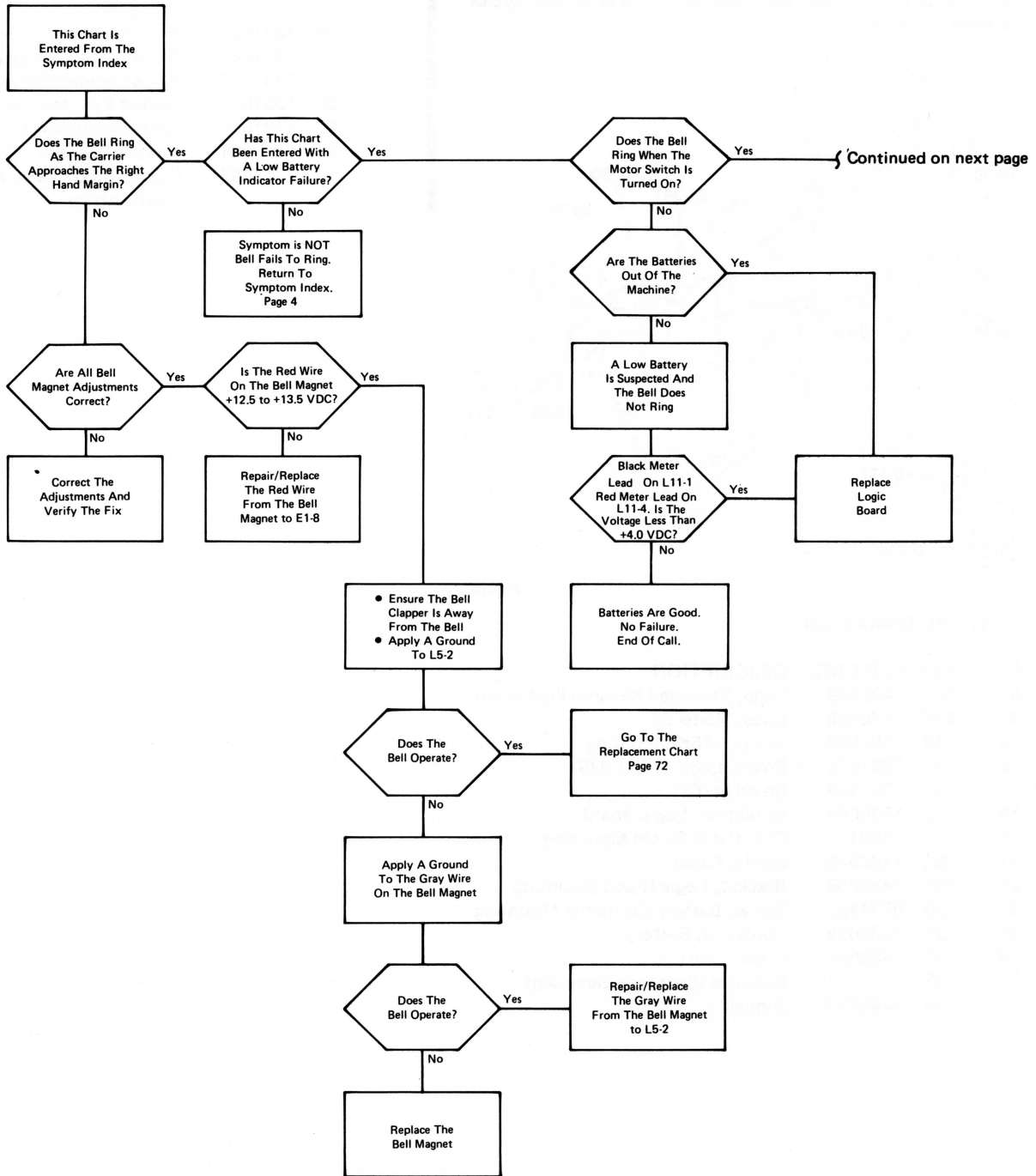
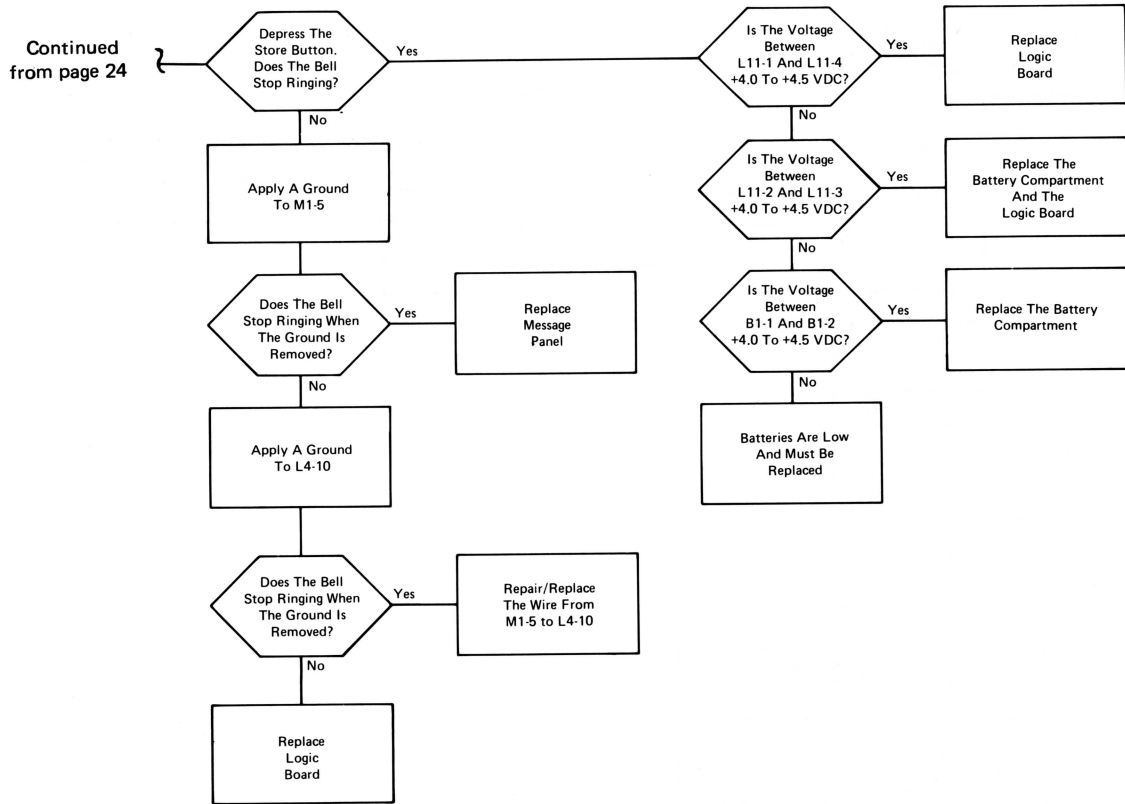


Figure 2

(Continued)

(CEM No. 306 Continued)

BELLCHART



(Continued)

(CEM No. 306 Continued)

REPLACEMENT CHART 1

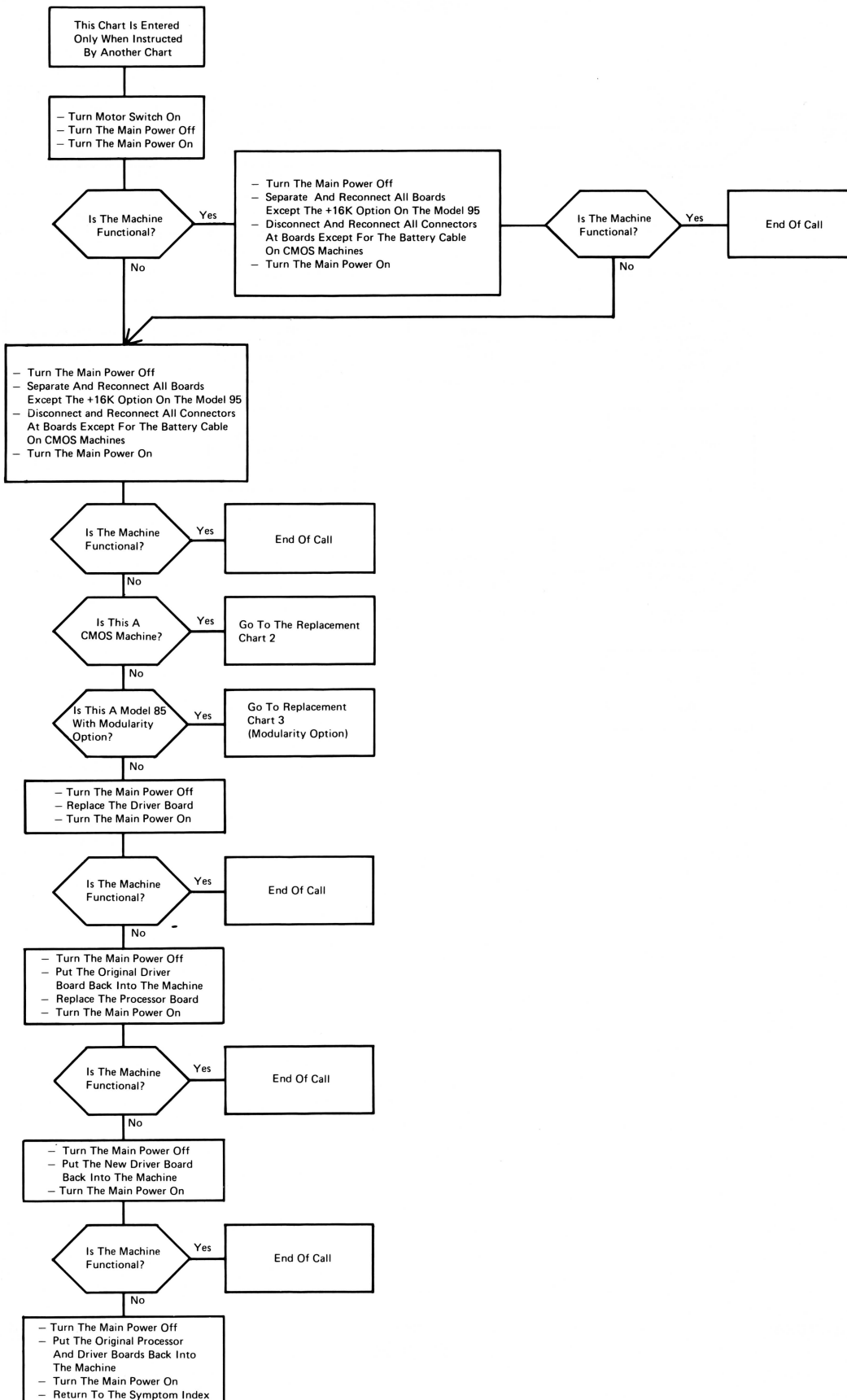


Figure 3

(CEM No. 306 Continued)

REPLACEMENT CHART 2

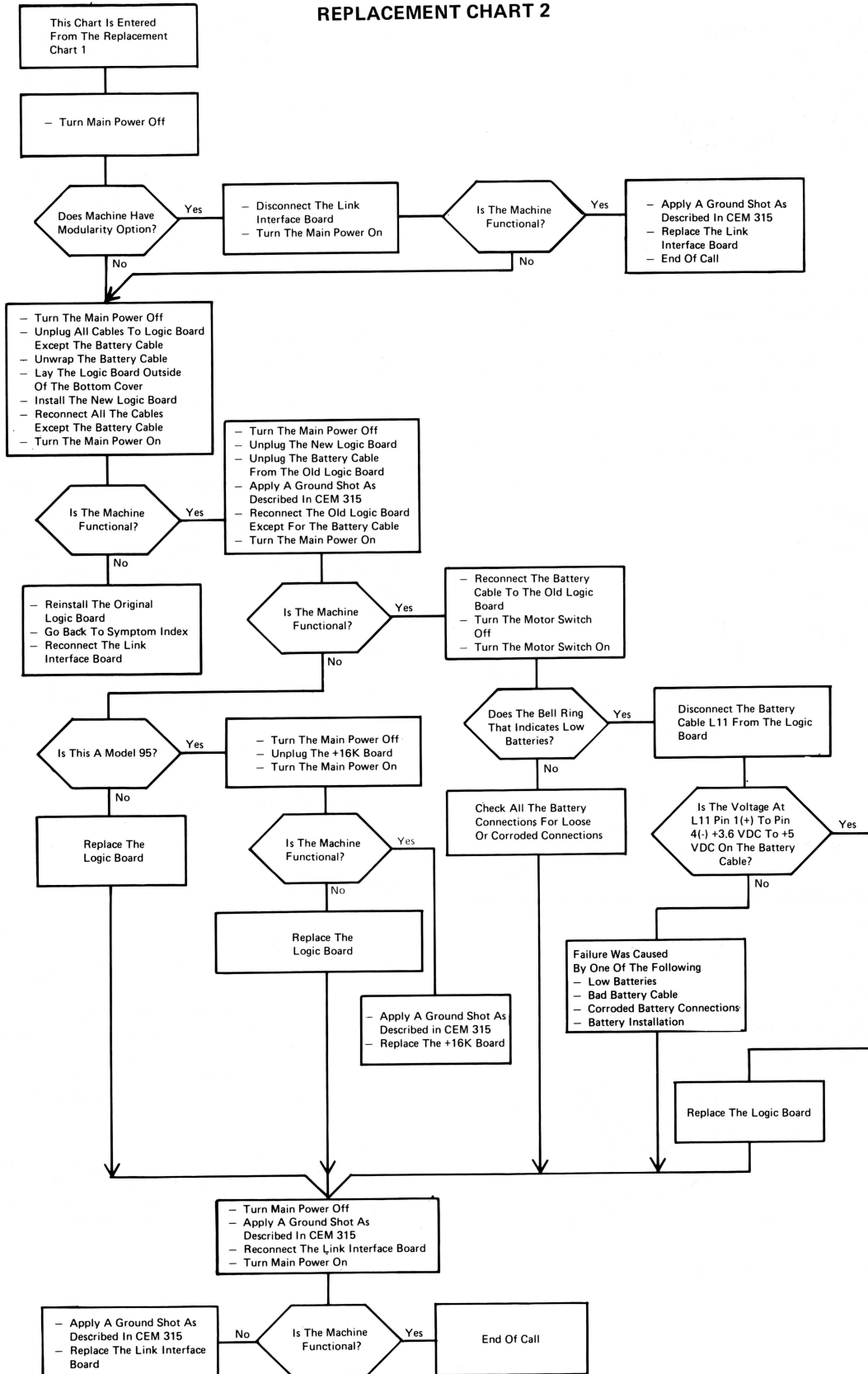


Figure 4

307 RELIABILITY

1-24-84

PARTS INFORMATION:

Type(s): 6714, 6724

SUBJECT: PRINT SHAFT CYCLE CLUTCH B/M -
REDESIGNED

MACHINES AFFECTED:

Plant installed above S/N 6714-7074603
6724-7508182.

A redesigned Print Shaft Cycle Clutch B/M is now available to prevent spring and gear breakage. The new B/M contains a redesigned PSCC Spring (11-207), Sleeve (11-210), Spring Clamp (11-208), Clamp Screw (11-209), PSCC Gear (11-206) and the Print Shaft Gear (11-234).

The width of the PSCC Gear (11-206) and the Print Shaft Gear (11-234) has been increased.

NOTE: The Print Shaft Cycle Clutch Spring adjustment has been changed to .030" - .055" (0.76 - 1.4 Omm).

MECH/REF	PART NO.	DESCRIPTION	QTY
11	207 Ref. Only	Order 212	1
	208	Clamp, PSCC Spring Lvl 2	1
	209	Clamp Screw, PSCC Spring Lvl 2	1
	210	Sleeve PSCC	1
	212	B/M, PSCC Lvl 2 (includes Ref. 206, 207, 208, 209, 210, 211, 234)	1

PARTS AVAILABILITY:

Level 1 PSCC B/M is obsolete.

Use Service Code 33

This CEM Expires 1-24-85

308 SERVICE INFORMATION

1-24-84

Type(s): 6713, 6723

SUBJECT: ESCAPEMENT MAGNET – IMPROVED

The Model 50/60/75 escapement magnet yoke has been increased to prevent breakage. The new magnet will continue to have a white grease guard for identification. The magnet will be packaged with 2 longer mounting screws. Adjustments remain the same.

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
06	49 1117759	Screw, 50/60/75 Magnet Mounting
06	64 1301235	Magnet, 50/60/75 Escapement

Use Applicable Service Code

309 SERVICE INFORMATION

1-24-84

Type(s): 6714, 6724

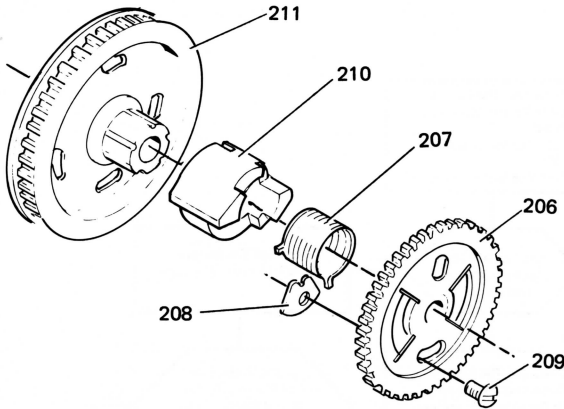
SUBJECT: ESCAPEMENT MAGNET – NEW GUARD

The Model 65/85 escapement magnet is now manufactured with a black grease guard (06-63). The color of the guard was changed to provide a visible means to distinguish the model 65/85 escapement magnet from the 50/60/75 escapement magnet which has a white grease guard.

PARTS INFORMATION:

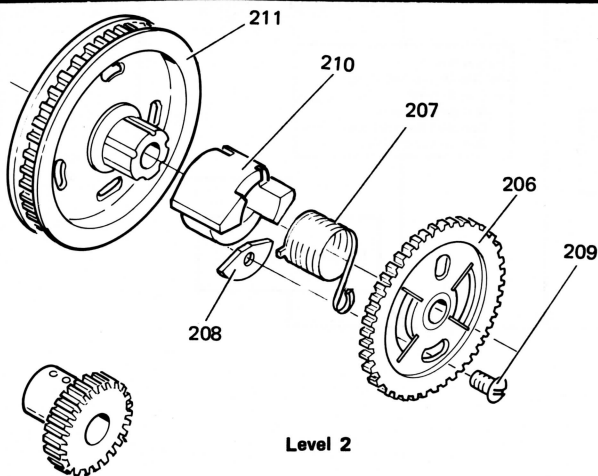
MECH/REF	PART NO.	DESCRIPTION
06	63 1436445	Guard, Escapement Magnet(Black)
06	64 1303971	Magnet, 65/85 Escapement

Use Applicable Service Code



Level 1

Figure 1



Level 2

Figure 2

Level 2 only

310 RELIABILITY 01-24-84

TYPE(s): 6713, 6723, 6714, 6724

SUBJECT: XTDT-II NEW LEVEL EPROM

A new level EPROM is now available for the XTDT-II. The new EPROM will correct two conditions:

1. Allow P-3 test to run without getting a "PICK FAST" Message on properly adjusted pinblock solenoids.
2. Allows more than 80 characters to be entered in the "BI" mode without printing a "MISSED ESCAPEMENT" message. If more than 80 characters are entered, then the XTDT-II will enter the "command" mode and will be ready for play back.

NOTE: The new level EPROM may be identified in two ways:

1. EPROMS are labeled XTDT-II 09-01-83
2. A small "a" will print after the EC number (type "ec").

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
2	1436443	XTDT-II EPROM

Part Number remains the same.

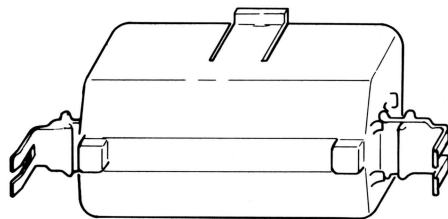
Use Service Code 33 This CEM Expires 01-24-85

311 SERVICE INFORMATION 02-06-84

TYPE(s): 6713, 6723, 6714, 6724

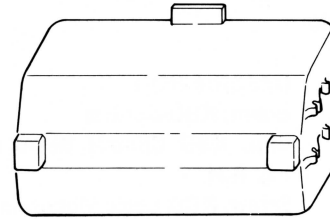
SUBJECT: XTDT-II NEW LEVEL CARRIER CABLE SUPPORT BOX

A new level carrier cable support box is now available for the XTDT-II. The thickness of the material has been increased and the cutouts on the left and right sides of the box have been removed, (Figure 1). These changes will prevent the box from separating from the XTDT-II board assembly during use.



Level 1

Figure 1



Level 2

Figure 2

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
4	9900744	Carrier cable support box

Use Applicable Service Code.

312 RELIABILITY 03-05-84

TYPE(s): 6714, 6724

SUBJECT: KEYBOARD EDGE CONNECTOR FAILURE

When a malfunctioning row or column of keybuttons is encountered, the problem may be caused by poor connection between the keyboard control board (21-301) and the keyboard (21-303). The following procedure can be used to correct this problem: Loosen keyboard logic clip mounting screws (21-305), disconnect keyboard control board (21-301) from keyboard and clean the keyboard edge connector (visible oxidation may be cleaned with an eraser). Loosen both keyboard logic mounting screws (21-304). When reinstalling the parts, tighten keyboard logic clip mounting screws (21-305), before tightening the keyboard logic mounting screws (21-304). This procedure will help eliminate any stressful condition between keyboard edge connector, keyboard logic mounting clips (21-302, 306) and keyboard control board. (Figure 1)

NOTE: Some early level keyboard logic mounting clips (21-302, 306) were shorter and affected the edge connector's reliability by forcing the top of the connector upwards, opening its contacts. If, when reconnecting, the keyboard control board edge connector and the keyboard edge connector cannot be aligned without downward pressure to the connector, replace the keyboard logic mounting clips.

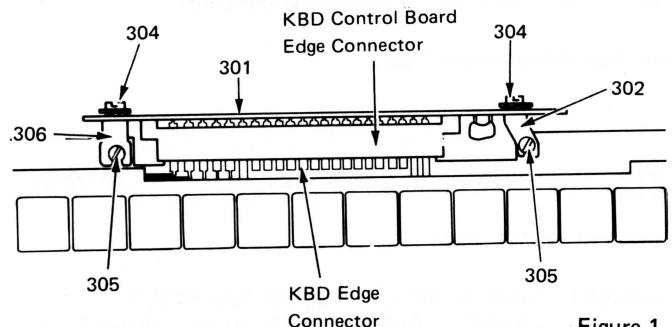


Figure 1

is Turned Off on 85/95 CMOS Logic Boards
 (CEM No. 312 Continued)

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
21 301	1303449	Board, KBD Control
	302 1437141	Clip, KBD Control Board Mounting, R.H.
	304 1437268	Screw, KBD Logic Mounting
	305 1437294	Screw, KBD Logic Clip Mounting
	306 1437142	Clip, KBD Control Board Mounting, L.H.

Estimated Repair Time: .4 Hr.

Use Service Code 33 This CEM Expires 03-05-85

313 SERVICE INFORMATION 04-16-84

TYPE(S): 6713, 6723, 6714, 6724

SUBJECT: MESSAGE CONTROL PANEL GUARD

A message control panel guard (20-75) is now available for installation on Models 65, 75, 85 and 95. The new guard, when installed, will prevent accidental depression of the message panel buttons. The guard can also be used to eliminate unwanted message panel operations when diagnosing system busy problems.

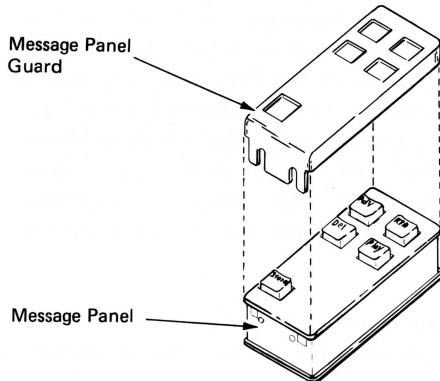


Figure 1

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
20 75	1301190	Guard, message panel

Use Applicable Service Code.

314 SERVICE INFORMATION 04-30-84

TYPE(S): 6714, 6724

SUBJECT: MARGIN BELL RINGS OR THE INDEX
 MAGNET PICKS WHEN MAIN POWER IS
 TURNED OFF

MACHINES AFFECTED:

Serial Range 6714-7100960, 6724-7511486 all models
 65/85/95

6713/6714

Driver modules are electrical components mounted on our electronic boards that control the magnets in the typewriter. Some driver modules exhibit an unusual characteristic when main power is turned off. When used on the CMOS logic board, the bell will ring when main power is turned off. When used on the escapement control board, the index magnet will pick when main power is turned off. These are normal characteristics of these driver modules and should not be diagnosed as a machine failure. NOTE: These characteristics will not be exhibited when the motor switch is turned off.

Use Applicable Service Code.

315 SERVICE INFORMATION 04-30-84
 (Revised) 09-04-84

TYPE(S): 6714, 6724

SUBJECT: INSTALLATION OF MODULARITY OPTION
 OR THE +16K BOARD MES ON 85/95 CMOS
 LOGIC BOARDS

When Modularity Option or the +16K Board is installed on the 85/95 CMOS typewriter an initialization process must occur to ensure reliable operation of the installed device.

To initialize the CMOS board prior to installation, the main power must be turned off and the batteries must be removed, then a ground shot must be applied to the CMOS Board. This is done to bleed off any charge that is held by the capacitors on the memory modules.

Apply a ground to the CMOS logic board as illustrated in Figure 1 prior to installation of either modularity option or +16K. Use the appropriate MES installation instructions for the remainder of the installation.

GROUND SHOT PROCEDURE:

1. Main power off.
2. Remove the battery pak.
3. Connect one end of the meter probe to either frame ground or power supply ground.
4. Apply a ground as illustrated in Figure 1.
5. Install the link interface board or +16K board as needed.
6. Re-install the batteries.
7. Main power on.
8. Verify the machine operation.

(CONTINUED)

(CEM 315 Continued)

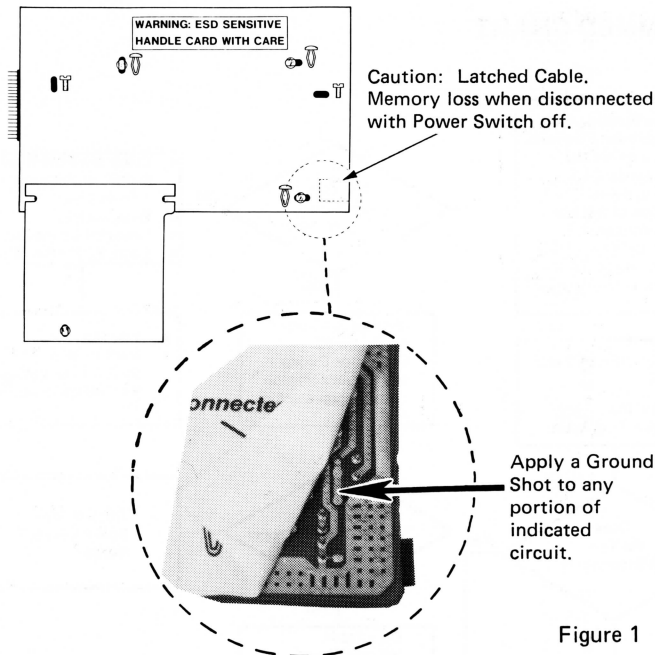


Figure 1

NOTE: Prior to installation of either modularity option or the +16K board, the operator must be informed that the memory will be lost.

Use Applicable Service Code.

316 SERVICE INFORMATION 04-30-84

TYPE(S): 6714, 6724

SUBJECT: PLATEN REMOVAL PROCEDURE

Care should be exercised to avoid trapping a finger between the RH platen latch and the top cover when removing the platen. Either of these suggested procedures may be used to remove the platen:

- A)
 1. Pull the platen detent release lever forward.
 2. Release both platen latches.
 3. Remove the platen.
- B)
 1. Insert the blade of a small screwdriver as shown in Fig. 1. (Note: Blade is positioned behind the RH platen latch stop lug.)
 2. Move the screwdriver handle to the rear, releasing the RH platen latch.
 3. Release the LH platen latch.
 4. Remove the platen.

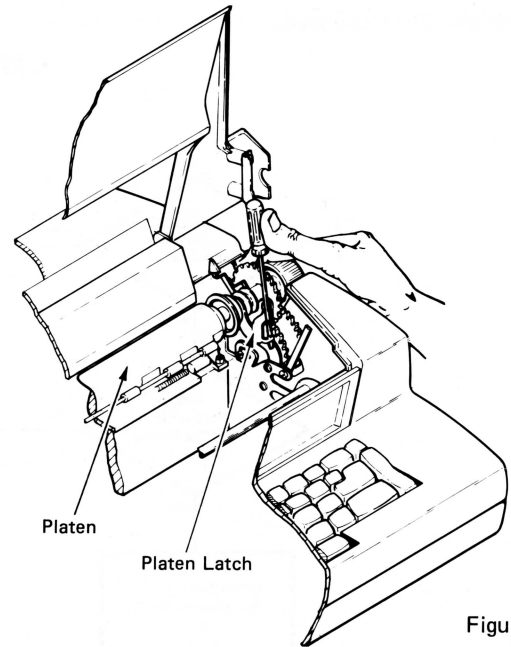


Figure 1

NOTE: File smooth any rough edges found on the top cover in the area of the RH platen latch.

Use Applicable Service Code

317 SERVICE INFORMATION 05-29-84

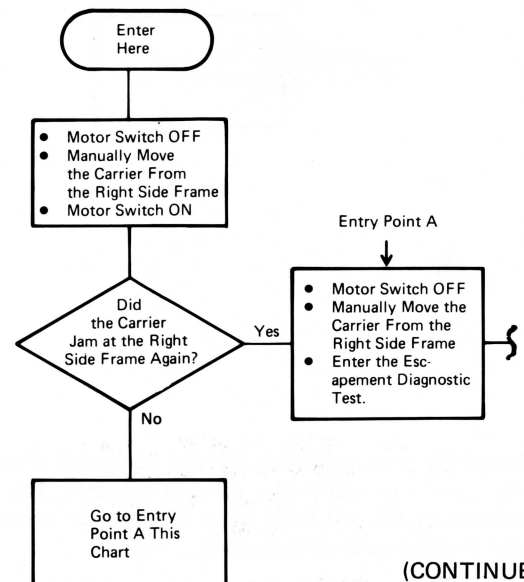
TYPE(S): 6714, 6724

SUBJECT: NEW DIAGNOSTIC FLOW CHART – CARRIER JAMMED CHART

PURPOSE:

When experiencing machines with the carrier jammed at the right hand side frame, use the following flow chart to help isolate the cause of failure.

CARRIER JAMMED CHART

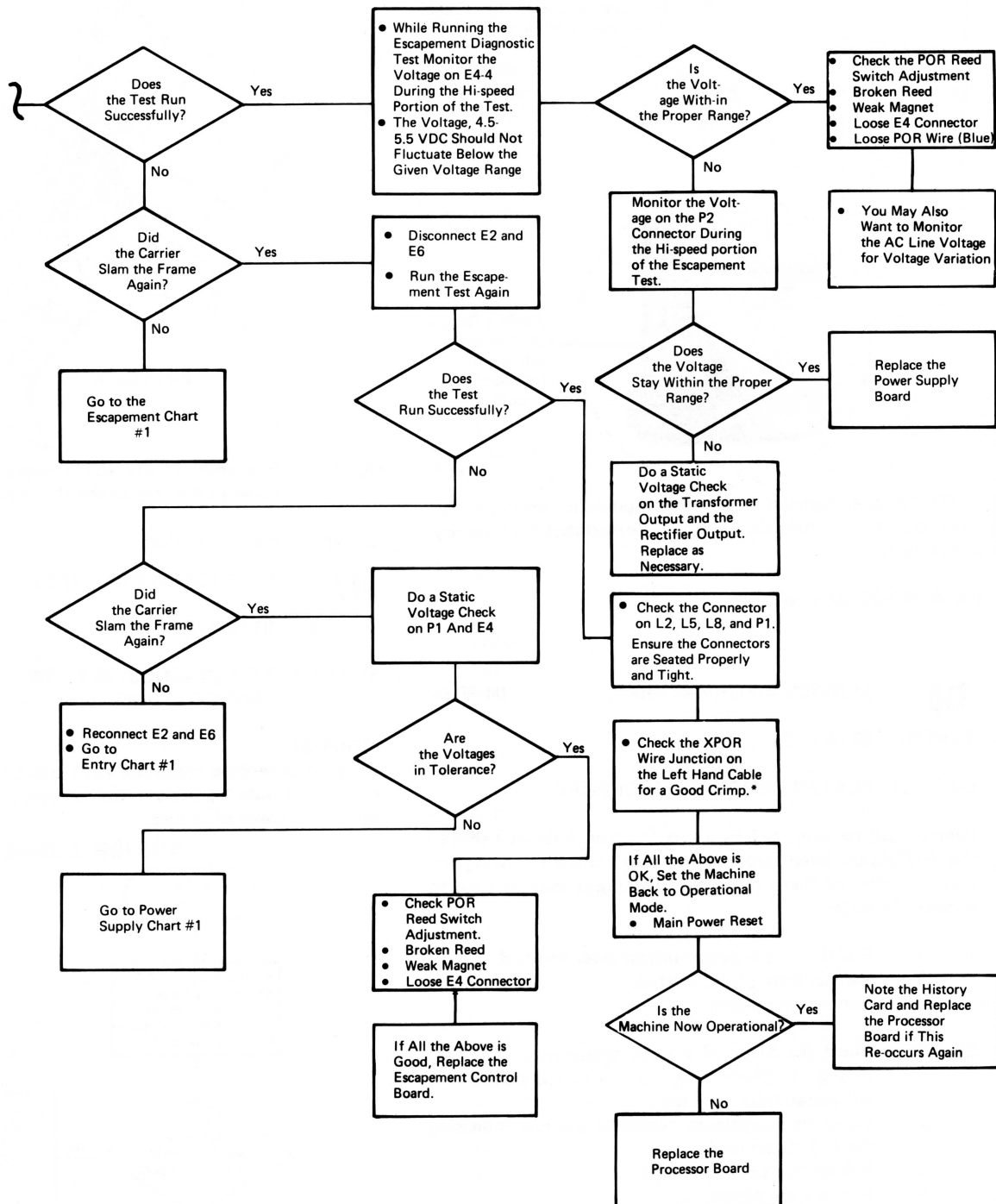


(CONTINUED)

6713/6714

(CEM No. 317 Continued)

CARRIER JAMMED CHART



*The XPOR wire junction is a crimp connector with two yellow wires and one white wire crimped together. The junction is located on the left hand cable between the processor board and the keyboard control board.

Use Applicable Service Code

318 SERVICE INFORMATION 05-29-84

TYPE(S): 6714, 6724

SUBJECT: DELETING MEMORY ON 85/95 CMOS

CMOS machines can retain memory with the main power off and the batteries removed for a period of 1-15 minutes. This is a result of various manufacturers of the memory modules. These memory modules utilize capacitors to store voltage to maintain their memory.

To erase the memory and reinitialize the machine, use either of the following procedures:

1.
 - Main power off and remove the batteries
 - Wait 15 minutes for the capacitors to discharge
 - Re-install the batteries and main power on
 - Verify the machine operation

2.
 - Main power off and remove the batteries
 - Apply a ground shot to the CMOS logic board as described in CEM #315. This will delete the memory immediately.
 - Re-install the batteries and main power on
 - Verify the machine operation

These procedures must be used prior to any CMOS board replacement or whenever all memory must be deleted.

Note: These procedures will reinitialize the machine while the procedure of pressing Store and Delete as described in CEM #306 only erases the customers memory.

319 RELIABILITY 06-25-84
(Revised) 07-09-84

TYPE(S): 6714, 6724

SUBJECT: 65/85/95 KEYBOARD ASSEMBLY
SEPARATION-DEFECTIVE TENON

MACHINES AFFECTED:

Below Approx. S/N
Type 6714 7101130
Type 6724 7511360

A new manufacturing process has been implemented to eliminate separation of keyboards due to cracked or broken tenon. Keyboard separation can result in single or multiple keybutton failures. If this condition is encountered replace the keyboard.

Use Service Code 33

This CEM expires 06-07-85

320 RELIABILITY 07-23-84
(Revised) 10-15-84

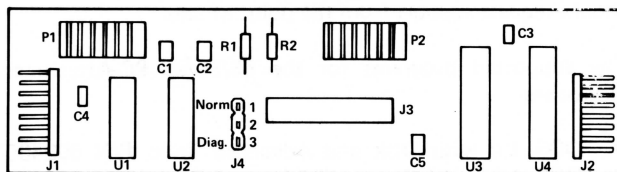
TYPE(S): 6714, 6724

SUBJECT: DROPPING CHARACTERS 65/85/95
PC-ATTACHMENT DEVICE

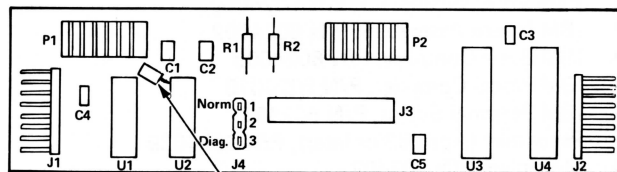
A level II PC-Attachment Interface Board is now available for machines that are experiencing dropped characters with no space or dropped functions such as space bar, tab, index or carriage returns.

If experiencing any of these symptoms only while the typewriter is utilized as a trail printer replace the interface board (Mech 50, Ref. 002).

The level II board has an added capacitor as illustrated below.



Level I



Level II

Figure 1

Hardware MES kit P/N 1301179 with a date code of June 1984 or later contains the level II interface board.

PARTS INFORMATION:

MECH/REF	PART NO.	DESCRIPTION
50 002	1301236	Interface Board (Level II)

Estimated Installation Time: 0.4 Hr.

Use Service Code 33

This CEM Expires 07-01-85

321 SERVICE INFORMATION 08-06-84

TYPE(S): 6714, 6724

SUBJECT: PC-ATTACHMENT PROBLEM ISOLATION
CHART

The PC-Attachment Problem Isolation Chart assists in isolating failures between the 65/85/95 PC-Attachment Device and the IBM Personal Computer. The Isolation Chart will also provide **direction** for assistance with software and hardware problems.

The PC-Attachment Device supports 11 software programs. Support for these programs can be obtained from IBM Direct. Questions regarding software programs that are not listed but are sold under the IBM logo can also be directed to IBM Direct or the IBM Product Center. Support for programs that are **not** sold under the IBM logo is not available from IBM Direct and should request support from the point of sale.

The supported programs for the 65/85/95 PC-Attachment Device are:

- DOS 1.0 with Disk and Advanced Basic, P/N 6024001
- DOS 1.1 with Disk and Advanced Basic, P/N 6024001
- DOS 2.0 with Disk and Advanced Basic, P/N 6024061
- Visicalc version 1.1, P/N 6024004
- Easywriter version 1.1, P/N 6024005
- IBM Macro Assembler, P/N 6024002
- IBM Basic Compiler, P/N 6024003
- IBM Pascal Compiler, P/N 6024010
- IBM Personal Editor, P/N 6024051
- Peachtext (April 83 or later), P/N 6024039
- Multiplan, P/N 6024022

Some of these programs require a minimum of memory within the Personal Computer. If needed this information is available from Marketing, IBM Product Center or IBM Direct.

There are several original equipment manufacturers (OEM) that make printer boards and expansion boards that are located inside the PC that enable the IBM Personal Computer or the IBM Personal Computer XT to expand its memory capability and/or add optional features. Some OEM boards require jumpering of certain pins on the board to meet the printer requirements that are needed for the typewriter. Under no circumstances is the CSR to attempt to modify an OEM board. It is the **Customer's responsibility** to ensure the OEM boards support the pin requirements for the 65/85/95. All IBM printer boards support the printer requirements for the 65/85/95 typewriter without any modification to the board.

The pin requirements for all printer boards and all expansion boards to enable proper function with the 65/85/95 are as follows:

- Pin 1 — Strobe input to the typewriter used to control who is typing (the PC or the typewriter keyboard).
- Pin 2-9 — Data input lines from the PC to the typewriter.
- Pin 10 — Acknowledge input to the PC used to send print feedback.
- Pin 14 — Auto Feed input to the typewriter used to set the polarity of PPFB for the PC. PPFB is a signal used by the PC for feedback timing for the transmission of characters from the PC to the typewriter.

The PC-Attachment interface cable connector is connected to either the IBM Monochrome Display Board or an IBM Printer Board. These boards are located inside of the Personal Computer. The back of the PC has access slots for the interface cable to plug into.

Examples of various problems with 65/85/95 PC-Attachment Device:

1. Problem

Typewriter prints slow during output from the PC.

Probable Cause

Customer using OEM board in the PC.

Solution

Give the customer the printer pin requirements. The absence of pin No. 14 signal is the primary cause of this problem.

2. Problem

Typewriter does not work when the PC is turned off.

Probable Cause

Customer using OEM board in the PC.

Solution

Give the customer the pin requirements. The absence of pin No. 1 signal is the primary cause of this problem.

3. Problem

Typewriter drops characters when used as a trail printer.

Probable Cause

Incompatibility between the typewriter level I Printer Interface board and the PC Monochrome Display Card.

Solution

Install level II Interface board. (P/N 1301236.)

4. Problem

Typewriter drops spaces in proportional spacing mode.

Probable Cause

Proportional spacing does not work reliably when connected with the PC.

Solution

Have the customer contact IBM Direct for assistance.

5. Problem

Turning off the typewriter when connected to the PC locks up the PC.

Probable Cause

Failed arc suppressor (supplied with the PC-Attachment Device)

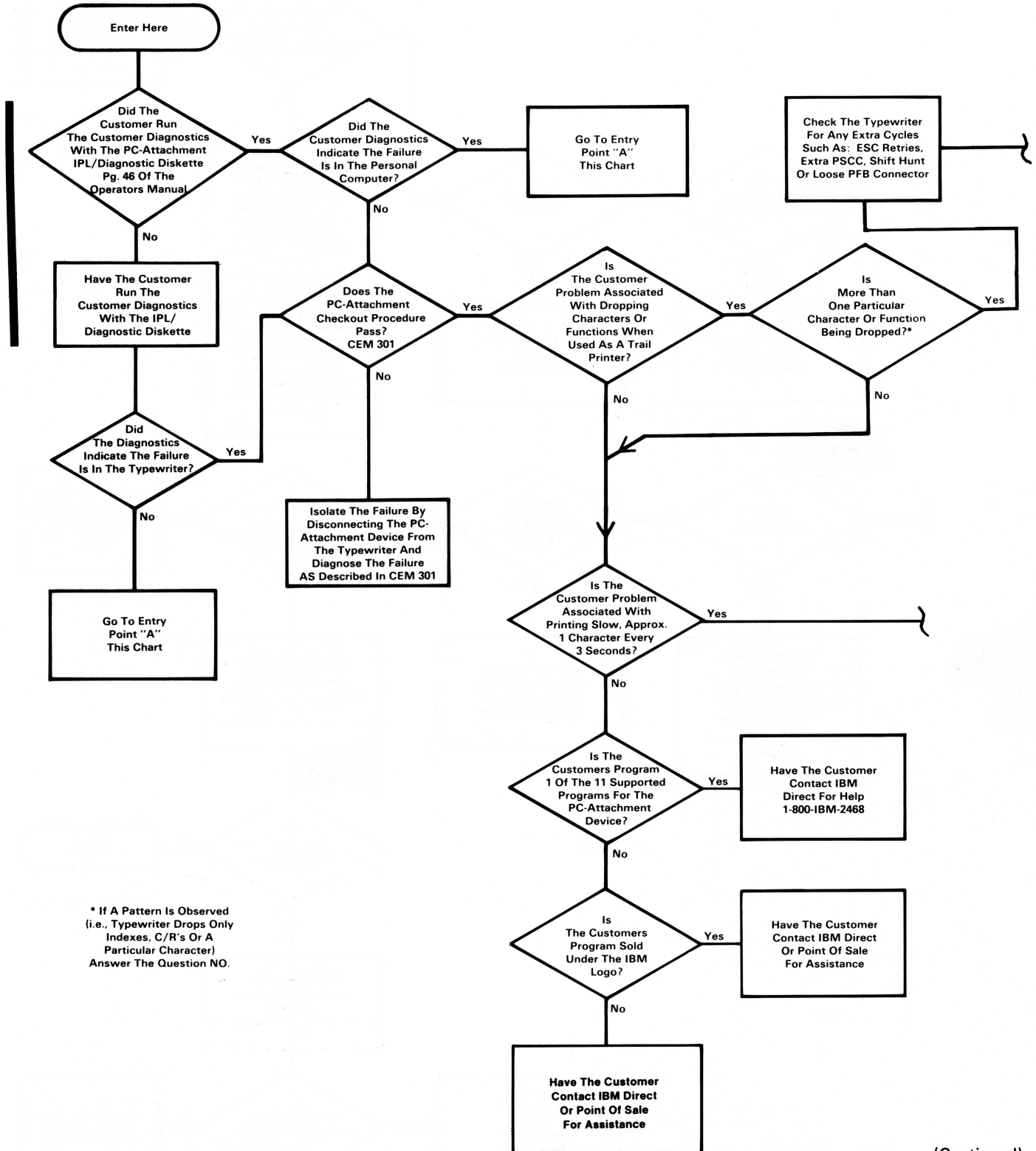
Solution

Replace the arc suppressor. (P/N 1301086)

(Continued)

(CEM No. 321 Continued)

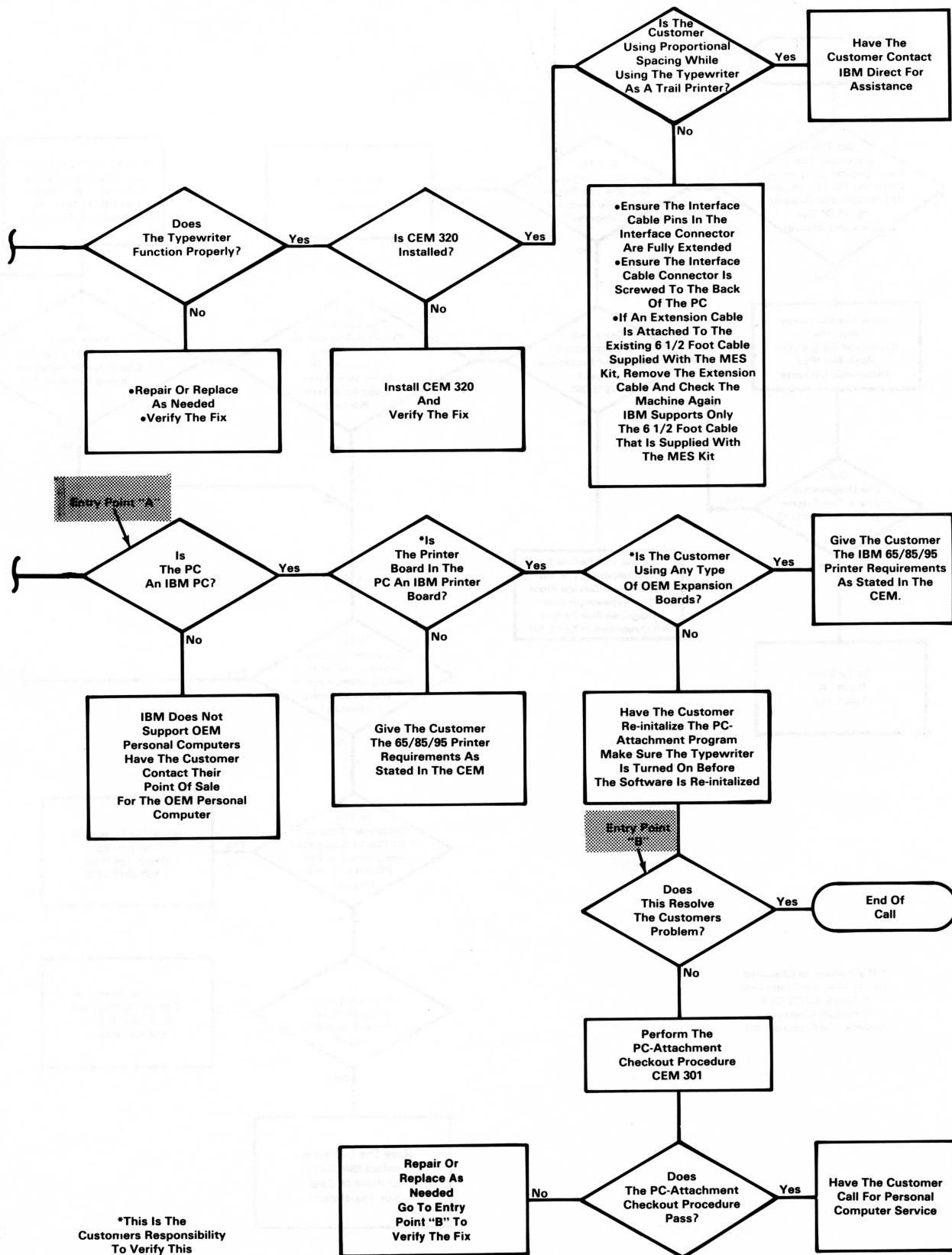
65/85/95 PC-Attachment Problem Isolation Chart



* If A Pattern Is Observed (i.e., Typewriter Drops Only Indexes, C/R's Or A Particular Character) Answer The Question NO.

(Continued)

(CEM No. 321 Continued)



*This Is The Customers Responsibility To Verify This

322 SERVICE INFORMATION 08-06-84
(Revised) 11-12-84

TYPE(S): 6714, 6724

SUBJECT: NEW VERSION SOFTWARE FOR 65/85/95
PC-ATTACHMENT DEVICE

A new version (2.20) of the IPL/Diagnostic Diskette is now available. Version 2.20 corrects a software error associated with multiple underscore instructions that are on the same line. The symptom that was resolved with version (2.0) is a hesitation prior to each underscore operation on that line.

Customers who wish to purchase version 2.20 (Software MES Kit 1301180) should contact IBM Direct or the IBM Product Center.

Software MES kits P/N 1301180 with date code of July 1984 or later will contain the new version software (2.20).

When diagnosing PC-Attachment problems with this symptom use Service Code 01.

323 SERVICE INFORMATION 09-04-84

TYPE (S): 6713, 6723, 6714, 6724

SUBJECT: TILT RING PINS MANUFACTURING PROCESS
CHANGE

The manufacturing process of the tilt ring pins on the Electronic Typewriters has changed. For control purposes, P/N 1436916 was released. The current tilt ring pins P/N 1446067 will continue to be used on "Selectric." When a replacement of a tilt ring pin is needed on all Electronic Typewriters, order the new part number.

Use Applicable Service Code.

324 SERVICE INFORMATION 09-04-84

TYPE(S): 6713, 6714, 6723, 6724

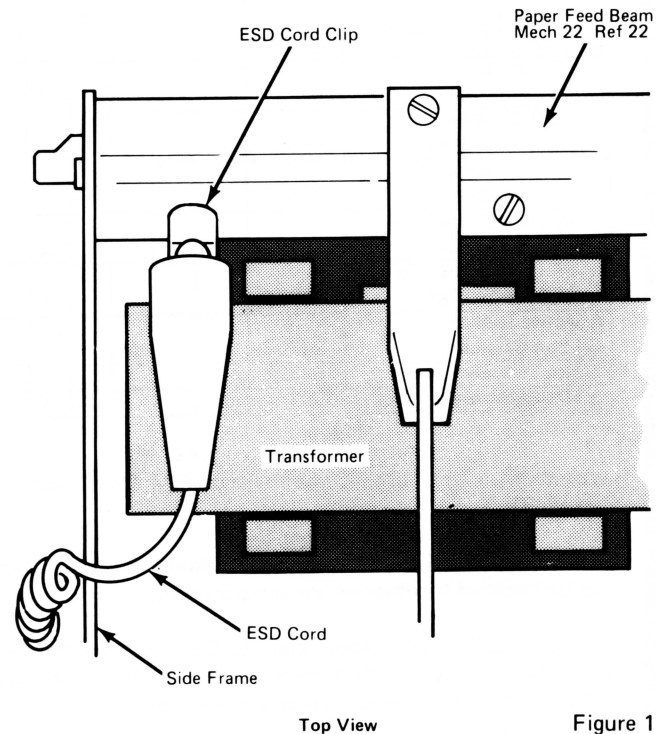
SUBJECT: ESD CORD CONNECTION POINT

As stated in the IBM video "When ESD Strikes", the ESD Handling Kit should be used to protect electronic boards from ESD damage. When servicing of the Electronic Typewriter requires handling of the electronic boards the proper connection point for the clamp of the ESD cord is the left end of the paper feed beam (Mech. 22, Ref. 22) directly above the transformer.

This point is free of paint and black anodize, therefore it allows good continuity. Insure the surface at the connection point is also free of grease.

With the ESD cord properly connected the machine can be tilted into the service position without effecting the cord.

The IBM video "When ESD Strikes" is available in each branch office. The ESD Handling Kit is P/N 6428316. Wrist bands to be used with the kit must be ordered separately. Size small P/N 6428167 is for wrist circumferences less than 6½ inches (165.1 mm). Size large P/N 6428169 is for wrists greater than 6½ inches (165.1 mm).



Top View

Figure 1

325 SERVICE INFORMATION 11-12-84

TYPE(S): 6713, 6714, 6723, 6724

 SUBJECT: MES NUMBERS AND TYPEWRITER
 CONFIGURATIONS

MES NAME	MES#	MACHINE TYPE					
		50	60	75	65	85	95
65/85/95-PC Attachment	8566				X	X	X
Modularity Option	8560 +					X	X
85 (NMOS-16k) To 95 (CMOS-32k)	8535					X	
65 (NMOS-8k) To 85 (CMOS-16k)	8531				X		
65 (NMOS-8k) To 95 (CMOS-32k)	8534				X		
85 (NMOS-16k) To 85 (CMOS-16k)	8532					X	
85 (CMOS-16k) To 95 (CMOS-32k)	8533					X	
Selective Ribbon To Ribbon Cassette	9025 *	X	X	X			
½ Hour Memory Protect	5933			X			
½ Hour Memory Protect	5931				X	X	

* Installation charge not included in price of MES.

 + Used with the IBM Diskette and IBM Communication
 Modules.

NOTE: 65/85/95-PC Attachment and Modularity Option cannot be installed together on the same machine.

NOTE: NMOS Technology refers to the two piece processor and driver board. CMOS Technology refers to the one piece logic board with extended memory protection.

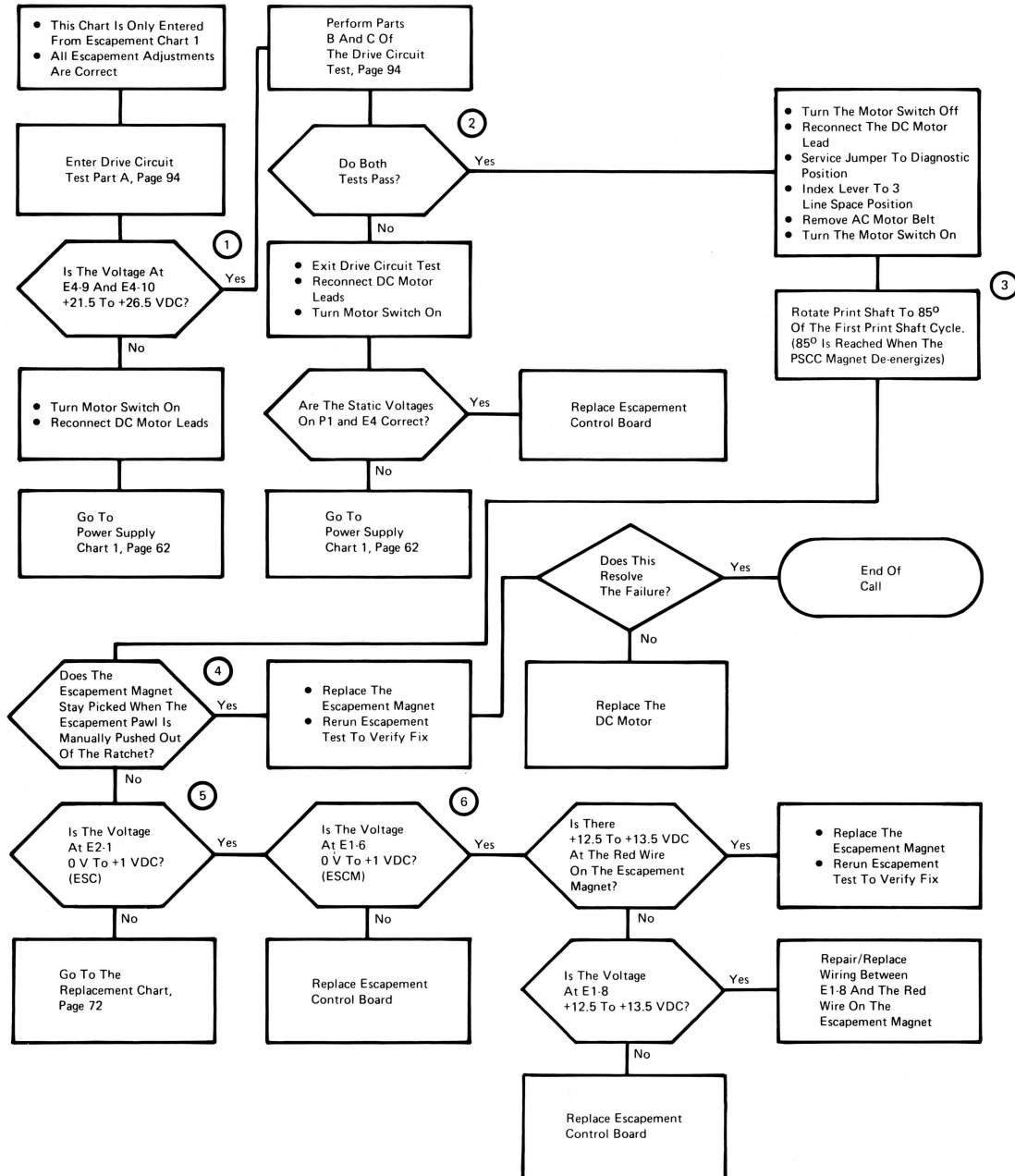
326 SERVICE INFORMATION 11-26-84

TYPE(S): 6714, 6724

SUBJECT: DIAGNOSTIC MANUAL REVISION

The following flowchart should be used in place of the existing one in the Diagnostic Manual (F/N SR28-0075-1).

ESCAPEMENT CHART 2



327 SERVICE INFORMATION 11-26-84

TYPE(S): 6714, 6724

SUBJECT: IBM DISKETTE MODULE

The IBM Diskette Module can be connected to the 85/95 Electronic Typewriter by utilizing the Modularity Option feature. This feature enables the typewriter to communicate with the Diskette Module. Theory and diagnostic information on the IBM Modularity Option is available in publication number SR28-0098-0. The following check out procedure should be used whenever the typewriter, connected to the Diskette Module, requires a functional check for reliable operation. Additional information will be referenced to the operators manual titled "Installation and Operating Instructions, Typewriter Diskette Module" (ie., Ref. O.M. pg x x,x).

IBM 85/95 TYPEWRITER TO DISKETTE MODULE CHECK OUT PROCEDURE
Typewriter/Modularity Option Check-out

- Disconnect the Diskette Module link cable from the typewriter (Ref. O.M. pg 1-4,5).
- Turn the typewriter on.
- Place the termination plug into the rear of the typewriter (Ref. O.M. pg 1-4,5).
- Press and hold the Code Button + Index + 1 (Link Test) the margin bell will ring once for a successful test.

This checks out the Modularity Option with the typewriter. If the bell does not ring, refer to the Modularity Option booklet or the 65/85 Diagnostic Manual.

Typewriter/Modularity Option with Diskette Module Check-out.

- Remove the termination plug from the typewriter and insert it in the Diskette Module, black outlet (Ref O.M. Pg. 1-4, 5).
- Insert the external link cable into the rear of the typewriter (Ref. O.M. Pg. 1-4, 5).
- Turn the Diskette Module on.

All lights on the front panel of the Diskette Module will turn on.

Lights will remain on for several seconds and turn off with the "Check Diskette" light blinking.

- Press and hold the Code Button + Index + 1 (the margin bell will ring once). This checks out the typewriter link connected to the Diskette Module. If the bell does not ring refer to the Modularity Option booklet or the 65/85 Diagnostic Manual.
- Install the IPL Program Diskette (Ref O.M. Pg. 3-4, 5).
- Press the "SAVE" button on the Diskette Module. All lights on the Diskette Module will turn on for several

seconds. All lights will turn off when IPL completes successfully. (See Note)

- Remove the IPL (Program) Diskette.

The above check out procedure has verified that the Typewriter/Modularity Option and the Diskette Module are working together properly and indicates that the customer is ready to:

- (A) Insert a work diskette.
- (B) Format the work diskette to store information (Ref. O.M. pg 3-8,9).
- (C) Use the Diskette Module features and functions.

NOTE: If all the lights do not go out, check the following:

1. Remove the cables and termination plug from the typewriter and Diskette Module. Inspect the typewriter and Diskette Module receptacles and cable connectors for bent pins. If no damage is observed with any of the connectors or receptacles try another IPL Diskette and perform the Typewriter/Modularity Option with Diskette Module check out procedure again. If the failure persists the problem lies in the Diskette Module.
2. Have the customer contact IBM Direct for assistance, 1-800-IBM-2468.

328 SERVICE INFORMATION 11-26-84

TYPE(S): 6713, 6723

SUBJECT: LEVEL 1 VELOCITY MAGNET NO LONGER AVAILABLE.

Level 1 Velocity Magnet (6 wire) is no longer available. If replacement of a level 1 magnet is required replace with a level 2 (4 wire) velocity magnet P/N 1303174, and bottom plate assembly P/N 1442844.

Use Applicable Service Code.

329

Lexington
85-01-30

Power Supply Board 65/85/95

Machines Affected

Type(s): 6714, 6724

General Information

The Power Supply Board P/N1303480 is now manufactured with a CE ground connector attached to the power supply capacitor ground. This ground connection, similar to the one used on the left-hand cable, is now used whenever a ground connection is needed for a meter reading. Reference to the capacitor ground in the 65/85 Diagnostic Manual can be disregarded when using this ground connection.

The CE ground connector on the left-hand cable will eventually be removed as inventory of the existing left-hand cable diminishes.

This change eliminates the need of alternating between power supply ground and capacitor ground. The change also provides a secure ground connection when attached to the capacitor ground.

330

Lexington
85-03-13

Index Emitter Board Part Number Substitution

Machines Affected

Type(s): 6714, 6724

General Information

P/N1437375 is now used for the index emitter board (23-014) and print feedback emitter board (02-604), and may be used on all level machines. All adjustments remain the same. Orders for P/N1303410 will be substituted to P/N1437375.

Parts Information

Mech/Ref	Part No.	Description
23 014	1437375	Board, Index Emitter

331

Lexington
85-04-24
Revised 85-05-08

Keystroke Counter B/M

Machines Affected

6713, 6723

General Information

The Stroke Counter B/M for Models 50/60/75, previously ordered by SER, is now available for field ordering through the Greencastle parts system (Figure 1).

The stroke counter mounts to the front rail and can be read by lifting the sound hood and the top cover. When a signal from either the No. 1, No. 2, or No. 3 keyboard reed switch is received by the counter board, the counter will count one. This allows the counter to count only characters typed and not operational buttons such as the spacebar.

Note: The stroke counter cannot be installed on a Model 75 that has the 30 minute Memory Protection Feature installed.

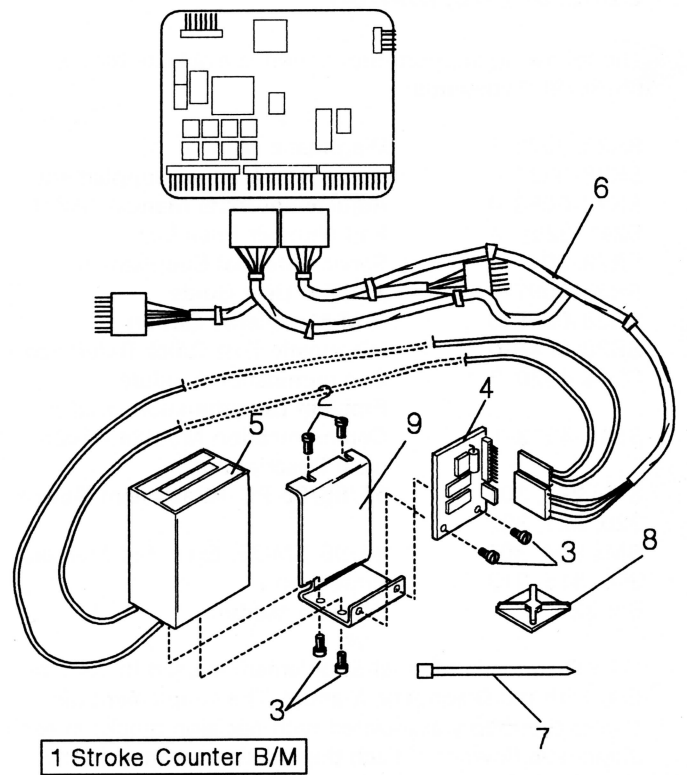


Figure 1

LEX10023

Parts Information

Mech/Ref	Part No.	Description
52 001	1446087	B/M, Model 50/60
001	1446088	B/M, Model 75
002	0734483	Screw, Bracket Mounting
003	1164582	Screw
004	1301049	Board, Stroke Counter
005	Ref Only	Counter Asm
006	1446085	Cable, Model 50/60
006	1446086	Cable, Model 75
007	1159913	Tie, Cable
008	Ref Only	Mounts Cable Tie
009	Ref Only	Bracket

332Lexington
85-05-22

Technical Publications Available

Machines Affected

6714, 6724

General Information

The following support information is available for the 65/85/95 Typewriter:

SR28-0075-1	Diagnostic Manual
SR28-0325-0	Diagnostic Manual Supplement *
SR28-0088-0	Adjustment Parts Manual (APM)
S241-0259-4	Part Number Price List
SR28-0045-0	Service Manual Supplement
SR28-0097-0	XTDT II User Guide
SR28-0098-0	IBM Modularity Option
SR28-0448-0	Diagnostic Test Quick Reference
S544-4020-0	Communication Module - Problem Determination Guide
S544-4013-1	Communication Module - Technical Description
SMs 298, 301, 320, 321, 322	65/85/95 PC-Attachment Device
SMs 304, 305, 306, 315, 318	85/95 CMOS, Extended Memory Protection
Sm 327	Diskette Module

*The Diagnostic Manual Supplement is used in conjunction with the Diagnostic Manual. The supplement discusses the theory associated with decision blocks in each diagnostic flowchart. Each diagnostic flowchart in the Diagnostic Manual has circled numbers next to various blocks within the flowchart; 1, 2, etc. These numbers

correspond to the appropriate chart and number in the supplement manual.

Use Applicable Service Code.

333Lexington
85-10-09
Revised 85-12-18

Level III Processor Board

Machines Affected

6714, 6724

General Information

A new level NMOS processor board and CMOS logic board are now available. The new level boards eliminate the four known microcode errors that resulted in system busy conditions as described in SR28-0371 titled "Understanding System Busy/Microcode Failures."

Orders for NMOS processor boards and CMOS logic boards will be automatically subbed to the new level boards.

Parts Information

Mech/Ref	Part No.	Description
19 028	1301241	Processor Board, 65 NMOS
19 028	1301249	Processor Board, 85 NMOS
19 030	1301257	Logic Board, 85/95 CMOS

Use Service Code 32.