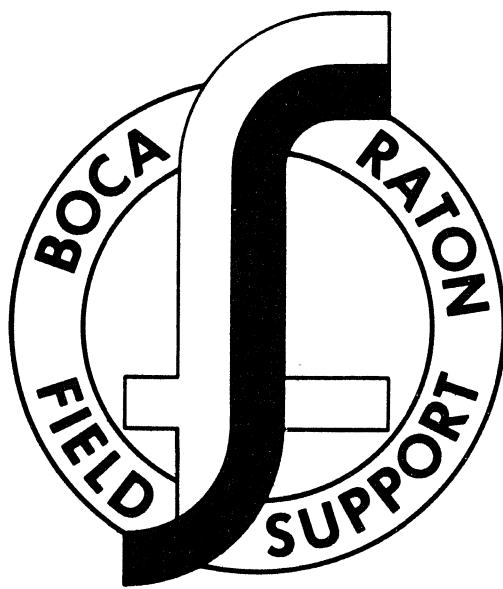


SYSTEM SERVICE INDEX



SYS/3 MODEL 6

THIS SYSTEM SERVICE INDEX CONTAINS TROUBLE AND CAUSE DISCRPTIONS, AND SERVICE TECHNIQUES ON SYSTEM/3 AND ASSOCIATED I/O. THIS INFORMATION IS A RESULT OF FIELD EXPERIENCE AND FEEDBACK COMPILED, EDITED AND FORMATED BY A TEAM OF GSD CUSTOMER ENGINEERS UNDER THE DIRECTION OF BOCA RATON FIELD SUPPORT. SINCE THIS PUBLICATION WAS PRODUCED INDEPENDENT OF PRODUCT ENGINEERING, IT SHOULD BE USED ONLY AFTER EXHAUSTING THE APPROVED ON-SITE MAINTENANCE PACKAGES. (I.E., MAPS, DIAGNOSTIC TESTS, REF. MANUALS, ECT.).

A FORM FOR READERS' COMMENTS IS PROVIDED AT THE BACK OF THIS PUBLICATION. IF THE FORM HAS BEEN REMOVED, COMMENTS MAY BE ADDRESSED TO IBM CORPORATION, GSD CE FIELD SUPPORT, DEPARTMENT 90E, BOCA RATON 33432.

HOW TO USE SYSTEM SERVICE INDEX

- STEP 1. REFER TO - QUICK INDEX - (5406 PG. I) FOR PAGE NUMBER OF TROUBLE CATEGORY IN CROSS REFERENCE INDEX.
- STEP 2. REFER TO CROSS REFERENCE INDEX - FIND TROUBLES RELATED TO PROBLEM.
- STEP 3. RECORD TROUBLE NUMBERS.
- STEP 4. IF MORE THAN ONE TROUBLE EXISTS, REPEAT STEPS 1, 2 AND 3.
- STEP 5. SELECT COMMON TROUBLE NUMBERS AND REFER TO THOSE NUMBERS FOR A CAUSE. HOWEVER, IF THERE ARE NO COMMON TROUBLE NUMBERS - YOU MUST ANALYZE THE TEXT OF EACH TROUBLE NUMBER FOR THE MOST LOGICAL CAUSE.

EXAMPLE: PROBLEM - 5406 LSR HI PROCESS CHECK AT CPU CLOCK 5 TIME.

- STEP 1. QUICK INDEX - 5406 PROCESS CHECKS AND PROCESSING PROBLEMS (PAGE # I)
- STEP 2. CROSS REFERENCE INDEX - LOOK FOR "LSR HI" AND RECORD TROUBLE NUMBERS LISTED. (0003, 0004, 0057, 0058, 0060, 0087, 0102)

ALSO LOOK FOR - CPU CLOCK 5 AND RECORD TROUBLE NUMBERS LISTED. (0057, 0092)
- STEP 3. COMPARE FOR COMMON TROUBLE NUMBERS (SEE NOTE 1) (0057)
- STEP 4. REFER TO COMMON TROUBLE NUMBER OR NUMBERS FOR CAUSE.

NOTE 1. IF YOU HAVE EXCESSIVE COMMON TROUBLE NUMBERS, ATTEMPT TO USE AN ADDITIONAL SYMPTOM TO NARROW DOWN TO THE MOST PROBABLE CAUSE NUMBERS.

	PAGE I
5406 CPU AND I/O QUICK INDEX	PAGE
*** POWER PROBLEMS	01
*** PROCESS CHECK AND PROCESSING PROBLEMS	01
*** CPU LOOP OR HANG	01
*** CPU AND MEMORY HALTS AND SENSE SWITCH FAILURES	01
*** CUSTOMER PROGRAM HALTS	01
*** CUSTOMER AND CE CONSOLE PROBLEMS	01
*** USAGE METER PROBLEMS	01
*** BSCA--LCA PROBLEMS	01
*** 5213 and 2222 PROBLEMS	01
*** KEYBOARD PROBLEMS	01-02
*** 2265 CRT DISPLAY	02
*** DATA RECORDER 129-5496	02
*** ALTERNATE PROGRAM LOAD DEVICE (CASSETTE)	02
*** 5444 PROBLEMS *NOTE 1	02
*** INSTALLATION,B/M, PARTS AND INFORMATION	02

*NOTE 1 DUE TO THE SIMILARITY OF 5406 and 5410
5444 ATTACHMENT BOARDS, 5410 TROUBLES
ARE CONTAINED IN THIS PUBLICATION. BOARD
LOCATION MAY HAVE TO BE CHANGED TO APPLY
A 5410 FIX TO A 5406. 5444 ATTACHMENT IS
01A A1 IN THE 5406.

*** POWER PROBLEMS ***

TP1 (TP= TEST POINT)
0046
TP2
0001 0047
TP3
0047
TP4
0046 0047
TP5
0047
TP7
0047
MULTI OR RANDOM TEST POINTS
0047
BLOWING FUSE
0048
POWER DOWN AND UP BY ITSELF OR DOWN NO TP
0002 0049 0050
MISCELLANEOUS POWER PROBLEMS
0051 0052

*** PROCESS CHECK AND PROCESSING PROBLEMS ***

I/O LSR PROCESS CHECKS
0053 0054 0055 0056
LSR HI
0003 0004 0057 0058 0060 0087 0102
LSR LO
0003 0004 0058 0059 0060 0061 0062 0087 0102
SAR HI
0005 0006 0054 0062 0063 0064 0065 0066 0067 0068 0068 0069
0070 0071
SAR LO
0005 0006 0054 0063 0064 0065 0067 0069 0070 0071
INVALID ADDRESS PROCESS CHECK
0017 0018 0072 0073 0074 0075 0076 0077 0108 0114 0235 0245
0247
SDR
0007 0008 0009 0010 0011 0012 0014 0078 0079 0108
DBI
0015 0057 0061 0080 0081 0082 0083 0085 0089 0229 0230 0231
0241
A/B
0015 0021 0057 0059 0061 0080 0081 0084 0085 0086 0087 0088
0089 0090 0093 0219 0230 0241
ALU
0084 0087 0090 0091 0219
CPU DB0
0016 0084 0090 0092 0093 0107 0219
OP/Q
0094
INVALID OP PROCESS CHECK
0017 0018 0019 0020 0021 0022 0024 0077 0094 0095 0096 0097
0098 0099 0100 0101 0102 0103 0104 0106 0116 0236 0247 0252
CHANNEL DB0
0077 0105
INVALID Q
0102 0106 0247
NO ROLLER (8) PROCESS CHECK
0022 0023 0032 0068 0107 0108 0109 0110 0111 0112 0113 0227
PROCESS CHECK ON IPL
0024 0064 0065 0090 0102 0114 0115 0116
SYSTEM RESET - POWER UP
0005 0025 0063 0087 0117
RANDOM PROCESS CHECK
0117 0125
DROPPING BITS OR EXTRA BITS NO PROCESS CHECK
OR WRONG TOTALS ONLY INDICATION
0026 0027 0118 0224
CPU CLOCK 0
0055 0056
CPU CLOCK 1
0062 0066 0070 0085 0230
CPU CLOCK 3
0107
CPU CLOCK 4
0004 0013 0060 0084
CPU CLOCK 5
0057 0092
CPU CLOCK 6
0013 0059 0080
CPU CLOCK 8
0087 0097 0099 0105 0192

*** CPU LOOP OR HANG ** (SEE LOOP/HANG BY I/O BOX ALSO)

LOOP OR HANG ON 5444
0029
LOOP OR HANG ON 5213
0119 0170
LOOP OR HANG ON KEYBOARD
0219 0220

*** CPU AND MEMORY HALTS, AND SENSE SWITCH FAILURES ***

CPU AND MEMORY HALTS
0031 0032 0035 0091 0100 0120 0121 0122 0123 0124 0125 0255

*** CUSTOMER PROGRAM HALTS ***

CUSTOMER HALT 123
0195
CUSTOMER HALT 1 3 5
0103 0126 0376
CUSTOMER HALT 12 45
0095 0115 0127 0235
CUSTOMER HALT ABC 1 4
0035
CUSTOMER HALT AB 012 45
0367
CUSTOMER HALT ABCD 2345
0128
CUSTOMER HALT A C 1234
0191 0205
CUSTOMER HALT A C 1 34
0067
CUSTOMER HALT A C 23
0129 0142 0143
CUSTOMER HALT C 4
0118
CUSTOMER HALT C 1234
0243
CUSTOMER HALT 01234
0026
CUSTOMER HALT BCD 2 45
0130

*** CUSTOMER AND CE CONSOLE PROBLEMS ***

PROGRAM LOAD
0038
ALL-EXTRA LAMPS ON
0039 0131 0132
ERRORS CAUSED BY MANUAL OPERATION OF CONSOLE SWITCHES
0040 0041

*** CUSTOMER USAGE METER PROBLEMS ***

CUSTOMER USAGE METER PROBLEMS
0133 0133

*** BSCA--LCA PROBLEMS ***

LCA PROBLEMS
0042 0134
DIAGNOSTIC HALTS AND PROBLEMS
0042 0043 0044 0134 0135

*** 5213 AND 2222 PROBLEMS ***

PROCESS CHECK ON PRINTER OPERATION
0054 0080
CARRIAGE SYNC CHECKS + VERT. CYCLE CHECKS
0136 0137 0138 0139 0140
SYNC CHECKS + HORIZONTAL CYCLE CHECKS
0141 0142 0143 0144 0145 0146 0147 0148 0149 0150 0151 0152
0153 0154 0155 0191
DROPS OR EXTRA WIRES
0156 0157 0158 0159 0160 0161 0447
PRINTS WRONG NO CHECKS
0160 0162 0163 0164 0165 0166 0167 0448
WON'T PRINT
0155
SPACING OR SKIPPING PROBLEMS
0136 0162 0168 0169 0170 0171 0172
HEAD MOTION -SLOW OR ERRATIC
0146 0151 0154 0173 0174 0175 0176 0177 0178 0189 0449
READ PROBLEMS ON 2222
0179 0180 0181
RIBBON PROBLEMS
0182 0183 0184 0185 0186 0208
FUSE BLOWN
0187
LOOP OR HANG 5213/2222 OPERATION(ALSO SEE CPU LOOPS)
0119 0170 0178 0188 0189 0190 0191 0192 0193 0448
MARGIN CHECKS
0194 0195 0196 0197
INFORMATION AND PARTS
0197 0198 0206 0207
DIAGNOSTIC HALTS
0129 0144 0151 0152 0174 0191 0199 0200 0201 0202 0203 0204
0205
5213 PARTS
0150 0185 0206 0207 0208

*** KEYBOARD ENTRY PROBLEMS ***

READY-LOCKUP PROBLEMS
0209 0210 0211 0212 0213 0214
EXTRA-WRONG BITS FROM KEYBOARD
0073 0209 0215 0216
ALTER MODE KEYBOARD FAILURES
0210 0216
FALSE INQUIRY REQUEST
0217

SYSTEM / 3 5 4 0 6 CROSS REFERENCE INDEX

PROCESS CHECK FROM KEYBOARD
0056 0066 0073 0218 0219 0227

LOOP OR HANG KEYBOARD OPERATION (ALSO SEE CPU LOOPS)
0219 0220

DIAGNOSTIC HALTS
0221

*** 2265 CRT DISPLAY ***

BLANK OR NO DISPLAY
0222

*** DATA RECORDER 129 5496 ***

READ-PUNCH FAILURES
0223 0224 0225 0226

PROCESS CHECKS FROM DATA RECORDER
0083 0084 0227 0228 0229 0230 0231

INFORMATION
0232 0233

DIAGNOSTIC HALTS
0226 0234

*** ALTERNATE PROGRAM LOAD DEVICE (CASSETTE) ***

IPL PROBLEMS
0076 0235 0236 0237 0241 0251 0398

DIAGNOSTIC HALTS APLD
0128

LOOP OR HANG ON APLD OPERATION (ALSO SEE CPU LOOPS)
0238

*** 5444 PROBLEMS **

DESTROYED OR LOST DATA ON POWER FAILURE
0020 0272 0273

EQUIPMENT CHECKS OR HALT ABD 1245
0239 0273 0304 0367

DISK IPL PROBLEMS
0076 0098 0127 0240 0241 0242 0243 0244 0245 0246 0247 0248
0249 0250 0251 0252 0253 0257 0260 0261 0376 0394 0396 0397
0407 0417

DISK INITIALIZE PROBLEMS
0239 0250 0254 0392 0411 0412

LOOP OR HANG ON 5444 (ALSO SEE CPU LOOPS)
0238 0242 0255

** 5444 DIAGNOSTIC HALTS AND PROBLEMS **

0103 0121 0239 0249 0256 0257 0258 0259 0260 0261 0262 0263
0281 0335 0362 0368 0385 0396 0403 0404 0413 0414 0415 0416
0417 0418 0423

BLOWS FUSE 1 (STEPPER ONLY)
0264 0265 0266 0267 0268 0269 0270 0348 0365 0440

BLOWS OTHER FUSES
0271 0305 0400

VOLTAGE PROBLEM +18 OR -18
0285 0292 0298 0402 0409

ALL OTHER POWER PROBLEMS
0051 0274 0275 0338

DATA UNSAFE OR EQUIPMENT CK
0276 0277 0278 0283 0286 0289 0373 0402

SELECT UNSAFE (TAP LINE B)
0268 0279 0291 0400

ERASE UNSAFE (TAP LINE C)
0279 0285 0290

WRITE UNSAFE (TAP LINE A)
0279 0280 0290

** READY DROPS WHILE RUNNING **

NOTE: IF DATA UNSAFE CAUSED READY TO DROP,SEE DATA UNSAFE
READY DROPS WHILE RUNNING
0278 0289

DROPS READY STEPPER DRIVE
0290 0291 0292 0292 0293 0294 0295 0296 0297 0298 0338

DROPS READY FRICTION DRIVE
0293 0295 0296 0299 0300 0301 0361

OTHER DROP READY PROBLEMS
0276 0280 0288 0302 0303 0304 0370

** READY PROBLEMS ON START **

DRIVE MOTOR WON'T START
0296 0305 0306 0307 0308 0309 0310 0311 0317 0426

CONTINUOUS BRUSH CYCLES (STEPPER DRIVE)
0270 0311 0312 0313 0314 0315 0316 0317 0318

CONTINUOUS BRUSH CYCLES (FRICTION DRIVE)
0311 0314 0316

WON'T READY,ACCESS STOPPED BEHIND 0 (STEPPER)
0313 0316 0319 0320 0321 0322 0323 0324 0325

WON'T READY,ACCESS STOPPED BEHIND 0 (FRICTION)
0316 0320 0324 0325 0326

WON'T READY, ACCESS AT OR BEYOND 0 (STEPPER)
0275 0327 0328 0329 0330 0331 0332 0374 0399 0436

WON'T READY, ACCESS AT OR BEYOND 0 (FRICTION)
0325 0333

OTHER START UP READY PROBLEMS
0304

** SEEK FAILURES **

SEEK CHECK IN SENSE
0033 0287 0334 0335 0336 0337 0338 0339 0340 0359 0395 0432
0438

SEEK OVERRUN IN SENSE
0341 0366

SYSTEM / 3 5 4 0 6 CROSS REFERENCE INDEX

NO RECORD FCUND IN SENSE
0034 0263 0335 0336 0342 0343 0359 0360

SEEK ERROR (STEPPER)
0287 0297 0328 0335 0337 0338 0339 0340 0341 0344 0345 0346
0347 0348 0349 0350 0351 0352 0353 0354 0355 0356 0357 0358
0366 0420 0424 0432 0438 0441 0443

SEEK ERROR (FRICTION)
0339 0346 0353 0358 0359 0360 0361 0435

SEEK TO CRASH STOP OR OFF LEAD SCREW
0270 0275 0322 0362 0363 0364 0365 0366

** READ OR WRITE PROBLEMS **

READ / WRITE PROBLEMS
0367 0421

DATA CHECKS RECOVERABLE (TEMPORARY)
0034 0045 0254 0272 0293 0367 0370 0371 0372 0373 0374 0375
0400 0412 0421

DATA CHECKS UNRECOVERABLE (PERMANENT)
0034 0126 0263 0284 0293 0346 0369 0376 0377 0378 0379 0380
0381 0407

MISSING ADDRESS MARKS
0272 0343 0346 0382 0383 0384 0406 0411

R/W FAILURES ALL HEADS
0030 0045 0284 0367 0369 0372 0374 0375 0380 0385 0386 0387
0402

R/W FAILURES REMOVABLE DISK
0286 0411 0419

R/W FAILURES FIXED DISK
0343 0388

ERROR ON READ
0030 0126 0369 0371 0374 0375 0380 0381 0387 0389 0390 0391
0392 0393 0400 0402 0403 0411 0412

ERRORS ON WRITE
0263 0412

5444 DISK CAUSED IPL FAILURES
0028 0031 0037 0116 0282 0298 0398 0399 0400 0401 0402 0403
0404 0405 0422

** DISK PACK PROBLEMS **

DISK PACK COVER
0308

OTHER DISK PACK PROBLEMS
0408

** NO OPEN LIGHT (CARTRIDGE UNSAFE)

NO OPEN LIGHT
0409 0410 0438

** CYCLE STEAL PROBLEMS **

** 5444 MECHANICAL OR ADJUSTMENT PROBLEMS **

MOTOR AND DRIVE
0309 0387 0425 0426 0442

FIXED DISK AND DRIVE SPINDLE
0439

INDEX PROBLEMS
0427

HEAD PROBLEMS
0371 0380 0428 0429 0430

ACCESS, STEPPER MOTOR OR ENCODER DISK
0266 0267 0269 0287 0399 0431 0432 0433

ACCESS, FORWARD OR REVERSE CLUTCH (FRICTION)
0336 0434

VOICE COIL PROBLEMS (FRICTION)
0126 0326 0435

CABLES, CONNECTORS AND BASE PROBLEMS
0033 0268 0306 0373 0400 0419 0436 0445

DISK DRAWER OR LATCH PROBLEMS
0307 0427 0437 0438

** INFORMATION ON 5444 AND 5422 **

PARTS INFO (STEPPER DRIVE)
0440

DIAGNOSTIC INFORMATION
0441 0442

EC OR FEATURE B/M INFORMATION
0351 0433 0441 0443 0444

5444 MISCELLANEOUS PROBLEMS
0445

*** INSTALLATION, B/M, PARTS, AND INFORMATION ***

5406 INSTALL INFO
0447 0448 0449

CABLE INFO
0446

B/M INFO.
0075

0001 ***** 0001 ***** 0001

NOTE....

4 DIFFERENT FIXES OF 6 VOLT OV/OC POWER CHECK PROBLEMS ON THE 5410 TP 13 5406 TP 2 HAVE BEEN

TROUBLE 1. SOLID TEST POINT 13 OR TP14 EVEN WITH START UP LEAD REMOVED.

CAUSE

TWEAK AFFECTED POT ON THE REGULATOR CARD IN THE POWER SUPPLY TP13-6V TP14-30V IF SYSTEM WILL NOW POWER UP THE TROUBLE IS A DIRTY POT. IF YOU HAVE THIS PROBLEM REPLACE THE REGULATOR CARD.

TROUBLE 2. POWER FAILURE TP 2 INDICATING +6 VOLT OVERVOLTAGE OVERCURRENT

CAUSE

THE CURRENT SOURCE (Z-W1J2) DRIVER IN THE CORE STORAGE BOARD DEFECTIVE. NOTE THE DRV R IS IN LOCATION Z-W1K2 FOR 32K BSM 01A B4J2 01A B4K2

TROUBLE 3. POWER CHECKS TP13 INDICATION. MAPS DIDNT HELP.

CAUSE

BAD CRIMP CONNECTION 6 VOLT SUPPLY E14 PIN

TROUBLE 4. CANNOT PWR UP TEST POINT 13

CAUSE

SHORTED DIODE IN MFCU 24 VOLT SUPPLY LOAD SIDE OF CARD F4.

*****PROBLEM ISOLATION AIDS*****

- DO A GROUND CHECK 5410 (IF YOU HAVE 5421 OR BSCA SEE INSTALLATION MANUAL GROUND CHECK)
- IF 5444 INSTALLED PULL CF CONNECTOR TO ELIMINATE FILE
- REMOVE 30 VOLT FROM THE CORE BOARD.
- CHECK FOR LOOSE OR BLOWN FUSES IN BULK SUPPLY.
- CHECK FOR LOOSE SCREWS ON PLATE ON CAPACITORS IN THE BULK.

0002 ***** 0002 ***** 0002

SYSTEM PAUSES OR HESITATES ON POWER UP. MAY BE FROM 15 SEC TO 10 MINUTES.

PROBLEM ISOLATION AIDS

TRY TO DETERMINE WHERE IN POWER SEQUENCE SYSTEM HANGS

CAUSE

SEQUENCE RELAY (K-17 IN THIS CASE) WIRES NOT SOLDERED. ANY SEQUENCE RELAY FAILURE COULD CAUSE PROBLEM.

0003 ***** 0003 ***** 0003

5410 OR 5406 FAILS ON CPU LSR TEST. ALL OTHER DIAGNOSTICS RUN OK.

CAUSE

TIE DOWN ON DISK ATTACHMENT BOARD WAS INCORRECT.

0004 ***** 0004 ***** 0004

PROC CK LSR HI LO A/B ALU CPU DBO CLOCK 4 EB CYCLE. LSR IS BLANK. A01 GIVES THIS ERROR A0E WILL GIVE AN INV ADDR MAPS CALLED OUT DISK ATT CARDS G2 F2 M2 Q2 AND P2 BUT THEY DONT FIX.

CAUSE

01A A2R2 (5406 01A A1R2)

0005 ***** 0005 ***** 0005

PROCESS CHECK, SAR HI OR LOW. COULD BE ALU OR A/B PARITY CHECK ALSO. SYSTEM RESET MAY FAIL, OR POWER UP LEAVE BITS ON IN SAR.

CAUSE

NOTE***STOP LIGHT ON ON CONSOLE DEFECTIVE RUN CONTROLS CARD, Z-W2R2. (5410 01A B3R2, 5406 01A B2R2)

0006 ***** 0006 ***** 0006

5410 OR 5406 GIVING SAR HI AND OR SAR LO PROCESS CHECK.

PROBLEM ISOLATION AIDS

5410- 01A B3B2 (SAR HIGH) AND B3C2 (SAR LOW) ARE SWAPPABLE 5406 01A B2B2 (SAR HIGH) AND B2C2 (SAR LOW) ARE SWAPPABLE

CAUSE

01A B3B2 OR B3C2 CN 5410 01A B2B2 OR B2C2 ON 5406

0007 ***** 0007 ***** 0007

5410 AND 5406 INTERMITTENT CORE STORAGE PROBLEMS CAUSED BY DEFECTS ON THE BSM BOARD.

CAUSE

- VISUALLY CHECK THE LINE TERMINATOR RESISTORS ON THE BSM BOARD FOR MISSING OR DEFECTIVE SOLDER CONNECTIONS.
- MISSING OR DEFECTIVE SPOT WELDS ON THE MINIBUS CONNECTOR SUPPLYING 30 VOLTS TO THE BSM CAN CAUSE INTERMITTENT PROBS. DEFECTIVE SPOT WELDS CAN BE DETECTED BY REMOVING THE MINIBUS CONNECTOR AND SLIGHTLY FLEXING IT.

0008 ***** 0008 ***** 0008

SDR CHECKS. B REGISTER IS BLANK.

CAUSE

DEFECTIVE CARD, 01A-B3B2 (Z-W2B2). BASE LSR AND SAR HI CARD.

0009 ***** 0009 ***** 0009

SDR PROC CKS, WITH OR WITHOUT OTHER PROCCHK INDICATIONS. I.E. A/B REG, ALU, CPU DBO, ECT. ALSO BSM FAILURES MAY SHOW UP AS INVALID OP - Q - ADDRESS FAILURES, CAUSED BY ALL BITS (PFF) BEING READ OUT OF STORAGE AND PUT IN THE REGISTERS (OP,Q,SAR). SEARCH-STORAGE DATA REGISTER CHECK BUS OUT ADDRESS

***** CAUSES ON THE FOLLOWING PAGES *****

- 01A-W1G4 (SENSE AMP) CLAMPED Y-WRITE CURRENT. DROPPED ALL BIT. MAY BE SENSITIVE TO NOISE IE RDY PRINTER ETC.
- 01A-W1B5 (STROBE DRIVER) LOOSE. DROPPED ALL BITS.
- 01A-W1J2 (CURRENT SOURCE 01A-W1K2 ON 32K)N
- 01A-W1B3 (TIMING / DELAY CARD). PFF ALWAYS CAME OUT OF STORAGE.
- 01A-W1H2 (X AND Y ADDR CARDS) 01A-W1D2 01A-W1E2 01A-W1F2 01A-W1G2 ON 32K AND ABOVE 01A-W1J2
- 01A-W1C2 (BYTE CONTROL) DROPPED BIT 2 FROM LOWER HALF OF MEMORY.
- 01A-W1A2 & W1A3 (TERMINATOR'S) CAUSE MISC. BIT AND ADDRESSING FAILURES. SAME P/N'S. ALSO INTER BOARD CABLES.
- OPEN LAND PATTERN TO PIN 01A-B3B6A04. LINE NAME *RD-GATE/WR-CALL.
- DEFECTIVE SOLDER CONNECTION (COLD) CN VOLTAGE BUS TO BOARD W1 (30VOLT SUPPLY)
- FTX MODULE ON THE PWR SEQ PANEL(START UP DELAY TO 30V SUPPLY) REPLACED THE SEQUENCE PANEL.
- LINE VOLTAGE WAS OVER 250V. WOULD ONLY FAIL IF A I/O DEVICE WAS BEING USED. I.E. IPL FROM CARD. OR PRINTING DCP.
- FOREIGN PARTICLES OR CONTAMINANTS IN THE CORE ARRAY MAY BE CAUSE OF INTERMITTENT SDR CHECKS.

0010 ***** 0010 ***** 0010

FAILS ON MANUAL ROUTINE 2,DROPS BIT 7. COULD BE ANY BIT

PROBLEM ISOLATION AIDS

SCOPE STORAGE, FAILING BIT LOOKED LOWER THAN OTHERS

CAUSE

01A B4A3 TERMINATOR CARD

0011 ***** 0011 ***** 0011

5410 INTERMITTENT SDR PROCESS CHECKS THAT CANNOT BE FIXED BY CHANGING BSM.

CAUSE

CPU CARD 01A B3T2 BAD 5406 B2T2

0012 ***** 0012 ***** 0012

5410 5406 SDR CHECKS CAUSED BY TEMPERATURE CHANGES CAUSING PICKING OR DROPPING BITS

CAUSE

INSURE THAT THE THERMISTER IS WORKING PROPERLY BY USING A SOLDERING IRON OR FREON CLOSE TO IT AND CHECK THAT THE 30 VOLTS VARIES WITH CHANGES IN TEMPERATURE.

0013 ***** 0013 ***** 0013

5410 SDR PROCESS CHECKS AFTER INSTALLING ADDITIONAL CORE BSM, SDR CHECK IN NEW BSM. CARD SWAPPING OF NO AVAIL. REPLACING NEW FEATURE BSM DOES NOT

CAUSE

PROBLEM ISOLATION AIDS

MEASURE -30 VOLT ALONG TERMINATING RESISTORS, WHITE WIRES. REF. LOGICS SR264. CHECK FOR -30 ON EACH TERMINATING RESISTOR (EXCEPTION- DOES NOT INCLUDE TOP 4 RESISTORS FOR X - Y TERM.) EXAMINE -30 VOLT MINI-BUS CONNECTORS FOR BAD WELD. MAY HAVE TO FLEX VERY SLIGHTLY TO SEE. BAD -30 VOLT DISTRIBUTION TO COMPONENTS.

0014 ***** 0014 ***** 0014

THE BYTE CONTROL CARD IN A 16K BSM CAN CAUSE PICKING OR DROPPING OF BITS FROM CORE AND COULD CAUSE SDR CHECKS IF AN ODD NUMBER OF BITS IS INVOLVED. THIS CARD HAS AN EXTERNAL LOAD W2F2 WHICH COULD ALSO CAUSE THE SYMPTOMS. CLOCK 6 OR 4 TIMES

CAUSE

5410 01A A4C2 B4C2 OR B3F2 (B REG) 540601A A3C2 B3C2 OR B2F2 (B REG)

0015 ***** 0015 ***** 0015

DBI AND A/B CHECKS ON ALTER STOR. A REG HAS BAD PARITY, EXTRA BIT OR BITS CLOCK 4

PROBLEM ISOLATION AIDS

LOOP ON ALTER PARITY CHECK OFF, SCOPE AND FREE LANCE. MAPS DO NOT FIND.

CAUSE

01A B3T2 RESET TO CHANEL (5406 01A B2T2)

0016 ***** 0016 ***** 0016

CPU DBO PROCESS CHECKS. FAILS ON ALTER SAR MODE. MAY NOT GIVE ROLLER 8. BIT SENSITIVE TO DATA SWITCH SETTINGS (ONE BAD BIT OUT OF CHANNEL OUT CARD, 01A B2H2). B2H2 IS GOOD.

PROBLEM ISOLATION AIDS

SCOPE THE OUTPUTS OF CHANNEL OUT. REFERENCE KE241. OBSERVE PULSE WAVESHAP, LOOK FOR SLOW RISE OR FALL OF PULSE. COMPARE WITH OTHER BITS.

CAUSE

LOOSE CHANNEL CABLE IN ANY ATTACHMENT, CREATING BAD TERMINATION TO CHANNEL OUT. (ALSO APPLIES TO 5406, CHANNEL OUT AT 01A B1H2, KE241)

0017 ***** 0017 ***** 0017

INVALID OP AT CLOCK 1, OR INV ADDRESS CLCCK 8.

PROBLEM ISOLATION AIDS

IF FAILING, TRY APLD. IF APLD OK, THEN DATA FROM 5444 FILE ATTACHMENT IS WRONG. FIX ATTACHMENT. IF INTERMITTENT, TRY VARY VOLTAGES SLIGHTLY TO BRING OUT FAILURE.

CAUSE

01A A3Q2 5406 01A A1Q2

0018 ***** 0018 ***** 0018

5410 5406 INVALID OP OR INVALID ADDRESS PROCESS CHECKS

PROBLEM ISOLATION AIDS

CANT ENTER HAND PROGRAM.IN ALTER OR DISPLAY STORAGE STEP MODE SAR WILL CONTINUE TO INCREMENT AS LONG AS START KEY IS HELD DEPRESSED.

CAUSE

01A B3R2 (5410) 01A B2R2 (5406)

0019 ***** 0019 ***** 0019

5410 5444 INVALID OP ON CUSTOMER JOB. APPEARS TO OVERLAY DISK SUPERVISOR. ALL DIAGNOSTICS RUN ERROR FREE

CAUSE

5444 ATTACHMENT CARD 01A A2Q2 5406 01A A1Q2

0020 ***** 0020 ***** 0020

INVALID OP PROCESS CHECK WITH CYL 0 OF THE CUSTOMER FILE DESTROYED OR THE BOOT STRAP RECORD LOST. MAY IPL OK 1ST TIME AND THEN WIPE OUT CYL 0.

PROBLEM ISOLATION AIDS

CE PACK USE BOA PROGRAM TO RESTORE CYL 0.

CAUSE

5410 01A B3N2 5406 B2N2

0021 ***** 0021 ***** 0021

5410 INVALID OP OR A/B REG PROCESS CHECK IN MORNING ON IPL ONLY. ON A/B CHECKS THE A REG IS OUT OF PARITY. CN INV OP PROC CHECKS THE OP REG IS BLANK.

CAUSE

5410 01A B3J2 5406 B2J2 W2J2

0022 ***** 0022 ***** 0022

PROCESS CHECK, NO ROLLER 8, CLOCK 8 TIME

CAUSE

01A B3J2

0023 ***** 0023 ***** 0023

5410 OR 5406 GIVES PROCESS CHECKS WITH NO ROLLER 8 LIGHT AND

```

I/O CHECK INDICATOR LIGHT ON.
  ** PROBLEM ISOLATION AIDS **
PROBE 01A B2K2 J05 FOR 5406 OR 01A B3K2 J05 FOR 5410
(+ I/O CHECK SWITCH RUN). THIS LINE SHOULD BE UP MST LEVEL.
  ** CAUSE **
PROCESS CHECK WITH NO ROLLER 8 LIGHT IS NORMAL
OPERATION WHEN I/O CHECK SWITCH IS IN THE STOP POSITION
AND AN I/O CHECK OCCURS. THE I/O CHECK SWITCH CAN ALSO
BE SHORTED OR HAVE A LOOSE CONNECTION TO LOGIC AND THE
SAME THING CAN OCCUR.

0024 ***** 0024 *****
  ** TROUBLE ** 5410 **
IPL PROCESS CHECKS, SHIFTING DATA WITHIN IPL RECORD
  ** CAUSE **
5410 01A A2D4 5406 01A A1D4

0025 ***** 0025 *****
  ** TROUBLE ** 5406 5410
BLANK SAR ON SYSTEM RESET ONLY WHEN THE DISK DRIVE IS ON.
  ** PROBLEM ISOLATION AIDS **
CLOCK STEP THROUGH SYSTEM RESET. APPEARS THE SYSTEM RESET IS
OK BUT THE WRONG LSR IS CALLED OUT.
  ** CAUSE **
5410 01A A2T2 5406 A1A A1T2

0026 ***** 0026 *****
  ** TROUBLE ** 5406
ZERO ADD ZONE INSTRUCTION FAIL, ZAZ. HALT D1234
C24 ON IPL.
  ** PROBLEM ISOLATION AIDS **
HAND PROGRAM, SCOPE AT EACH CLOCK TIME.
  ** CAUSE **
01A B2J2

0027 ***** 0027 *****
  ** TROUBLE ** 5410 5406
BAD TOTALS - ANSWERS ON CUSTOMER JOBS
DIVIDE OVERFLOW HALT 78 ON CUSTOMER UTILITIES- MULTIPLY/DIVIDE
PROBLEM AND CARD SORT FAILURES
DIAGNOSTICS WOULD NOT FAIL --- NO PROCESS CHECKS
5410 01A B3M2 5406 01A B2M2
5406 01A B2M2 ABC14

0028 ***** 0028 *****
  ** TROUBLE **
5410 5444 BLANK 1 HALT RUNNING JOB OR BLANK 0 HALTS DURING
IPL. ALSO LCOP ON IPL.
  ** CAUSE **
01A A2G2 IN 5444 ATTACHMENT BOARD ALSO SUSPECT BAD THRUST
BEARING IN THE 5444 CARRIAGE.

0029 ***** 0029 *****
  ** TROUBLE ** 5406 5410 **
SYSTEM HANGING ON FILE BUSY. INTERMITTENT.
  ** PROBLEM ISOLATION AIDS **
LOOKED FOR BAD LEVEL IN FILE ATTACHMENT.
  ** CAUSE **
DEFECTIVE ATTACHMENT CARD, 01A W3Q2.
(5410 - A2Q2, 5406 - A1Q2)

0030 ***** 0030 *****
  ** TROUBLE **
5444 5410 A03 FAILS, NO READ ID ON ANY HEAD, BOTH FILES

CUSTOMER IPL DIES WITH NO INDICATIONS, SAR 0000, NO I/O
ATTENTION.
  ** CAUSE **
01A A2D4

0031 ***** 0031 *****
  ** TROUBLE ** 5406-5410 **
CANNOT IPL. FAILS WHEN RUNNING CPU AND MEMORY TESTS WITH HALT
12 OR HALT 123 (TEST BITS ON).
  ** PROBLEM ISOLATION AIDS **
HALTS ARE AS FOLLOWS- ABC123, ABCD12345, 12, AND 123.
  ** CAUSE **
DEFECTIVE CPU CARD, REGISTER CONTROLS, Z-W2N2.
(5406 01A B2N2, 5410 B3N2)

0032 ***** 0032 *****
  ** TROUBLE ** 5406 5410
FAILS ON DIAGNOSTICS, CPU AND MEMORY. E1 AND E4 HALT OK.
FAILS WITH PROCESS CHECK BEFORE THE E9 HALT. IOP CYCLE, CLOCK6.
  ** CAUSE **
REGISTER CONTROLS CARD, Z-W2N2.
(5410- 01A B3N2, 5406- 01A B2N2)

0033 ***** 0033 *****
  ** TROUBLE **
5444 STEPPER GETS OF HALTS IN THE MORNING FOR A HALF HOUR.
NO OTHER INDICATIONS.
  ** CAUSE **
HALF WIDE CABLES REPLACED

0034 ***** 0034 *****
  ** TROUBLE ** 5444
OL HALTS ON CUSTOMER JOBS..DIAGS OK..ONLY 1 OF 2 DRIVES FAILS..
NO RECORD FOUND AND DATA CHECK CHECKS.
  ** CAUSE **
REPLACED CABLE BETWEEN Y1N6 B02 AND W1B1

0035 ***** 0035 *****
  ** TROUBLE ** 5406-5410 **
CUSTOMER GETS HALT 78 (CARD SYS) OR HALT 12 (DISK) DIVIDE
OVERFLOW. 5406 HALT ABC 14.
  ** PROBLEM ISOLATION AIDS **
CPU AND MEMORY EVENTUALLY FAILED WITH HALT 22 OR 24. MAPS WILL
FIND WITH HALT 22.
  ** CAUSE **
5410 01A-B3F2 - 5406 01A B2F2

0036 ***** 0036 *****
  ** TROUBLE ** 5410 5406
AFTER LOADING DCP, A SPECIFIC SENSE SWITCH IS SET ON. THE
PRINTER OUTPUT SHOWS MANY OTHER SENSE SWITCHES ON (ALTHOUGH
THEY WERE NOT SET ON).
  ** CAUSE **
DEFECTIVE CARD, 01A-B3N2.
5406 B2N2 W2N2

0037 ***** 0037 *****
  ** TROUBLE ** 5410 **
HITTING SYSTEM RESET CAUSES SYSTEM TO GO INTO
IPL ROUTINE EITHER 5444 OR 5424
  ** CAUSE **
IPL SWITCH SHORTED ON TERM 4 AND 5

0038 ***** 0038 *****
  ** TROUBLE ** 5410
WITH LOAD DEVICE (5424 5444) NOT READY, IPL 5410. I/O ATTENTION
LIGHT COMES ON AND GOES BACK OFF SYSTEM STARTS CORE DUMP.
  ** PROBLEM ISOLATION AIDS **
PROBE IPL LATCH B3R2 S05 (KA202) AND IPL, LATCH FLIPS ON (DOWN)
AND THEN RIGHT BACK OFF (UP). I/O ATTN. LIGHT STAYS ON AS LONG
AS PROGRAM LOAD IS HELD GOES OFF WHEN SWITCH RELEASED.
PROGRAM LOAD GIVES SYSTEM RESET WHICH BRANCHES SAR TO 0000
(CORE DUMP ROUTINE). SYSTEM SHOULD WAIT FOR FIRST
CARD OR RECORD TO READ IN. IF IPL LATCH FAILS SYSTEM WILL
PROCEED WITH CORE DUMP
  ** CAUSE **
01A B3R2 5406 01A B2R2

0039 ***** 0039 *****
  ** TROUBLE ** 5406 5410
TROUBLE ANY LIGHT ALWAYS ON. MAPS WILL NOT FIX WITH P BIT
TROUBLE ANY LIGHT ALWAYS ON. MAPS WILL NOT FIX WITH P BIT
HIGH ON IN ALL ROLLER POSITIONS.
  ** PROBLEM ISOLATION AIDS **
MAPS HAVE YOU PROBE THE BAD BIT IN ROLLER POSITION NUMBER 7.
IT IS NORMAL TO HAVE P BIT HIGH ON IN THIS ROLLER POSITION.
  ** CAUSE **
TURN TO ROLLER POSITION 8 AND PROBE BAD BIT.

0040 ***** 0040 *****
  ** TROUBLE ** 5406 5410 **
CORROSION BUILDUP ON THE CONTACTS OF THE ADDRESS/DATA CONSOLE
SWITCHES CAN CAUSE PROCESS CHECKS. IF LIGHT TAPPING ON SWITCH
KNOBS CAUSES CHECKS WHILE CPU IS RUNNING, CLEAN THE CONTACTS OR
REPLACE THEM.

0041 ***** 0041 *****
  ** TROUBLE ** 5406 5410
SAR LO DOES NOT CHANGE IN ALTER SAR MANUAL ROUTINE
  ** PROBLEM ISOLATION AIDS **
MAPS FAIL, CPU MAP PAGE 113 BLOCK J5 DEAD ENDS. SWAP B3B2 AND
B3C2, SYMPTOMS CHANGE.
  ** CAUSE **
01A B3C2 5406 01A B2C2 W2C2

0042 ***** 0042 *****
  ** TROUBLE ** 5406 5410
WHEN INSTALLING 5410 WITH LCA OFF LINE WILL NOT RUN RIGHT:
XMITTED DATA WAS 5555532322DFF, EXPECTED WAS 5532322DFF.
  ** CAUSE **
UDT FOR BSCA SHOULD SHOW INTERNAL CLOCK BIT ON. 80-1

0043 ***** 0043 *****
  ** TROUBLE **
SYS3 BSCA ATTACHMENT DIAGNOSTICS WILL NOT RUN WITHOUT
A DATA SET ATTACHED.
  ** CAUSE **
CONNECT DATA SET EXCEPT WHEN BSCA INTERNAL CLOCK INSTALLED.

0044 ***** 0044 *****
  ** TROUBLE ** 5406-5410 **
5410 OR 5406 DIAGNOSTIC 801 WITH HALT 04.
  ** CAUSE **
DEFECTIVE CARD 01B A2Q2 FOR 5406 OR 5410

0045 ***** 0045 *****
  ** TROUBLE **
5444 DATA CHECKS ON BOTH DRIVES. FAILED ON CUSTOMER PROGRAMS
AND DIAGNOSTIC A06 (HALT 22 AND 26) DIAGNOSTICS A01 AND A03 RAN.
  ** CAUSE **
5424 BLOWER P/N2591380 HAD CAPACITOR P/N5405155 MOUNTING
BRACKET BROKEN LOOSE

0046 ***** 0046 *****
  ** TROUBLE **
5406 REPACKAGED POWER SUPPLY ( PRINTED CIRCUIT BOARD ) POWER
CHECK WITH BOTH TEST POINTS TP1 AND TP4 SHOWING 24 VOLTS
  ** PROBLEM ISOLATION AIDS **
THE SYSTEM WOULD PWR CK AFTER SEVERAL MINUTES OF POWER ON.
DID NOT APPEAR TO BE HEAT SENSITIVE. SOMETIMES TURNING ON DISK
POWER WOULD SEEM TO ACCENTUATE PROBLEM BUT IT SEEMED TO BE
COINCIDENTAL
  ** CAUSE **
THE -4 VOLT REGULATOR CARD WAS REPLACED TO CORRECT PROBLEM

0047 ***** 0047 *****
  ** TROUBLE ** 5406 WILL NOT POWER UP - TP6
CAUSE* OPEN LAND PATTERN BETWEEN E12 ON THE +6V REGULATOR AND
J04 ON THE REG. CARD WHERE THE PATTERN TURNS A CORNER.
COULD ALSO HAPPEN ON A 5410, OR -4V, -30V REGULATORS

0048 ***** 0048 *****
  ** 5406 **
  ** TROUBLE **
INTERMITTENT BLOWING FUSES ON POWER UP.
  ** CAUSE **
CHECK INPUT VOLTAGE AND LINE CONNECTIONS ON LOGIC YB101.
CHANGE LINE CONNECTIONS IF NECESSARY.

0049 ***** 0049 *****
TROUBLE - POWER DRIPS ON THE 5406 CPU INTERMITTENTLY. A CHECK
OF THE TEST POINTS SHOWS A FAILURE ON THE -30 VOLT
OR THE -4 VOLT OR THE 6 VOLT POWER SUPPLY.
  ** CAUSE **
WITH THE SYSTEM POWERED UP, TAP THE REGULATOR CARD OF
THE SUSPECTED POWER SUPPLY GENTLY WITH A SCREWDRIVER
HANDLE. IF THE POWER DROPS, CHECK FOR POOR SOLDER
CONNECTIONS BETWEEN THE CARD SOCKET AND THE CURVED
COMPONENT BOARD ON WHICH IT IS MOUNTED.

0050 ***** 0050 *****
  ** TROUBLE ** 5406 5410 **
POWERS DOWN PARTIALLY THEN AFTER ABOUT 30 SECONDS POWERS
BACK UP AGAIN BY ITSELF.
  ** PROBLEM ISOLATION AIDS **
VIBRATE THE POWER SEQ(SEQUENCE) RELAY BOARD.
  ** CAUSE **
RELAY K7 CAUSED K2 TO DROP. REPLACE K7.

0051 ***** 0051 *****
  ** TROUBLE ** 5444 MOTOR WONT TURN - SLOW ON 5406
  ** PROBLEM ISOLATION AIDS **
THE 5406 BLOWERS TURN SLOW WHEN THE 5444 IS TURNED ON
THE 5444 MOTOR WILL NOT TURN CE HAD TO REPLACE THE
MOTOR IN THE 5444 AND THE CAP
  ** CAUSE **
THE 5406 WAS SET UP 3 PHASE AND SHOULD HAVE BEEN SINGLE

0052 ***** 0052 *****
TROUBLE - THE 5406 POWER SUPPLY DOES NOT SEQUENCE UP CORRECTLY.
THE MINUS 30 VOLT AND THE +6 VOLT SUPPLIES ATTEMPT TO COME ON

```


AT THE SAME TIME.
**** CAUSE ****
1. ON MACHINES PRIOR TO BREAK IN OF PRINTED CIRCUIT POWER SEQUENCE PANEL, A SHORTED MICRO SWITCH ON TIME DELAY 1 (LOGIC PAGE YB 110) WILL CAUSE THE -30 VOLT SUPPLY TO COME ON TOO SOON (MAPS ADVISE REPLACING THE REGULATOR CARD OR THE REGULATOR FOR THE -30 VOLT SUPPLY)
5406 POWER UP SEQUENCE WRONG FOR -30 V
2. ON MACHINES AFTER THE PRINTED CIRCUIT POWER SEQUENCE PANEL, A DEFECTIVE MODULE ON THE POWER SEQUENCE BOARD MAY CAUSE THE PROBLEM.

0053 ***** 0053 ***** 0053
**** TROUBLE ** 5406 ****
I/O LSR CHECKS AND SYSTEM LOOPS (LOOP)
**** CAUSE ****
5406 CARD 01A AIQ2
5410 A2Q2

0054 ***** 0054 ***** 0054
**** TROUBLE ** 5406**
SOLID I/O LSR, SAR HIGH AND SAR LOW ANYTIME THE SYSTEM TRIES TO PRINT. MAPS DO NOT FIND.
**** CAUSE ****
01A A2Q4

0055 ***** 0055 ***** 0055
**** TROUBLE ** 5406 ****
GETTING I/O LSR PROCESS CHECKS AT CLOCK 0 CS ASSIGNMENT 4 ONLY WHILE PRINTING ON THE 5213. MAPS DID NOT FIND THE PROBLEM.
**** CAUSE ****
THE CARD AT 01A A2R2.

0056 ***** 0056 ***** 0056
**** TROUBLE ** 5406 ****
I/O LSR CHECK ON IPL CLOCK 0 KYBD USE GAVE I/O LSR CHECK ALSO.
**** CAUSE ****
01A A2R2

0057 ***** 0057 ***** 0057
**** TROUBLE ** 5406 5213**
LSR HIGH, DBI AND A/B CHECK AT CLOCK 5 INTERMITTENT. CYCLE STEAL ASSIGNMENT IS 04 AND MACHINE FAILS ON I/O CYCLE WHEN PRINTING. 5406 5213 PROCESS CHECK
**** CAUSE ****
01A A2L2

0058 ***** 0058 ***** 0058
**** TROUBLE ****
5410 LSR PROCESS CHECK, NO LSR BITS. NO A REG BITS.
**** CAUSE ****
DEFECTIVE CARD, 01A B3P2 (Z-W2P2).
BASE LSR CONTROL CARD.
(5406 LOCATION 01A B2P2)

0059 ***** 0059 ***** 0059
**** TROUBLE ** 5406**
PROCESS CHECKS, CLOCK 6, LSR LO AND A/B. B REGISTER HAS BAD PARITY. I/O CYCLE. CANNOT IPL. MANUAL ROUTINES OK.
**** CAUSE ****
DEFECTIVE CHANNEL IN CARD, 01A B1J2.
(BAD LINE WAS FILE ID FIELD, CHAN LSR SELECT 4, B1J2 S02)

0060 ***** 0060 ***** 0060
**** TROUBLE ** 5406**
CUSTOMER GETS LSR HI AND LO CHECK ON IPL, CE GETS SAME AT FIRST A5 HALT ON IPL. CLOCK 4
**** PROBLEM ISOLATION AIDS ****
PRINTER I/O LIGHT FLICKERS THEN COMES ON SOLID AT FAILURE. LINE LIO ACTIVE IN 5213 ATTACHMENT ON TIO TO 5444. ALD PR211
**** CAUSE ****
01A-A2T2

0061 ***** 0061 ***** 0061
**** TROUBLE ** 5406 ****
LSR HIGH LOW DBI A/B CHECK WHEN DOING SENSE TO THE 5213. CUSTOMER JOB ONLY FAILED WHEN PRINTER RAN OUT OF PAPER. MAPS DID NOT FIND.
**** CAUSE ****
01A A2N2

0062 ***** 0062 ***** 0062
**** TROUBLE ** 5406 5410**
LSR HIGH LOW PROCESS CHECK ON IPL OR WHEN RUNNING A01. SOMETIMES ALSO GIVES SAR HIGH OR LOW PROCESS CHECK. ALWAYS FAILS AT CLOCK 1 I/O CYCLE WITH CS ASSIGNMENT OF 10.
**** CAUSE ****
01A A2Q2
01A AIQ2 (5406)

0063 ***** 0063 ***** 0063
**** TROUBLE ****
5406 PROCESS CHECK SAR CHECK ON SYSTEM RESET. LOOKS LIKE A HOT 3 BIT
**** PROBLEM ISOLATION AIDS ****
USE SAA 001 5406 SINGLE CYCLE SYSTEM RESET AND MANUAL ROUTINES
**** CAUSE ****
01A B2F2

0064 ***** 0064 ***** 0064
**** TROUBLE ** 5406 5410**
PROCESS CHECK SAR HIGH AND SAR LOW OR BOTH
**** CAUSE ****
FAILURE DURING LOADING DCP FROM DISK 5444
BAD CARD AT 01A-A1P2.
5410 A2P2 W3P2

0065 ***** 0065 ***** 0065
**** TROUBLE ** 5406 ****
PROCESS CHECK, SAR IS BLANK. MAY HAVE I/O CHECK LIGHT ON.
**** PROBLEM ISOLATION AIDS ****
FAILS WHEN GOING TO FILE ATTACHMENT. CAN LOAD FROM CASSETTE RECORDER OK (APLD).
**** CAUSE ****
DEFECTIVE FILE ATTACHMENT CARD, 01A A1P2 A1P2, LSR SELECT.
5410 2-W3P2 A2P2

0066 ***** 0066 ***** 0066
**** TROUBLE ** 5406**
KEYBOARD ERROR ...PROCESS CHECK SAR HI LOW WHEN ENTERING FROM KEYBOARD SAR HI LOW BLANK ...ARR AND IAR BLANK INT LEVEL 3 CLOCK 1
**** CAUSE ****
BAD CARD 01A B1M2 DEFECTIVE

0067 ***** 0067 ***** 0067

**** TROUBLE ****
5406 PROCESS CHECKS, I/O LIGHT ON, SAR HIGH AND/OR SAR LOW HALT AC134 CUST.MESSAGE MARGIN SWITCH OUT OF ADJUSTMENT OR DEFECTIVE
**** CAUSE ****
01A B2R2

0068 ***** 0068 ***** 0068
**** TROUBLE ****
5406 GETTING SAR HI LO, BLANK 8 OR OTHER RANDOM PROCESS CHECKS
**** PROBLEM ISOLATION AIDS ****
USING MAPS ON CPU MAP PAGE 7 BLOCK A4, KYBD READY LITE ON, YES LEG SAYS CPU START AND RUN KYBD DIAG. WHEN START KEY DEPRESSED SOME KIND OF PROCESS CHECK WOULD OCCUR.
**** CAUSE ****
01A B1M2

0069 ***** 0069 ***** 0069
**** TROUBLE ** 5406**
SAR HI OR LOW PROCESS CHECKS ONLY, THE BASE LSR CARDS MAY BE SWAPPED. TO SEE IF THE CK GOES FROM HI TO LO, OR VICE-VERSA. B2B2 IS SAR/BASE LSR HI, B2C2 IS SAR/BASE LSR LOW.
**** CAUSE ****
1 01A-B1H2 (CHAN DBO CARD) ALSO DBI CKS.
2 01A-B2F2 (A/B REGS) FAILED ON SYSTEM RESET. BIT 3 ALWAYS ACTIVE...
3 01A-B2S2 (CYCLE CONTROLS), PIN B12 (INTERRUPT POLL-SYS RESET) BAD LEVEL. CLOCK 1, IAR&SAR BLANK, INTERRUPT LAMP ON.

0070 ***** 0070 ***** 0070
**** TROUBLE ** 5406**
TROUBLE - PROCESS CHECK - SAR HIGH AND LOW CHECKS - CPU STOPS AT CLOCK 1 WITH SAR HI AND LO NO BITS ON (BLANK). IAR NO BITS ON. INTERRUPT LEVEL LIGHT ON. INTERRUPT LEVEL FOUR (4) ON. CPU I-OP ON.
****CAUSE****- CARD AT 01A-W2S2 PIN B12 BAD LEVEL.
COMMENTS - SAR HI AND LO EMPTY CAUSES ERRONEOUS INTERRUPT LEVEL 4 TO COME ON.

0071 ***** 0071 ***** 0071
**** TROUBLE ** 5406**
WILL NOT SENSE CONSOLE SWITCHES. SAR HI AND SAR LOW PROCESS CHECKS WITH BOTH OF THEM BLANK. MAN OPS RAN OK. MAPS DID NOT FIND.
**** CAUSE ****
01A B2T2

0072 ***** 0072 ***** 0072
**** TROUBLE ****
5406 PROC CHECK INVALID ADDRESS AFTER SECOND A5 *
HALT. ADDRESS IS 403F IN SAR. WILL FAIL BEFORE DCP IS PRINTED.
**** CAUSE ****
01A A1N2

0073 ***** 0073 ***** 0073
**** TROUBLE ****
5406 PROCESS CHECKS INVALID ADDRESS CHECK WHEN ENTERING DATA FROM KEYBOARD. PICKING UP BITS
**** CAUSE ****
01A B2L2

0074 ***** 0074 ***** 0074
**** TROUBLE ** 5406**
PROCESS CHECK (INVALID ADDRESS)
DBO CHECKS AFTER FANS REMOVED.
**** PROBLEM ISOLATION AIDS ****
DISCONNECTED FANS TO BRING ON THE PROBLEM THIS CAUSED THE SYMPTOM TO CHANGE TO DBO ERRORS.
**** CAUSE ****
REPLACED CARDS AT 01A A1P2 AND 01A A1T2.
AFTER FANS DISCONNECTED FOUND THAT STATUS A AND B COMING UP AT THE SAME TIME. THIS WAS BECAUSE STATUS A WAS COMING ON INTERMITTENTLY (NOT READY).

0075 ***** 0075 ***** 0075
**** TROUBLE ****
5406 PROCESS CHECKS WITH INSTALLATION OF B/M5134653 AFTER ENTERING NEW DATA INVALID ADDRESS CK RUNNING PROG 381
**** CAUSE ****
CE AT FAULT 0 ZERO INSTEAD OF 0 NUMERIC IN THIRD LINE OF UP DATE RECOPIED PACK TOOK CARE OF PROBLEM

0076 ***** 0076 ***** 0076
**** TROUBLE ****
5406 INVALID ADDRESS PROCESS CHECKS ON CE IPL AND CUSTOMER IPL. ON CE IPL CHECK HAPPENS AT FF5 HALT OF IPL. HAND LOOPS TO ALL I/O ALSO GIVE INVALID ADDRESS PROCESS CHECK. ALL CPU MANUAL ROUTINES WORK OK
**** CAUSE ****
01A B2J2

0077 ***** 0077 ***** 0077
**** TROUBLE ** 5406**
INVALID ADDRESS, INVALID OP, CHANNEL DBO PROCESS CHECK.
**** CAUSE ****
FILE ATTACHMENT CARD, 01A-A1C4. (FILE METERING)
ALSO CHECK 01A-A1P2, A1T2.

0078 ***** 0078 ***** 0078
**** TROUBLE ** 5406 5410**
TROUBLE - PROCESS CHECK. FAILING TO WRITE INTO STORAGE IF THE ADDRESS ENDED WITH A 4.
****CAUSE**** DIODE BOARD 35 HAD A FAULTY DIODE. REPLACED DIODE WITH A GY DIODE P/N2414891
5410 SEE FEMM PAGE 4-4 USE GY DIODE P/N2414891.

0079 ***** 0079 ***** 0079
**** TROUBLE ** 5406-5410 ****
EXTRA BITS OUT OF CORE. SET DATA IN TO 00, READ CUT INTO Q REGISTER- MAY SHOW AS F0, OF, DIFFERENT WAYS. FAILURE IS DIFFERENT BITS. FAILS SAME WAY ABOVE OR BELOW 8 K.(SENSE AMPS OK).
**** CAUSE ****
DEFECTIVE ALU OUT CARD, Z-W2H2. LOGIC PAGE AV132.

0080 ***** 0080 ***** 0080
**** TROUBLE ****
5406 GETTING INTERMITTENT DBI CHECK AT CLOCK 5. CYCLE STEAL ASSIGNMENT WAS ALWAYS 04 IN THIS CASE AND FAILED AS THE 5213 WAS DOING A CARRIER RETURN.
**** CAUSE ****
GROUND KEYBOARD TO I/O FRAME.

0081 ***** 0081 ***** 0081
**** TROUBLE ** 5406**
5406A/B OR DBI PROCESS CHECKS
CS ASSMNT BIT 5, CLOCK 5, A=09 (NO P-BIT), OP=F3, Q=E1
ABOVE CONDITIONS WHILE RUNNING DIAG. E8A RTN 2(RIPPLE PRINT)

AT THE BEGINNING OF THE SECOND PRINT LINE. WHEN 5213 WAS RECONFIGURED FROM A MOD3 TO A MOD2 FAILURE DISAPPEARED. FAILURE WOULD OCCUR ONLY ON PRINT LEFT OPERATIONS.
CAUSE* A-A2N2 (DBI ASSEMBLER)

0082 ***** 0082 ***** 0082
DBI PROCESS CHECKS
** CAUSE **
BAD CARD IN PRINTER ATTACHMENT. 01A A2R2

0083 ***** 0083 ***** 0083
** TROUBLE ** 5406
PROCESS CHECKS, DBI, CLOCK1, WITH DATA RECORDER 5496 ATTACHED. THE 5496 COULD BE OFF LINE AND SYSTEM GETS A PROCESS CHECK WITH A CS ASSIGNMENT OF 48.
** CAUSE **
CUSTOMER SYSTEM OUTLET DID NOT HAVE THE PROPER GROUND.

0084 ***** 0084 ***** 0084
** TROUBLE ** 5406
PROCESS CHECK CLOCK 4 TIME RUNNING 5496 DIAGNOSTIC A/B ALU CPU DBO CK4 PUNCH WORKED OK. READ FAILS
** PROBLEM ISOLATION AIDS **
CE BIT SWITCH PROGRAM TO DETERMINE THE FAILING CHARACTER
** CAUSE **
01A B1J2TRANSLATOR CARD

0085 ***** 0085 ***** 0085
** TROUBLE ** 5406
PROCESS CHECK DBI A/B CLOCK 1. MAPS CALL OUT B1J2 ON PAGE 045 CPU MAPS.
** CAUSE **
01A B2T2

0086 ***** 0086 ***** 0086
** TROUBLE **
5406 DBI A/B REG PROCESS CHECK ON CE IPL. ABC123 HALT OK DBI AND A/B CHECKS AT FF5 HALT. A REG OUT OF PARITY.
** PROBLEM ISOLATION AIDS **
BIT SWITCH PROGRAM FOR ALL I/O FROM CE HAND BOOK
** CAUSE **
PRINTER ATTACHMENT CARD 01A A2R2 BAD

0087 ***** 0087 ***** 0087
** TROUBLE **
5406 POWER UP OR AT ANY TIME YOU OPERATE THE SYSTEM START SWITCH COMES UP WITH PROCESS CHECK.VARIOUS CHECKS A/B ALU LSR ETC.
** PROBLEM ISOLATION AIDS **
START SWITCH INOPERATIVE WHEN TRYING TO RIPPLE CORE.
** CAUSE **
START SWITCH N/C CONTACT FTM.

0088 ***** 0088 ***** 0088
** TROUBLE ** 5406
TROUBLE ** PROCESS CHECK WITH A/B REG CHECK AND THE A REGISTER IS BLANK. DATA RECORDER SHOWS PRIORITY REQUEST 48. DATA RECORDER IS CALLING FOR A CYCLE STEAL REQUEST.
** CAUSE **
DEFECTIVE CABLE IN THE DATA RECORDER ATTACHMENT. CABLE IS FROM A-B1C5 TO THE DATA RECORDER CONNECTOR.
5496

0089 ***** 0089 ***** 0089
** TROUBLE **
5406 PROCESS CHECKS.....A REGISTER OUT OF PARITY & DBI CHECK Q = E2 CS = 48
** CAUSE **
WALL OUTLET WAS WIRED FOR NEUTRAL INSTEAD OF GROUND

0090 ***** 0090 ***** 0090
** TROUBLE **
5406 ALU, A/B, AND CPU DBO PROCESS CHECK ON IPL FROM CE PACK ON 5444. MAPS DONT FIND
** CAUSE **
01A A2H2 ALU CCNTROL CARD BAD

0091 ***** 0091 ***** 0091
** TROUBLE **
5406 PROCESS CHECKS ON IPL.ALU CHECK RUNNING CPU & MEMORY GETTING 03 HALT
** CAUSE **
01A B2H2

0092 ***** 0092 ***** 0092
** TROUBLE **
5406 PROCESS CHECK ON POWER UP. CPU DBO CLK5.WHEN FILE COMES READY SYSTEM ACTS AS IF IT IS IN IPL MODE.
** CAUSE **
CARD LOCATION 01A B2H2

0093 ***** 0093 ***** 0093
** TROUBLE **
5406 DBO CHECK, CLOCK 4, ALSO A OR B REGISTER CHECK
** CAUSE **
BAD CARD 01A A2T2

0094 ***** 0094 ***** 0094
** TROUBLE **
5406 PROCESS CHECK ON IPL. ROLLER 8 OP CHECK ONLY.
** CAUSE **
CARD LOCATION 01A A1L2

0095 ***** 0095 ***** 0095
5406 ABCD12345 HALT 3 SAR 0110.CUSTOMER HALT 1245,WITH INVALID OP (OP) ON RECOVERY.
** CAUSE **
01A A1Q2 CARD

0096 ***** 0096 ***** 0096
** TROUBLE ** 5406
INVALID OP PROCESS CHECK AFTER ABC123 HALT WHEN IPL CE PACK. CUSTOMER WAS GETTING AN INV OP ON IPL.
** CAUSE **
01A A1K2

0097 ***** 0097 ***** 0097
** TROUBLE ** 5406 **
IPL PROCESS CHECK CLOCK 8 INVALID OP.CUSTOMER FAILURE SAME. IPL FROM CE DISK AND AFTER HALT ABCD12345 GET PROCESS CHECK.
** PROBLEM ISOLATION AIDS **
MAPS WILL NOT LOCATE. TRY SEVERAL IPL MAY GET HALT 3 AFTER HALT ABCD12345.
** CAUSE **
CARD 01A B2S2

0098 ***** 0098 ***** 0098

** TROUBLE **
5406 PROCESS CHECK ON IPL..INVALID OP..
** CAUSE **
VOLTAGE CCNECTOR TO 01A-B1 BOARD SHORTING TO YELLOW WIRE..
THIS PUTS -4 VOLTS ON NET.
WHITE WIRE 01A B1 B4E1 SHORTED TO NET WB105AK4..WIRE A4B4

0099 ***** 0099 ***** 0099
** TROUBLE ** 5406 **
PROCESS CHECK ON IPL. INV OP AT CLOCK 8 WITH OP CONTAINING FE. USING APLD AFTER DCP AND A01 LOADED THE FOLLOWING MESSAGE IS PRINTED... UOT DOES NOT MATCH SENSE MAP 550....
** CAUSE **
LOOSE CABLE 01A B2Y1

0100 ***** 0100 ***** 0100
** TROUBLE ** 5406
CE RAN DIAGNOSTICS AND IT APPEARED THE TEST WOULD TURN OFF SENSE SWITCH SETTINGS IN THE MIDDLE. CUSTOMER GOT INTERMITTENT PROCESS CHECKS, INVALID OP.
** CAUSE **
01A B2H2 BRANCH INSTRUCTION FAILURE

0101 ***** 0101 ***** 0101
** TROUBLE **
5406 INVALID OP PROCESS CHECK IN CUSTOMER IPL. ON CE IPL INVALID OP AFTER ABC123 HALT. ALSO APLD GETTING INVALID OP.
** CAUSE **
BAD CARD 01A B2B2

0102 ***** 0102 ***** 0102
** TROUBLE ** 5406
PROCESS CHECKS. MAY SHOW AS INVALID OP, OR INVALID Q, OR INVALID ADDRESS, OR LSR HI LO.
** PROBLEM ISOLATION AIDS **
LOAD DIAGNOSTICS FROM ALTERNATE DEVICE.
** CAUSE **
DEFECTIVE FILE ATTACHMENT CARD, Z-W3R2. (DBI ASSEMBLER)

0103 ***** 0103 ***** 0103
** TROUBLE **
5406 INV OP PROCESS CHECK ON IPL. CUSTOMER GETS 135 HALT FOLLOWED BY PROCESS CHECK. CE LOAD GETS HALT 3. APLD WILL NOT LOAD. I/O OVERLAP SW. HAD NO AFFECT
** PROBLEM ISOLATION AIDS **
HAND PROGRAM KEYBOARD TO PRINTER FAILED ON BRANCH INSTRUCTION C0870000. SAR MIGHT GO TO PFFXX ON IPL.
** CAUSE **
MST 01A B2H2

0104 ***** 0104 ***** 0104
** TROUBLE **
INVALID OP PROCESS CHECKS. APPEARS CUSTOMER PROGRAM IS BEING OVERLAYED
** PROBLEM ISOLATION AIDS **
M-TAP ONLY DIAGNOSTIC THAT FAILS, GIVES INVALID ADDRESS. SZ INSTRUCTION FAILS , OP CODE 47. MAPS DO NOT FIND.
** CAUSE **
5406 01A B2N2,01A W2N2 5410 01A B3N2

0105 ***** 0105 ***** 0105
** TROUBLE ** 5406
TROUBLE...THE FIRST TIME THE PRINTER WAS USED THE CPU GOT A PROCESS CHECK...ROLLER 8 ..CHANNEL DBO ONLY..
CLOCK 8 ...NOT I/O CYCLE .. EB CYCLE.
01A B2T2

0106 ***** 0106 ***** 0106
** TROUBLE **
5406 PROCESS CHECKS INVALID OP, INVALID Q,
** CAUSE **
I/O OVERLAP SWITCH, BAD SWITCH.

0107 ***** 0107 ***** 0107
** TROUBLE ** 5406 **
PROCESS CHECK NO LIGHT ROLLER 8 AT CLOCK 3. (PROC CK WAS CPU DBO).
** PROBLEM ISOLATION AIDS **
USE 5406 SERVICE AID TO TPAP ERROR. SCOPE CHANNEL ON ALL BOARDS.
** CAUSE **
LOOSE PIN ON THE A2 BOARD 01A-A2V5-D05. IT COULD BE ANY LINE ON THE CHANNEL.

0108 ***** 0108 ***** 0108
** TROUBLE ** 5406
PROCESS CHECKS -- PRIMARY CK INDICATION NO ROLLER 8, SOMETIMES SDR, INVALID ADDRESS, INVALID OP
** PROBLEM ISOLATION AIDS **
MANUAL ROUTINES SHOWED FAILURE. ALTER STORAGE ETC.
** CAUSE **
01A B2T2 CPU CLOCK TOO SHORT

0109 ***** 0109 ***** 0109
** TROUBLE **
5406 PROCESS CHECK NO ROLLER 8
** CAUSE **
01A A2Q4

0110 ***** 0110 ***** 0110
** TROUBLE ** 5406
PROCESSOR CHECKS WITH NO INDICATION IN ROLLER 8.
** CAUSE **CARDS A GATE A2C2 AND A2B2 REPLACED

0111 ***** 0111 ***** 0111
TROUBLE ...PROCESS CHECK ON 5406 WITH NO LIGHTS IN ROLLER 8...PRINTER READY LIGHT BLINKING AT THE SAME TIME.
** CAUSE **
BROKEN CONNECTOR ON 5213 END OF FORMS SWITCH.

0112 ***** 0112 ***** 0112
** TROUBLE ** 5406 **
PROCESS CHECKS WITH NO LITES ON ROLLER 8
** CAUSE **
CRIMP CONNECTION TO PRINTER ATTENTION LIGHT REPAIRED. FOUND BY VIBRATION OF 5213.

0113 ***** 0113 ***** 0113
TROUBLE...WHEN 5213 RUN OUT OF PAPER THE END OF FORMS SWITCH MAY CAUSE A PROCESS CHECK...BLANK IN ROLLER 8 OR MISC. PROCESS CHECKS.
** CAUSE ** NOISY END OF FORMS SWITCH

0114 ***** 0114 ***** 0114

```

** TROUBLE ** 5406
IPL THE CE PACK AND GET A INVALID ADDRESS WITH SAR AT 5E00 *
** CAUSE **
01A B2N2
0115 ***** 0115 ***** 0115
** TROUBLE ** 5406
CUSTOMER IPL 1245 HALT FROM F1 AND R1, CE PACK IPL
PROPERLY.
** CAUSE **
01A A1J2
0116 ***** 0116 ***** 0116
** TROUBLE ** 5406-5444 **
CUSTOMER GETTING INVALID OP PROCESS CHECK ON IPL. APLD IPL'S OK
AND 5444 DIAGNOSTICS RUN. WHEN TRYING TO IPL FROM CE PACK, THE CE
GETS HALT ABC123, HALT FF5 THEN BLANK 3 HALT WITH IAR AT 0110.
** CAUSE **
CE MODE CABLE ON DRIVE DAMAGED BY DRAWER.
0117 ***** 0117 ***** 0117
PROCESS CHECKS ON SYSTEM RESET.
** TROUBLE ** 5406
FAILS WITH VARIOUS CHECKS ON SYSTEM RESET CS ASSIGNMENT IS
ALWAYS 21. CS REQUEST LINE 7 IS PULSING.
** CAUSE **
01A A1G2
0118 ***** 0118 ***** 0118
** TROUBLE ** 5406 **
WRONG TOTAL ON CUSTOMERS JOBS...DIAGS FAIL CPU MEMORY TEST...
ON IPL FROM CE DISK HAS C04 HALT SOLID...RPG ONLY.
** CAUSE **
REPLACED 01A B2N2
0119 ***** 0119 ***** 0119
** TROUBLE **
5406 5213 STOPPING NO HALT INDICATION.
** CAUSE **
END OF FORM SWITCH BOUNCING
0120 ***** 0120 ***** 0120
** TROUBLE **
5406 C24HALT RUNNING DIAGNOSTIC
25. MAPS PAGE 150 WITH SAR 55 CALL OUT B2H2.
** CAUSE **
01A B2M2
0121 ***** 0121 ***** 0121
** TROUBLE **
5406 GIVES BCD HALT ON LSR TESTS. IF CE PUTS 03FE IN SWITCHES
CPU AND MEMORY RUNS CORRECTLY. A01 FAILS WITH INVALID SENSE.
** CAUSE **
01A A1R2
0122 ***** 0122 ***** 0122
** TROUBLE ** 5406 **
CPU TEST HALTS WITH A 034. SAR MAY BE 9E, 9F, OR A0.
** CAUSE **
01A A1 B2N2 DEFECTIVE
0123 ***** 0123 ***** 0123
** TROUBLE ** 5406
5406 CD4 HALT WHEN RUNNING CPU MEMORY SAR AT 0030 0031 0032.
** CAUSE **
01A B2N2
0124 ***** 0124 ***** 0124
** TROUBLE **
5406 HANGS IN LOOP ON PROGRAM 3F. MAPS DO NOT FIND.
** CAUSE **
01A A1F2
0125 ***** 0125 ***** 0125
** TROUBLE ** 5406-5410 **
TROUBLE 1. CUSTOMER CAME UP WITH INTERMITTENT PROCESS CHECKS.
AND UNDETERMINED ERRORS.
2. CPU AND MEMORY DIAGNOSTICS FAILED WITH A 3C HALT.
**CAUSE** - ROTARY BIT SWITCH POSITION FAILING TO MAKE.
NOTE. IF THE CONTACTORS ON THE SWITCHES FAIL TO MAKE THIS GIVES
YOU A FLOATING LEVEL. THIS IS AN ACTIVE LEVEL.
0126 ***** 0126 ***** 0126
** TROUBLE ** 5444
5406 GIVING 135 HALTS INTERMITTENTLY. USUALLY OCCURS AFTER
DRIVE HAS SET IDLE FOR SEVERAL MINUTES. SAME AS BLANK 1 ON 5410
** PROBLEM ISOLATION AIDS **
5444 TIP 090 PROCEDURE FOR POWDERING VOICE COIL
** CAUSE **
VOICE COIL BIND, PUT FINE POWDER IN BUFFER FOR TEMPORARY FIX
0127 ***** 0127 ***** 0127
** TROUBLE **
5406 5444 GETS HALT 1245 ON CUSTOMER IPL FROM FIXED OR
REMOVABLE PACK. CE PACK CAN IPL AND RUN ALL DISK DIAGNOSTICS.
** CAUSE **
BAD CARD 01A B2J2 CHANNEL IN CARD
0128 ***** 0128 ***** 0128
** TROUBLE **
5406 ABCD2345 HALT ON DCP. CPU TEST RUNS OK. APLD HALTS WITH
ABCD15. CUSTOMER GETTING ABCD2345 HALT ALSO.
** CAUSE **
BAD CARD LOCATICN 01A B2N2
0129 ***** 0129 ***** 0129
** TROUBLE ** 5406
CUSTOMER GETTING AC23 HALT. CE RUNNING E88 GETTING D134 HALT.
MAPS CALL OUT CARD A2S2. FAILURE POINTS TO PCAR NOT UPDATING COR
RECTLY.
** CAUSE **
01A A2C2 AND 01A A2C3
0130 ***** 0130 ***** 0130
** TROUBLE **
5406 BCD245 HALTS.
** PROBLEM ISOLATION AIDS **
ALL DIAGNOSTICS RUN. WRITING (0) ZERO IN VTCC
** CAUSE **
01A A1D4
0131 ***** 0131 ***** 0131
** TROUBLE ** 5406
ALL HALT INDICATORS ON ALL THE TIME. ALL OTHER LAMPS

```

```

OPERATE CORRECTLY.
** PROBLEM ISOLATION AIDS **
PROBE 01A B1K4 B08 FOR MINUS 1.3 VOLTS LOGIC PK024.
** CAUSE **
01A B1G2 OR B1K2 OR B1K3 CAN ALL TIE DOWN THIS LINE B1K4 B08
0132 ***** 0132 ***** 0132
** TROUBLE **
5406 CONSOLE LIGHT WILL NOT WORK. THE LAMP TEST DOES NOT
FUNCTION. METERING THE 7.25 YB115 READS 1.1 VOLTS
** PROBLEM ISOLATION AIDS **
METER VOLTAGE AT T2 YB115
** CAUSE **
RELAY K2 POINTS YB100
0133 ***** 0133 ***** 0133
TROUBLE - 5406 USE METER RUNS CONTINUOUSLY OR DOES NOT RUN AT
ALL. EITHER ONE OF THESE TWO CONDITIONS MAY EXIST
DEPENDING ON THE SENSITIVITY OF THE RELAY IN THE
METER POWER SUPPLY.
** CAUSE **
THE CABLE FROM THE USE METER POWER PAC TO THE 01A-B1
BOARD MAY BE PLUGGED INCORRECTLY AT THE B1 BOARD. IT
SHOULD BE PLUGGED TO 01A-B1S4 ON PINS B04 AND B05.
REFERENCE ALD PAGE ZA 120.
0134 ***** 0134 ***** 0134
** TROUBLE ** 5406 **
ERROR HALT 18 ON DIAGNOSTIC 803 ROUTINE 2
ERROR LIGHT SHOWS D1 HALTS. ATTEMPTING TO TEST 3741 TO LCA.
ERROR MESSAGE IS 'TRANSMITTED DATA NOT AS EXPECTED'
'TRANSMIT MESSAGE NO. 1'
'DATA ACT 5555532321F2683'
'DATA EXP 5532321F260301FF'
** PROBLEM ISOLATION AIDS **
CHECK UNIT DEFINITION TABLE IN UDT PRINTOUT OF DCP
** CAUSE **
UDT WAS NOT CONFIGURED CORRECTLY. DID NOT INDICATE -1 OPTION.
IT SHOULD BE 80-1 FOR BASIC LCA.
NOTE. LCA HAS AN INTERNAL CLOCK
0135 ***** 0135 ***** 0135
** TROUBLE **
5406 GETTING HALT F801 WITH SENSE INFORMATION OF 4083 WHEN
RUNNING F81. THIS INDICATES A UNIT CHECK BECAUSE A LINE CALLED
UNIT ON LINE AND READY IS NOT ACTIVE.
** CAUSE **
THE AUTOMATIC RECORD RELEASE SWITCH ON THE 5496 MUST BE ON.
0136 ***** 0136 ***** 0136
** TROUBLE ** 5406-2222 **
SKIPS ONE LINE TO FAR NO ERROR HALTS ERAP HAS TEMP LOG
VERT CYCLE CHECKS
** CAUSE **
REPLACE STOP COLLAR AND ADJ. WAS SLIPPING
0137 ***** 0137 ***** 0137
** TROUBLE ** 5406 **
5213 VCC CHECK ON SKIP WILL WORK ON INDEX OPERATION
** CAUSE **
PLUG P3 PIN 13 HAD BAD CONNECTION. THIS IS LOCATED BEHIND
THE MODESTY SKIRT. BREAKING UP THE TRANSDUCER PULSE FROM
THE CARRIAGE EMITTER.
0138 ***** 0138 ***** 0138
** TROUBLE ** 5213
GETTING SYNC CHECKS WHEN CUST PRINTS IN A RIGHT
TO LEFT DIRECTION. ERAP SHOWED MARGIN CHECK.
** PROBLEM ISOLATION AIDS **
PRINTER IS A MODEL 3 (BI-DIRECTIONAL). CE NOTICED THAT ALL
DIAGNOSTICS RAN BUT THEY DID NOT DO ANY PRINTING IN LEFT TO
RIGHT DIRECTION AS THEY SHOULD HAVE.
** CAUSE **
01A A2S2
0139 ***** 0139 ***** 0139
** TROUBLE ** 5406 **
5213 CARRIAGE CLUTCH SPRING P/N2629770 DIFFICULTY IN
OBTAINING CORRECT ADJUSTMENT
** CAUSE **
SPRING P/N2629770 SHOULD BE 20 AND ONE QUARTER TURNS
0140 ***** 0140 ***** 0140
** TROUBLE ** 5406-5213 **
TROUBLE**** VCC CHECK----- VERTICAL CYCLE CHECK
* CAUSE *** CARRIAGE CLUTCH HELICAL SPRING. DIAGNOSTIC WILL
NOT USUALLY SHOW ERROR. USE BIT SWITCH PROGRAM
TO TAB RIGHT SKIP HEX 15 TAB LEFT SKIP HEX 15
SYNC SCOPE SSI AND LOOK AT FEEDBACK WILL SEE
PULSE VARY
0141 ***** 0141 ***** 0141
** TROUBLE **
5213 SYNC CHECK. INTERMITTENT.
** CAUSE **
DEFECTIVE STEPPER MOTOR. **NOTE STP. MOTOR USUALLY OK, SUSPECT
DEFECTIVE SENSE AMPLIFIER (C2 $C3) OR BLOWN DIODES. IS ECA016
INSTALLED.
0142 ***** 0142 ***** 0142
** TROUBLE ** 5213
SYNC CHECKS AC23 HALTS HORIZONTAL CYCLE CHECKS
NUMBER INFORMATION
1 TITLE PAGE
2 INDEX
3 SYNC CHECK DESCRIPTION / THEORY
4 5213 PRINTER CHECK OUT
5 OPTIMUM ATTACHMENT TIMINGS ( SINGLE SHOTS )
6 SUSPECT ATTACHMENT CARDS
7 TEMPORARY TRANSDUCER AMPLIFIER FIX
8 SUSPECT ATTACHMENT CARDS ( CONTINUED )
3. SYNC CHECK DISCRIPTION / THEORY
PRINT TRANSDUCER PULSES ARE FED FROM THE PRINTER TO THE ADAPTER
AS A RESULT OF THE PRINT EMITTER WHEEL ROTATING PAST THE
TRANSDUCER. THE PULSES ARE AMPLIFIED IN THE ADAPTER AND FED TO
THE CONTROL LOGIC. SYNC CHECKS OCCUR WHEN THE LOGIC RECOGNIZES
TOO MANY OR TOO FEW PRINT TRANSDUCER PULSES DURING A CHARACTER
SPACE. IN OTHER WORDS AS THE CARRIER MOVES 1 POSITION, 7 PULSES
SHOULD BE COUNTED. IF 6 PULSES ARE COUNTED A SYNC CHECK WILL
RESULT. IF 8 PULSES ARE COUNTED A SYNC CHECK WILL RESULT. IF
THE OUTPUT OF THE TRANSDUCER AND/OR AMPLIFIER IS NOT IN SYNC
WITH THE LOGIC CONTROL THE EMITTER COUNT MAY BE INCORRECT.
4. PRINTER CHECK OUT
PURPOSE * TO ENSURE THAT THE PRINTER IS CORRECTLY ADJUSTED AND
THAT ALL PRINTER STEPPER MOTOR CIRCUITRY IS FUNCTIONAL.
1. ENSURE THAT 5213 ECA016 IS INSTALLED.(AUTO SHIP 3/30/73 )
2. PERFORM THE EMITTER AND TRANSDUCER SERVICE CHECKS PER FETMM
DO NOT CHANGE ADJUSTMENTS WHICH ARE WITHIN THE SPECIFICATION
3. PERFORM THE STEPPER MOTOR CHECK PROCEDURE PER 5213 / 2222
SERVICE AID NUMBER 001.
4. RUN THE PRINTER DIAGNOSTICS. DO NOT CHANGE TIMINGS WHICH ARE

```

WITHIN SPECIFICATION.
5. OPTIMUM ATTACHMENT TIMINGS
* PURPOSE * TO ENSURE THAT THE ADAPTER CONTROL SINGLE SHOTS ARE BEST CASE FOR PRINTER OPERATION
1. ASSURE THAT SSA IS SET TO 1.6MS. ECA091 EC571626 UPDATES DIAGNOSTIC ROUTINE E85 TO SET SSA TO 1.6MS.
2. STOP SINGLE SHOTS SSW,SSX,SSY & SSZ SET TO DIAGNOSTIC SPECIFICATION.
6. SUSPECT ATTACHMENT CARDS
PURPOSE * TO INDICATE ATTACHMENT CARD FAILURES IN THE ORDER OF FREQUENCY, WITH ASSOCIATED SYMPTOMS.
1. PRINT TRANSDUCER AMPLIFIER CARD (S). POSITION C2 AND OR C3 P/N5865403 - MAJOR FAILURE MODE IS DROPPING TRANSDUCER PULSES.
2. P/N5863323 OR P/N5863325 - MAJOR FAILURE MODE IS EXTRANEIOUS TRANSDUCER PULSES.
REFER TO 7 FOR TEMPORARY FIX.
EXAMINE MOTOR AND AMP CARD, TAKE ACTION SPECIFIED.
EXAMINE MOTOR AND AMP CARD, TAKE ACTION SPECIFIED. OPEN INCIDENT MOTOR AMPLIFIER CARD RECOMMENDED ACTION
SUPERIOR 5865403 NO CHANGE. NO RESISTORS.
SUPERIOR 5863323 CHANGE TO 3325(ECA081).ADD RESISTORS.
SUPERIOR 5863325 ADD RESISTOR(S).
SANYO 5865403/3323 CHANGE TO 3325(ECA081).ADD RESISTORS.
SANYO 5863325 ADD RESISTORS.
INSTALL TWO 2.2K OHMS P/N2588362 USING BELLY DANCERS ON O1A A2B2 B02 TO B04 & FROM B05 TO D05. INSURE TRANS.AIR GAP IS.001" MANDATORY EC571653 WILL INSTALL RESISTORS ON 5406 AS ABOVE.
8. SUSPECT ATTACHMENT CARDS
1. THE POTENTIOMETER WIPER ON THE START SINGLE SHOT CARD CAN DEVELOP A HIGH RESISTANCE. THIS WILL CAUSE THE DIAGNOSTIC TIMING INDICATION TO VARY. THE OUTPUT OBSERVED WITH A SCOPE WILL HAVE NOISE. SUSPECT O1A A2Q2.
2. THE LOGIC CONTROL CARD WILL RESULT IN ERRATIC PRINT HEAD MOTION WITH CRASH STOPS. IF THE 5213 CIRCUITRY IS OK PER SERVICE AID NUMBER 001 SUSPECT THIS CARD. O1A A2P2.
3. THE SYNC CHECK CARD WILL RESULT IN SYNC CHECKS WITH NO PRINT FAILURES. IF THE AMPLIFIER CARDS ARE OK SUSPECT O1A A2S2.

0143 ***** 0143 ***** 0143 *****
** TROUBLE ** 5213 **
AC23 HALT. HORIZONTAL CYCLE AND/OR SYNC CHECKS.
** PROBLEM ISOLATION AIDS **
DIAGNOSTICS.
** CAUSE **
DEFECTIVE LEFT MARGIN SWITCH. COULD ALSO BE CAUSED BY IMPROPER ADJUSTMENT OF THE MARGIN SWITCH.

0144 ***** 0144 ***** 0144 *****
** TROUBLE ** 5213
E88 DIA. SYNC CHECK, DIODE CARD REPLACED, NO HELP
D234 HALT
** CAUSE **
COLD SOLDER JOINT IN CABLE TO DIODE CARD TO STEPPER MOTOR

0145 ***** 0145 ***** 0145 *****
** TROUBLE ** 5213
5213 GIVING SYNC CHECK (CK) (CHECKS) ON ENHANCE PRINT AFTER CONVERSION FROM A MOD 2 (MOD2) (MODEL 2) TO A MOD 3 (MOD3) (MODEL 3). ALL OTHER PRINT OPERATIONS OF 5213 PERFORMED CORRECTLY.
** PROBLEM ISOLATION AIDS **
RETARDING THE TIMING, REPLACING CARDS O1A A2P2 O1A A2S2 O1A A2L2 DIDNT FIX PROBLEM. PROBLEM - BIND IN 5213 LEADSCREW AND CARRIER. THE BIND WAS A COMBINATION OF EXCESSIVE LUBRICANT ON THE LEADSCREW WEAR OF THE NYLON BUSHING AND THE BACKLASH BEING OUT OF ADJUSTMENT.
** CAUSE **
PROBLEM WAS FIXED BY CLEANING EXCESSIVE LUBRICANT ON THE LEADSCREW AND REPLACING THE NYLON BUSHING AND READJUSTING THE BACKLASH.

0146 ***** 0146 ***** 0146 *****
** TROUBLE **
5213 SYNC CHECKS USING CHECK RESET AND SYSTEM RESET ON FIRST OPERATION OF SWITCH CARRIER GOES TO RIGHT MARGIN ON 2ND DEPRESSION IT GOES TO LEFT MARGIN.ON PR 241 LINE CALLED GO RIGHT 1 SPACE NEVER RESETS.
** CAUSE **
HIGH RESISTANCE CONNECTION IN PRINTER CABLE CONNECTOR UNDER PRINTER IN MODESTY SKIRT NOT THE SLT CONNECTOR THIS CONNECTOR IS THE BLACK CONNECTOR.

0147 ***** 0147 ***** 0147 *****
** TROUBLE **
SYNC CHECK AND DIFFICULTY ADJUSTING SPEED ON 5406 CPU
** PROBLEM ISOLATION AIDS **
DIAGNOSTIC E81
** CAUSE **
ROLLER CLUTCH P/N2526527 SWELLED UP. REPLACED ASSEMBLY.

0148 ***** 0148 ***** 0148 *****
** TROUBLE **
5213 SYNC CHECKS. PRINTS ONE DOT WHEN FAILS. WHEN COVER IS BUMPED IT WOULD TURN ON INTERLOCK LITE.
** CAUSE **
ADJ. COVER INTERLOCK SWITCH.

0149 ***** 0149 ***** 0149 *****
** TROUBLE **
5213 SYNC CHECK
** CAUSE **
EMITTER WHEEL REPLACED ONE TOOTH BAD

0150 ***** 0150 ***** 0150 *****
** TROUBLE ** 5213
SYNC CHECKS OCCUR AFTER NEW AMPLIFIER CARDS (P/N5863325) AND 2K OHM RESISTORS ARE PUT ON BY SFC500 OR EC.
** CAUSE **
CHECK TIMING OF PRINT EMITTER USING DIAGNOSTIC E89. PRINTOUT SHOULD LOOK LIKE THIS ALLOWABLE MAKE TIME X X X
NOTE*** THIS TIMING IS FOR A MODEL 2 ONLY. MODEL 3 PRINT TRANSDUCERS SHOULD BE ON THE SCRIBED LINES, X'S WILL BE TO LEFT

0151 ***** 0151 ***** 0151 *****
** TROUBLE ** 5213
HORIZONTAL CYCLE CHECK (HALT D234) DIAGNOSTIC E86. HAPPENED ON 2222. ADDITIONAL SYMPTOM...CHATTER LEFT MARGIN ON SYS RESET... ON PRINTING 'E' PRINTS WRONG ON 1ST 'E' AND HALTS.
** CAUSE **
O1A A2Q4

0152 ***** 0152 ***** 0152 *****
** TROUBLE ** 5406
CAN NOT PRINT ANYTHING FROM PRINTER. STEPPER MOTOR IS DETENTED SOLID AND WONT MOVE. DIAGNOSTIC E81 GIVES D234 HALT WITH SYNC CHECK
** CAUSE **
O1A A2P2 ELEMENT DOES NOT RETURN ON CHECK RESET SYS RESET

0153 ***** 0153 ***** 0153 *****

** TROUBLE **
5213 SYNC CHECK CARRIER WONT MOVE WILL NOT MOVE USING CHECK RESET AND SYSTEM RESET CARRIER SEEMS TO GO TO -1 PRINT POSITION
** CAUSE **
TWO BLOWN STEPPER MOTOR DIODES

0154 ***** 0154 ***** 0154 *****
** TROUBLE **
5406 5213 AFTER PRINTING A LINE FORWARD THE PRINT HEAD WOULD RETURN AND STOP IN POSITION 0 INSTEAD OF 1. SYSTEM WOULD THEN SYNC CHECK. ALL DIAGNOSTICS RUN ERROR FREE. FAILS ON CUSTOMER JOB ONLY.
** CAUSE **
CARD IN O1A A2Q4

0155 ***** 0155 ***** 0155 *****
TROUBLE..5213 MOTOR HANGS UP WITH I/O CHECK LIGHT ON.. SYNC CHECK...CE SWAPPED DRIVER CARDS AND ATTACHMENT CARDS.
** CAUSE **
REPLACED FWD FEEDBACK TRANSDUCER.

0156 ***** 0156 ***** 0156 *****
** TROUBLE ** 5406 5213 **
EXTRA OR MISSING DOTS CAN BE CAUSED BY BAD DIODES OR CAPACITORS
** PROBLEM ISOLATION AIDS **
MISSING DOT OPEN DIODE OR CAPACITOR, ARMATURE FAILS TO RESTORE IN TIME TO PRINT SECOND DOT IN SUCCESSION. FAILS TO PRINT ALTOGETHER SHORTED CAPACITOR. TWO DOTS PRINTED TOGETHER, 1 AND 2 FOR 1, ETC. SHORTED CABLE. REFERENCE LOGIC ZZ105

0157 ***** 0157 ***** 0157 *****
** TROUBLE ** 5406-5213 **
DROPS TOP AND BOTTOM PRINT WIRES EARLY IN THE MORNING.
** CAUSE **
WORN RIBBON GUIDE COMPARE GUIDE TO NEW TO CHECK FOR WORN GUIDE. WORN ON LEFT SIDE.

0158 ***** 0158 ***** 0158 *****
** TROUBLE **
5406 5213..IPL AND PRINTS ALL DASHES..HAND LOOP ALSO PRINTS DASHES..TAB LEFT OR RIGHT GOES TO END AND CHATTERS..MAPS NO HELP..INDEXES O.K.
** CAUSE **
BAD CARD A-A2U4

0159 ***** 0159 ***** 0159 *****
** TROUBLE ** 5406-5213 **
PRINTING EXTRA DOT ON SPACE OPERATIONS OR WITH OTHER CHARACTERS.
** CAUSE **
WIRE PINCHED OR SHORTED ON THE W2 CONNECTOR HOLDING STRAP ON THE CABLE CLAMP.

0160 ***** 0160 ***** 0160 *****
** TROUBLE ** 5213
WILL BEND PRINT WIRE NUMBER 1 INTERMITTENTLY.
** PROBLEM ISOLATION AIDS **
SCOPED THE PULSES GOING TO THE DIFFERENT PRINT MAGNETS AND NOTICED THE ONE TO MAGNET 1 WAS DIFFERENT.
** CAUSE **
THE CAPACITOR C7 WAS SHORTED. LOGIC PAGE ZZ105.

0161 ***** 0161 ***** 0161 *****
2222
TROUBLE.... DROPS PRINT WIRES INTERMITTENTLY AFTER THE PRINTER HAS SET IDLE. WIRES BEGIN TO OPERATE PROPERLY AFTER PRINTING SEVERAL CHARACTERS LINES.
** CAUSE **
..... 1. VERIFY THAT THE OIL RESERVOIR IS FILLED / OR THE FELT IS SATURATED.
2. MANUALLY OPERATE THE AFFECTED ARMATURE TO ENSURE THAT IT WILL RESTORE STATICALLY. CLEAN AND ADJUST PER FETMM.
3. DAMPEN A STRIP OF CARD STOCK WITH IBM CLEANING FLUID. INSERT BETWEEN ARMATURE AND CORE TO REMOVE ANY ACCUMULATION OF INK, PAPER DUST, ETC...

PRINT HEAD CABLE MAY HAVE BROKEN WIRES INSIDE INSULATION. SHOWS UP AS DROPPING DOTS WITHIN SEVERAL PRINT POSITIONS. THE CABLE WIRE MAKES CONTACT EITHER SIDE OF FAILING AREA SO THAT NO CHARACTER DOTS ARE MISSING ADJACENT TO THE FAILING POSITIONS.

0162 ***** 0162 ***** 0162 *****
** TROUBLE **
5406 2222 LEDGER CARD OVER PRINTING ON LINE 14 OF LEDGER CARD WITH NO CHECKS. INTERMITTENT TROUBLE ON CUSTOMER JOBS. COULD ALSO BE ON LINE 13 OR 15
** PROBLEM ISOLATION AIDS **
STOP SYSTEM AS SOON AS OVER PRINT STARTS AND LOOK FOR CARD BUCKLING IN FEED.
** CAUSE **
CARD OUT MICRO SWITCH HAD TOO MUCH TENSION AND WAS HOLDING CARD. ADJUST SWITCH TO MAKE WITHOUT CAUSING CARD DRAG

0163 ***** 0163 ***** 0163 *****
** TROUBLE **
5213 BI-DIRECTIONAL PRINT OFF ON HORIZONTAL REGISTRATION
** CAUSE **
PRINT LEFT TRANSDUCER OUT OFF ADJUSTMENT.

0164 ***** 0164 ***** 0164 *****
** TROUBLE **
THE 5213 PRINTS WHILE THE PRINT HEAD IS MOVING FROM RIGHT TO LEFT.THE INFORMATION IS PRINTED BACKWARDS BUT NOT IN MIRROR IMAGE. ** EXAMPLE** 1234 PRINTS AS 4321.
** CAUSE **
THE CARD AT O1A-A2S2 IN THE 5406.

0165 ***** 0165 ***** 0165 *****
** TROUBLE ** 5213
PRINT OUT GARBLED WHEN PRINTER IS OPERATING IN THE RIGHT TO LEFT DIRECTION
** PROBLEM ISOLATION AIDS **
NO ERROR HALTS OCCUR RUNNING PRINTER DIAGNOSTICS THE RIPPLE PRINT TEST MISPRINTS IN PRINT LEFT MODE
** CAUSE **
O1A A2L2

0166 ***** 0166 ***** 0166 *****
** TROUBLE **
5213 PRINTS ANY OR ALL WIRES NO PATTERN OR CHARACTERS.
** PROBLEM ISOLATION AIDS **
IF CARRIER NOT AT POSITION 1 AND CHECK RESET, SYSTEM RESET IS PRESSED, CARRIER GOES PAST POSITION 1 TO LEFT FRAME.
** CAUSE **

TROUBLE...INTERMITTENT MARGIN CHECKS. DIAGNOSTICS RUN OK.
 FAILS MOSTLY ON SHORT PRINT LINE OPERATIONS.
 ** CAUSE **
 MARGIN MAGNET MOUNTED UPSIDE DOWN. RED DOT
 INDICATES POLARITY AND MUST BE AT BOTTOM OTHER
 WISE LARGE PERMANENT MAGNET UNDER PRINT HEAD
 WILL CANCEL IT OUT. REF. 5213 FETMM PAGE 2-6.

0197 ***** 0197 ***** 0197
 ** TROUBLE **
 5213 MARGIN SWITCH ADJUSTMENT DIFFICULT & IMPOSSIBLE TO MAKE
 ** CAUSE **
 STEPPER MOTOR SPEED TOO FAST

0198 ***** 0198 ***** 0198
 ** TROUBLE ** 2222
 LINE LOCATION READ FAILURES MAY BE DUE TO CORNER CUT CARDS.
 ALSO ADJUSTMENT OF LOWER READ HEAD MAY BE INCONSISTENT AND
 VARY WITH DIFFERENT WIDTH CARDS WHEN CORNER CUTS ARE USED.
 ** CAUSE **
 ADJUST READ HEAD WITH STANDARD CARDS

0199 ***** 0199 ***** 0199
 ** TROUBLE **
 5406 5213 E88 D134 HALTS CE HAS REPLACED A2C2 A2C3 A2S2
 ** CAUSE **
 PRINT TIMERS SLIGHTLY OUT OF ADJUSTMENT

0200 ***** 0200 ***** 0200
 5406 DIAGNOSTIC E830 HALT A124 NO 2222 INSTALLED **
 ON SYSTEM.
 ** CAUSE **
 CHECK RESET WIRED BACKWARD.

0201 ***** 0201 ***** 0201
 ** TROUBLE ** 5406 **
 ERROR MESSAGE PRINTED...SIO HEX 22 ...HALT D134...
 MAPS CALL OUT B1L2 B1M2.
 ** PROBLEM ISOLATION AIDS **
 NO PROCESS CHECK
 ** CAUSE **
 01A B2L2

0202 ***** 0202 ***** 0202
 ** TROUBLE ** 5406
 DIAGNOSTICS FAIL WITH FA5 HALTS E83, E85, E87, AND E88
 MAY ALSO GIVE INDICATION THAT EITHER MARGIN SLOW
 SWITCH IS DEFECTIVE.
 ** CAUSE **
 01A A2S2 DEFECTIVE IN 5406

0203 ***** 0203 ***** 0203
 ** TROUBLE **
 2222 DIAG. HALT D12 RUNNING E91 ROUTINE 05.MAPS CALL OUT CARD
 01A A2E2 FOR ACTUAL STATUS OF 040E (XXOE) WHICH WAS PRINTED OUT.
 ** PROBLEM ISOLATION AIDS **
 NONE
 ** CAUSE **
 01A A2D4

0204 ***** 0204 ***** 0204
 ** TROUBLE ** 5406 **
 D14 HALT ON DIAGNOSTIC E81
 WHEN LOADING DCP THE 5213 WOULD SPACE ONE AND STOP
 WITH NO PRINT. HAND LOOP WOULD NOT WORK.
 ** CAUSE **
 01A A2R2

0205 ***** 0205 ***** 0205
 ** TROUBLE **
 5406 5213 D14 HALTS ON E81 AND E82. CUSTOMER JOBS GET AC1234
 HALT ALSO HALT AC1234 WHEN OUT OF PAPER
 ** CAUSE **
 BAD CARD 01A A2S2

0206 ***** 0206 ***** 0206
 ** TROUBLE ** 5406-5213 **
 A REPLACEMENT PRINT MAGNET FOR NEW STYLE PRINT HEAD WILL NOT
 OPERATE CORRECTLY. THE ARMATURE MAY NOT RESEAL OR MAY BE SLOW.
 THIS MAY BE A NEWER VERSION MAGNET, REQUIRING AN ADJUSTMENT.
 ** PROBLEM ISOLATION AIDS **
 CHECK FULCRUM SCREW THAT IS NEAR CENTER OF ARMATURE
 ** CAUSE **
 IT'S EXTREMELY IMPORTANT THAT F.SCREW IS SET TO STOP ARMATURE
 PRECISELY AT THE TIME ARMATURE CONTACTS THE CORE.
 AFTER INITIAL ADJ.***DO NOT ADJUST***F.SCREW FOR ANY OTHER COND.
 1. REPLACE DEFECTIVE P.MAGNET AS PER FETMM.
 2. TURN F.SCREW CW. UNTIL ARMATURE RELEASES FROM CORE.
 3. TURN F.SCREW CCW.VERY SLOWLY TIL ARM JUST SEALS AGAINST CORE
 4. PLACE SHORTING BAR ACROSS PERM.MAG. CHECK THAT ARM.JUST SNAPS
 BACK AGAINST CORE WHEN BAR IS REMOVED (CK SEVERAL TIMES)
 B/M CONTAINS PRT. MAGNET, INSTRUCTION, AND SHORTING
 BAR. P/N2495578 SUBED BY B/M2640788
 P/N2495586 SUBED BY B/M2640787

0207 ***** 0207 ***** 0207
 ** TROUBLE 5406 (SEE EC 137413)**
 TO INITIALLY INSTALL A STAGE 2 PRINT HEAD ON A STAGE 1 PRINTER

MACHINE TYPE	REFERENCE ECA NUMBER	FBM NUMBER
2222 MOD1 & 2	004	B/M2645461
MACHINE TYPE	ECA NUMBER	FBM NUMBER
5213 MOD1	011	B/M2645458
5213 MOD2 & 3	011	B/M2645459

 THE FIELD BILL OF MATERIAL SHOULD BE ORDERED PR CODE 33
 THE PRINT HEAD SHOULD BE ORDERED CODE 01
 REFER TO THE APPROPRIATE REFERENCE ECA FOR ADDITIONAL INFO.

0208 ***** 0208 ***** 0208
 ** TROUBLE ** 5406 **
 5213 P/N RIBBON DRIVE STAGE 1
 P/N2525765 PLATE ASM. RIBBON FEED --- SINGLE LOBE CAM ---
 P/N2629861 PLATE ASM. RIBBON FEED --- DOUBLE LOBE CAM ---
 FIELD BILL FOR DOUBLE LOBE CAM. B/M2645448 EC138173

0209 ***** 0209 ***** 0209
 ** TROUBLE ** 5406 **
 SYSTEM IN A HALT STATE WITH KEYBOARD READY ON WAITING FOR THE *
 OPERATOR TO CHANGE PACKS ON THE 5444. WHEN THE 5444 ON OFF
 SWITCH IS TURNED OFF THE KEYBOARD READY DROPS. AS SOON AS THE
 5444 BECOMES READY THE SYSTEM GIVES A KEYBOARD PARITY ERROR.
 ** CAUSE **
 NOISY ON OFF SWITCH FOR THE 5444 LOCATED ON THE OPERATOR CONSOLE

0210 ***** 0210 ***** 0210
 ** TROUBLE ** 5406 **
 KEYBOARD WON'T UNLOCK ON ALTER MODE. NO KEYBD RESTORE.
 ** PROBLEM ISOLATION AIDS **
 MDM 5406 7-207 BAIL MAGNET CONTROL LOGIC PK014

** CAUSE **
 IF SWITCHING TO ALTER MODE DOES NOT PRODUCE A RESTORE TO THE
 KEYBOARD. THE PROBLEM COULD COME FROM THE ENCODER BOARD ON THE
 LINE CALLED DROP BAIL PULSE (PK023) BEING MINUS.

0211 ***** 0211 ***** 0211
 ** TROUBLE **
 5406 CONSOLE KEYBOARD DROPPING READY. KEY SWITCH O
 BAIL CONTACT NOT MAKING.
 ** CAUSE **
 RESTORE BAIL STOPS OUT OF ADJUSTMENT KEEPING KEY
 SWITCH OPEN .

0212 ***** 0212 ***** 0212
 ** TROUBLE **
 5406 KEYBOARD WILL NOT READY.
 ** CAUSE **
 BAIL CONTACT EDS SWITCH BROKEN, REPLACE EDS OPERATING CONTACT.

0213 ***** 0213 ***** 0213
 ** TROUBLE ** 5406
 KEYBOARD LOCKED
 ** CAUSE **
 BAD CARD AT B1S4...OPEN LAND PATTERN G2B11 TO K2B11 +6 VOLTS

0214 ***** 0214 ***** 0214
 ** TROUBLE ** 5406
 KEYBOARD HAS SLOW RESPONSE. VARIES FROM 30 SECOND WAIT TO
 A SECOND OR TWO. SLOW TO KEYBOARD RESTORE.
 ** CAUSE **
 DEFECTIVE ATTACHMENT CARD, 01A B1M2.

0215 ***** 0215 ***** 0215
 ** TROUBLE ** 5406
 THE OPERATORS KEYBOARD ENTERS THE WRONG DATA I.E. A 7 ENTERS
 AS A J. DIAGNOSTIC RUNS WITHOUT FAILURES.
 ** PROBLEM ISOLATION AIDS **
 C.E. HANDBOOK KEYBOARD TEST PROGRAM WAS USED.
 ** CAUSE **
 THE RESTORE BAIL IN THE KEYBOARD WAS OUT OF ADJUSTMENT.

0216 ***** 0216 ***** 0216
 ** TROUBLE ** 5406 **
 TROUBLE - INFORMATION FROM THE KEYBOARD IS ENTERED TWICE
 WITH ONE DEPRESSION OF THE KEY.
 ** CAUSE **
 IF ALL ADJUSTMENT ARE OK INCLUDING BAIL, BAIL STOP,
 AND BALL COMPENSATOR TUBE - THEN MOVE ALL INTERPOSER
 RETURN SPRINGS TO THE REAR HOLE IN THE INTERPOSER.

0217 ***** 0217 ***** 0217
 ** TROUBLE ** 5406
 GRANTING INQUIRY REQUESTS. NO REQUEST CALLED FOR.
 ** PROBLEM ISOLATION AIDS **
 VISUAL INSPECTION.
 ** CAUSE **
 CHECK WIRING TO INQUIRY REQUEST SWITCH.

0218 ***** 0218 ***** 0218
 ** TROUBLE ** 5406 **
 PROC CHECK WHEN ANY KEYBOARD KEY IS DEPRESSED. MAP CALL OUT
 B1M2 BUT NO HELP. ALL OTHER DIAG RUN OK. KEYBOARD WONT READY
 IN ALTER STORE MODE. CK IS SAR HI I OP CY CLOCK 1 AND INT ON.
 ** CAUSE **
 BAD CARD AT 01A B2L2

0219 ***** 0219 ***** 0219
 ** TROUBLE ** 5406
 PROCESS CHECK, A/B REG ALU CPU DBO, FAILED SOLID
 WHEN CE MODE SELECTOR SWITCHED TO ALTER.CUSTOMER
 HAD CPU LOOP AFTER IPL WAITING FOR KEYBOARD DATE ENTRY.
 ** PROBLEM ISOLATION AIDS **
 MAPS MAIN ENTRY DID NOT FIND.
 GO TO KEYBOARD MAP ENTRY
 ** CAUSE **
 2 KEYS IN KEYBOARD LOCKED DOWN

0220 ***** 0220 ***** 0220
 ** TROUBLE ** 5406 5213
 INTERMITTENTLY PRINTER BACKSPACES TO POSITION 1 AND THE CPU
 WOULD HANG IN A LOOP.
 IT WAS FOUND USING THE BACKSPACE KEY ON A ERROR CORRECTION THE
 PRINTER WOULD BACKSPACE TO POSITION 1 & THE CPU HUNG.
 ** CAUSE **
 01A B1M2

0221 ***** 0221 ***** 0221
 ** TROUBLE ** 5406
 DIAGNOSTIC I21 FAILS INDICATING A FALSE INTERRUPT. KEYBOARD
 COMES READY OK BUT WHEN THE FIRST KEY IS DEPRESSED GOT A FF5
 HALT. MAPS INDICATE THERE WAS A FALSE INTERRUPT AND CALLED
 OUT 01A B1L2 AND B1M2 AS BEING DEFECTIVE. CE COULD GET THROUGH
 TEST BY HITTING THE START KEY AFTER EACH KEY DEPRESSION.
 ** CAUSE **
 01A B2R2

0222 ***** 0222 ***** 0222
 ** TROUBLE ** 2265
 TROUBLE**** WHEN FIRST POWER UP CHARACTERS ARE SMALL
 AND AS SYSTEM WARMS UP WILL RIPPLE OUT TO
 NORMAL SIZE
 ** CAUSE **
 01A J2 IN CRT BOARD

0223 ***** 0223 ***** 0223
 ** TROUBLE ** 5406-129
 COL 1 DOUBLE PUNCHES REST OF CARD OK COL 81 HAS OK PUNCH
 ** CAUSE **
 01A A1H4

0224 ***** 0224 ***** 0224
 ** TROUBLE ** 5496
 INCORRECT INFORMATION IN 5406 CORE ..MISSING DATA OR WRONG
 DATA OR INVALID DATA
 ** CAUSE **
 5496 PICK ROLL DURATION TOO LONG CAUSING TWO CARDS TO FEED
 ONE BEHIND THE OTHER TO THE REGISTRATION GATE..NO ERRORS
 DETECTED

0225 ***** 0225 ***** 0225
 ** TROUBLE ** 5406 **
 COMPARE ERRORS WHEN READING FROM 5496.
 ** CAUSE **
 C-C1 CONNECTOR IN 5496 D06 AND D07 PINS SHORTED IN
 CONNECTOR

0226 ***** 0226 ***** 0226

** TROUBLE ** 5406
 READ PROBLEM, READ BLANKS IN CORE FROM DATA RECORDER
 4A IN CORE. SHOULD BE 40. MAPS NO HELP ON F807 HALTS.0:
 ** PROBLEM ISOLATION AIDS **
 PUNCH OK TO 0129 OR 5496 CHECK READ.
 ** CAUSE **
 01A B1J2

0227 ***** 0227 ***** 0227 *****

** TROUBLE ** 5406 KEYBOARD **
 5406 KDE FAILURE.I/O LIGHT ON PROCESS CHECK NO ROLLER 8
 ** CAUSE **
 01A B1J2

0228 ***** 0228 ***** 0228 *****

**TROUBLE **
 PROCESS CHECKS ONLY WHEN WORKING
 WITH 5496 ON 5406.
 ** CAUSE **
 REPLACED CONDUIT GROUND WITH AN APPROVED
 TYPE DIRECT GROUND.

0229 ***** 0229 ***** 0229 *****

** TROUBLE **
 5406 DBI CHECKS WITH 0129 OR 129 ATTACHMENT. THE DATA RECORDER
 WAS NOT BEING USED AT THE FAILURE TIME. THE DATA RECORDER LIGHT
 WOULD COME ON AND THE KEYBOARD LIGHT WOULD TURN ON.
 ** CAUSE **
 01A B1F5

0230 ***** 0230 ***** 0230 *****

** TROUBLE ** 5406 5496
 PROCESS CHECK A/B REG AND DBI CYCLE STEAL ASSIGNMENT IS 48
 CALLING FOR DATA RECORDER EVEN WHEN NOT BEING USED..
 CLOCK TIME 1 AND I/O CYCLE
 ** CAUSE **
 01A B1R2

0231 ***** 0231 ***** 0231 *****

** TROUBLE ** 5406
 DBI PROC CHECK WITH 5496 ON LINE
 ** CAUSE **
 BAD CARD 01A B1H2

0232 ***** 0232 ***** 0232 *****

** TROUBLE **
 0129 5406 ON LINE FEATURE NORMAL HALTS
 8A HALT IN COLUMN INDICATOR IS A TRANSPORT JAM.
 88 HALT IN COLUMN INDICATOR IS HOPPER JAM, HOPPER EMPTY, OR
 STACKER FULL
 TURNING ON POWER SWITCH WHEN 129 IS ON-LINE CAUSES NORMAL 8A
 HALT --- TO RESET HIT FEED KEY TWICE THEN VERIFY RESET KEY

0233 ***** 0233 ***** 0233 *****

** TROUBLE **
 THE CUSTOMER AFTER DOING A 5496 ON LINE JOB TRIES TO USE
 THE 5496 FOR AN OFF LINE JOB. THEY HAVE PROBLEM OF LOSING
 PROGRAM LEVELS
 ** CAUSE **
 THE CUSTOMER HAS LEFT THE ON LINE OFF LINE SWITCH IN THE
 ON LINE MODE AND THE IPL FOR THE SYSTEM DOES A SYSTEM RESET.

0234 ***** 0234 ***** 0234 *****

** TROUBLE ** 5406 **
 F801 HALT WHEN RUNNING TESTS ON 5496
 ** CAUSE **
 TURN AUTO RELEASE SWITCH ON

0235 ***** 0235 ***** 0235 *****

** TROUBLE **
 5406 5444 INVALID ADDRESS PROCESS CHECK ON DISK CE IPL AT
 ABC123 HALT. CUSTOMER GETS 1245 HALTS ON IPL. APLD GIVES
 HALT ON A0A A0B A0C. INVALID OP WITH I/O OVERLAP OFF
 ** CAUSE **
 BAD ALU CARD 01A B2M2 FOUND BY MASS SWAPPING

0236 ***** 0236 ***** 0236 *****

** TROUBLE ** 5406 **
 AFTER HALT ABCD12345 NEXT HALT WAS 3. SAR WAS 0045.
 THE APLD WOULD NOT LOAD. INVALID OP PROCESS CHECK ON
 CUSTOMER JOBS
 CAUSE 01A A1M2
 01A B2M2

0237 ***** 0237 ***** 0237 *****

** TROUBLE ** 5406
 TAPE READING ERROR F55 CASSETTE.
 ** CAUSE **
 ADAPTER CABLE RING AND TIP REVERSED. TRY DIFFERENT CABLE.
 NOTE...DO NOT RUN CASSETTE WITH BATTERIES.

0238 ***** 0238 ***** 0238 *****

** TROUBLE ** 5406
 HANGUP WITH IOP IQ IR CYCLES. ON DIAGNOSTICS FROM DISK PACK
 GET HALT ABC123. AFTER RESET, CANNOT GET ADCD12345. INSTEAD
 GOES INTO BUSY LOOP.
 ** PROBLEM ISOLATION AIDS **
 TRY APLD. IN THIS INSTANCE, DCP AND SECTION WOULD LOAD OK.
 MACHINE WOULD THEN HANG TRYING TO EXECUTE. MAPS WOULD LEAD TO
 TIO AND SIO CHART, PAGE 165, BLOCK E3. DID NOT FIX.
 ** CAUSE **
 DEFECTIVE FILE ATTACHMENT CARD, 01A A1T2 (Z-W3T2).
 THIS CARD CONTAINS 5444 INITIAL SELECTION CIRCUITRY.

0239 ***** 0239 ***** 0239 *****

** TROUBLE ** 5406 **
 CUSTOMER CANNOT INITIALIZE. FAILS CE DIAGNOSTICS, A01-ROUT.1
 ERROR 150900 (WRITE ID FAILURE). MAY SHOW ON A09, WRITE ID
 AND SELECT TEST, AS EQUIPMENT CHECK- FAILURE IN BIT RING.
 ** CAUSE **
 FILE ATTACHMENT CARD, 01A W3N2. COMPARE SCAN ORIENTATION AND
 ERROR CHECKING.

0240 ***** 0240 ***** 0240 *****

** TROUBLE ** 5406 **
 HALT 03 ON IPL.....
 IPL HALT LIGHT SEQUENCE---ABC123 THEN ABCD12345 THEN
 HALT 03 INSTEAD OF A5.
 ** CAUSE **
 CARD AT 01A A1L2.

0241 ***** 0241 ***** 0241 *****

** TROUBLE **
 5406 WONT IPL FROM 5444 OR CASSETTE TAPE DBI AND A/B
 PROCESS CHECKS
 ** CAUSE **

BAD CARD 01A-A1E2

0242 ***** 0242 ***** 0242 *****

** TROUBLE **5410 5406
 CANNOT IPL FROM FILE OR APLD. CPU GOES INTO LOOP.
 ** CAUSE **
 DEFECTIVE FILE ATTACHMENT CARD, 01A A1K2 (Z-W3K2).
 CYCLE CONTROL RING AND CONTROL COUNTER.
 5410 01A A2K2

0243 ***** 0243 ***** 0243 *****

** TROUBLE **
 5406 WILL NOT IPL, SOMETIMES A C1234 HALT.
 SOMETIMES GET A C1234 HALT.
 ** CAUSE **
 THE CARD AT A1D4. AFTER THIS CARD IS REPLACED THE DATA
 SEPARATOR MUST BE ADJUSTED.

0244 ***** 0244 ***** 0244 *****

** TROUBLE ** 5406 **
 WONT IPL FROM 5444 ALL INDICATORS SHOW A SYSTEM RESET
 CONDITION
 ** CAUSE **
 01A A1D4

0245 ***** 0245 ***** 0245 *****

** TROUBLE ** 5406
 IPL CUSTOMER JOB GIVES INVALID ADDRESS. MANUAL ROUTINES ALTER
 SAR TO FFFF FAIL (B REG NOT FF) MAP CALL OUT B2F2 B2P2 B2N2.
 ** PROBLEM ISOLATION AIDS **
 CHECK TO SEE IF ALU IS COMPLEMENT ALL DATA
 ** CAUSE **
 A2H2 ALU CONTROL 01A A2H2

0246 ***** 0246 ***** 0246 *****

** 5406 **
 TROUBLE..HALT 123 ON IPL.
 ** CAUSE **
 . BAD CARD 01A B2J2.

0247 ***** 0247 ***** 0247 *****

** TROUBLE **
 5406 IPL PROBLEMS.INVALID OP,INVALID Q,INVALID ADDRESS
 DIAG.A03 FAILING INDICATION NO DATA TRANSFER,WRONG HEAD
 SELECTION, WRONG READ ID
 ** CAUSE **
 FAILING CARD 01A-A1E4 DATA SEPARATOR

0248 ***** 0248 ***** 0248 *****

** TROUBLE ** 5406
 * TROUBLE..CE PACK FAILURES..PROCESS CHECKS ON IPL..
 INVALID OP..WILL WORK FROM CE PANEL.
 ** CAUSE **
 DEFECTIVE SYSTEM START SWITCH

0249 ***** 0249 ***** 0249 *****

** TROUBLE **
 5406 CANNOT IPL APLD LOADS DCP OK A01 FAILS UNABLE TO GET
 TO FILE
 ** CAUSE **
 01A A1R2

0250 ***** 0250 ***** 0250 *****

TROUBLE MISC PROBLEMS. WILL NOT IPL. CCR ERRORS
 5444 WILL NOT INITIALIZE - READ ERRORS
 ** CAUSE **
 01A A1L2

0251 ***** 0251 ***** 0251 *****

** TROUBLE ** 5406 **
 WILL NOT IPL FROM 5444. TAPE WILL NOT WORK ALSO.
 ** CAUSE **
 01A A1N2 IN 5406 DEFECTIVE.

0252 ***** 0252 ***** 0252 *****

** TROUBLE **
 5406 CANNOT IPL, CE HALT 3, INVALID OP
 ** CAUSE **
 DEFECTIVE CHANNEL IN CARD, 01A B1J2. THIS IS A TRANSLATOR CARD
 AND CAN GENERATE BAD DATA IN CORE WITH GOOD PARITY. REF KE101.

0253 ***** 0253 ***** 0253 *****

** TROUBLE **
 5406 HALT 3 ON IPL FROM DIAGNOSTIC PACK
 ** CAUSE **
 BAD CARD 01A A1J2

0254 ***** 0254 ***** 0254 *****

** TROUBLE **
 5444 WONT INITIALIZE WITH FF5 DIAGNOSTIC OR WITH CUSTOMER PROG.
 ASSIGNS TOO MANY ALTERNATE TRACKS.
 ** CAUSE **
 SPINDLE GROUND NOT MAKING CONNECTION. ALL DIAGNOSTIC PROGRAMS
 RUN OK,

0255 ***** 0255 ***** 0255 *****

** TROUBLE **
 5406 HANGS IN LOOP CLOCK RUNS IN INSTRUCTION STEP FAILS TO
 DO SEEK REQUIRED BY CPU AND MEMORY DIAG HALTS 3F FROM CASSETTE
 CPU LOOPS ON A01 DIAG
 ** CAUSE **
 01A A1G2

0256 ***** 0256 ***** 0256 *****

** TROUBLE ** 5406 **
 5444 HALT A01 ERROR MESSAGE ERR1-101001 ERR2-111101 ERR3
 121101 ERR4- 131003 NOT LISTED IN ERROR PRINT OUT.
 ** CAUSE **
 CARD LOCATION 01A A1K2

0257 ***** 0257 ***** 0257 *****

** TROUBLE **
 5406 5444 AFTER HALT ABCD12345 GETS HALT 03 (3)
 ** PROBLEM ISOLATION AIDS **
 CAN LOAD FROM CASSETTE.A01 WILL NOT RUN GETS ERROR 105205 NOT IN
 ERROR TABLE
 ** CAUSE **
 01A A1R2

0258 ***** 0258 ***** 0258 *****

** TROUBLE ** 5406 5410 5444
 FILE DIAGNOSTIC A05 ROUTINE 01 ERROR MESSAGE A011. MAPS DO
 NOT FIND.
 ** CAUSE **
 5406...01A A1L2

```

5410...01A A2L2
0259 ***** 0259 ***** 0259
** TROUBLE ** 5406
A03 FAILURES ON RTN 3..ERROR SAYS (TIMEOUT) A08E HALT..
A123 IN LIGHTS..ALL OTHER DIAGS OK.
** CAUSE **
01A AIM2 REPLACED.
0260 ***** 0260 ***** 0260
** TROUBLE **
5406 IPL DIAGNOSTIC STOP WITH ABC123 HALT THEN ABCD12345 HALT
NEXT HALT 3 WITH SAR AT 0045
** CAUSE **
CARD LOCATION 01A ALT2
0261 ***** 0261 ***** 0261
** TROUBLE ** 5406
AFTER HALT ABCD12345 NEXT HALT WAS 3. SAR WAS 0045 OR 0119
ON IPL
** CAUSE **
MST AT 01A AIN2
0262 ***** 0262 ***** 0262
** TROUBLE **
5406 5444 DIAGNOSTIC A06 GIVES PRINTED HALT A03C HALT
** CAUSE **
BAD CARD 01A W3P2 (A1P2)
0263 ***** 0263 ***** 0263
** TROUBLE ** 5406-5444 **
CUSTOMER GETS OL HALT ON COMPILE DURING WRITE OP.
DIAGNOSTIC A05 A06 A0A AND A0B FAIL ON WRITE OPERATIONS. ERAP
SHOWS WRITE DATA CHECKS AND DATA CHECK ID. A0A PRINT OUT SHOWS
NO RECORD FOUND DATA CHECK AND TRACK CONDITION CHECK.
HALT 12 ON DIAG. A05, HALT 52 ON DIAG. A0A
** CAUSE **
Y W1K6 IN 5444 DRIVE
0264 ***** 0264 ***** 0264
** TROUBLE ** 5444 **
FUSE 1 BLOWS INTERMITTENTLY
CAUSE* THE CABLE THAT GOES TO THE 5424 BLOWER HOUSING
WORE THROUGH THE INSULATION AT THE LOCATION OF
CF8 & CF9. IN THE BASE OF THE 5424.
0265 ***** 0265 ***** 0265
** TROUBLE ** 5444
BLOWING FUSE 1 ON FIRST CARRIAGE MOVEMENT. CAN FAIL ON INITIAL
HEAD LOAD SEEK, STEPPER MOTOR DRIVE.
** PROBLEM ISOLATION AIDS **
TURN LEADSCREW, CHECK FOR BINDS. CHECK EMITTER DISC PHOTOCCELL
AND LAMP ASSEMBLY. ALL THREE LAMPS LIT. ANY SCRATCHES ON ON
EMITTER DISC.
** CAUSE **
DEFECTIVE FEEDBACK LAMP, NOT LIT. DID NOT ADVANCE THE J AND K
LATCHES, CREATING TORQUE PROBLEM, MORE CURRENT BEING DRAWN BY
THE STEPPER MOTOR.
IF LAMPS ARE GOOD, SPIN THE EMITTER WHEEL. CHECK THE FEEDBACK
OUTPUT ON THE Y-W1B6 CARD. THIS CARD BAD COULD ALSO CAUSE
THE PROBLEM.
0266 ***** 0266 ***** 0266
** TROUBLE ** 5444 **
STEPPER DRIVE BLOWS F1 INTERMITTENTLY.
** PROBLEM ISOLATION AIDS **
RUN THE BOB PROGRAM TO MAKE SURE MOTOR ADJ OK
CHECK ENCODER DISK FOR PAINT CHIP OR SCRATCHES
NOTE CHECK CLEARANCE WHERE DISK PASSES BETWEEN CASTING.
CHECK J3 CONNECTOR FOR BAD CONNECTIONS
CHECK CARRIAGE ROLLER P/N2537468 ON THE LEAD SCREW
NOTE THE CLIP THAT HOLDS THE ROLLER IN THE CENTER
OF THE SHAFT CAN COME OFF ALLOWING THE ROLLER
TO WALK ON THE SHAFT BINDING ON THE BASE CASTING
** CAUSE **
IF THE ABOVE IS CORRECT BE SURE A 3 AMP SLOW BLOW FUSE
P/N0338165 HAS BEEN INSTALLED AS PER 5444 RETAIN TIP 093.
0267 ***** 0267 ***** 0267
*** 5444 STEPPER DRIVE BLOWING FUSE 1. **
** TROUBLE **
1 BLINKING OPEN LIGHT, FUSE 1 BLOWS.
** CAUSE **
LOOSE WIRE J3 PLUG WIRE 4. THIS ALSO CAUSED K2-2 N/O TO
BURN.
** TROUBLE **
** CAUSE **
BINDING ROLLER ON WORM SHAFT DUE TO MISSING CLIP THAT
HOLDS ROLLER IN THE CENTER OF THE SHAFT.
** TROUBLE **
3 BLOWS FUSE 1.
** CAUSE **
Q8 SHORTED. SEE 5444 SAA24, PEDESTAL DRIVER CHECKOUT.
** TROUBLE **
4 BLOWS FUSE 1 ON POWER UP.
** CAUSE **
Y-W1A6, W1A6, A6
** TROUBLE **
5 ON POWER UP, HEADS WONT LOAD. CARRIAGE MOVES FORWARD 1 CYL
AND STOPS. FUSE 1 BLOWS INTERMITTENTLY.
** CAUSE **
Y-W1B6, W1B6, B6
** TROUBLE **
6 BLOWS FUSE 1. STEPPER MOTOR ENCODER LAMPS MAY APPEAR DIM.
** CAUSE **
THE SCREWS THAT CONNECT WIRES TO LAMP ASM. ARE PLASTIC AND
MAY COME LOOSE RESULTING IN POOR CONNECTION.
** TROUBLE **
7 BLOWS FUSE 1 INTERMITTENTLY.
** CAUSE **
X GATE CARD.
** TROUBLE **
8 BLOWS FUSE ONE. CONTINUOUS BRUSH CYCLES.
** CAUSE **
REPLACED ENCODER PHOTOCCELL ASM. NO FEEDBACK PULSES.
** TROUBLE **
9 BLANK 1 HALTS, BLOWS FUSE 1, STEPPER MOTOR NOISY.
** CAUSE **
CLEANED ENCODER DISK AS PER FETMM.
** TROUBLE **
10 HIGH SPEED STEPPER BLOWS FUSE 1 INTERMITTENTLY.
** CAUSE **
INSTALL 3 AMP SLOW BLOW FUSE P/N0338165 AS PER 5444
RETAIN TIP 093.
0268 ***** 0268 ***** 0268
** TROUBLE ** 5444
STEPPER DRIVE BLOWS FUSE ONE, CUSTOMER GETS OC AND HE HALT.
** CAUSE **
CABLE FROM Y1N7 TO ENCODER BOARD WAS BEING CUT BY SPINDLE
PULLEY.
0269 ***** 0269 ***** 0269
** TROUBLE ** 5444
STEPPER DRIVE BLOWS FUSE ONE, CUSTOMER GETS OC AND HE HALT.
** CAUSE **
CABLE FROM Y1N7 TO ENCODER BOARD WAS BEING CUT BY SPINDLE
PULLEY.
** TROUBLE ** 5444
OC HALT ON IPL. DIAGNOSTICS WORK CORRECTLY.
TWO DIFFERENT PID PACKS FAILED. ARR AT 02E1
** CAUSE **
CARD AT 01A-A2S2, W3S2
** TROUBLE ** 5444
BLOWS FUSE F1 ON A03 RTN 05. THE CUSTOMER
HAD NOT BLOWN ANY FUSES.
** CAUSE **
DIRTY ENCODE DISC. THE ENCODER BOARD WAS VERY DIRTY. CLEANED
DISC AND MADE ALL STEPPER MOTOR CONTROL ADJUSTMENTS.
0270 ***** 0270 ***** 0270
** TROUBLE ** 5444 **
CONTINUOUS BRUSH CYCLES (CARRIAGE RETRACTED HAS NOT TRANSFERRED)
MAY OR MAY NOT BLOW FUSE 1. ACCESS MAY GO OUT TO CRASH STOP
OFF LEADSCREW, BUT MOST TIME REMAINS AT CARRIAGE RETRACTED.
** PROBLEM ISOLATION AIDS **
SERVICE CHECK Y-W1B6 OUTPUTS- FEEDBACK, TRACK CROSSING, ETC.
OR REPLACE CARD. SWAP Y-W1D6, SWAP X GATE CARD. STATIC CHECK
OF STEPPER DRIVE TRANSISTORS, SERVICE AID 24.
** CAUSE **
DEFECTIVE STEPPER MOTOR. REPLACED MOTOR-ENCODER ASSEMBLY.
TURNED OUT TO BE MOTOR ASSEMBLY, EVEN THOUGH STATIC TESTS
THROUGH WINDINGS WERE OKAY.
0271 ***** 0271 ***** 0271
** TROUBLE **
NO OPEN LIGHT ON 5444. Q2 BLOWN, C7 SHORTED. REPLACE COMPONENTS,
BLOWS AGAIN.
** CAUSE **
DEFECTIVE LOGIC CARD IN THE CPU, 5444 ATTACHMENT, 01A A2E4.
0272 ***** 0272 ***** 0272
** TROUBLE ** 5444
WHEN A POWER FAILURE HAPPENS DATA ON DISK PACK GET DESTROYED
(DESTROY) (WIPE OUT). COULD BE ANY TRACK AND CYLINDER. PROBLEM
SHOWS ON ANY TYPE OF DISK OPERATION, EITHER A READ OP (RD OP)
OR A WRITE OP (WR OP).
** PROBLEM ISOLATION AIDS **
POWER DOWN THE 5410 WITH WALL BREAKER (CB) TO SIMULATE FAILURE
PROBLEM WOULD NOT OCCUR ON A NORMAL POWER DOWN. USING A SCOPE
CHECK THE AXE CARD IN THE 5410. USING THE MLM AS A GUIDE CHECK THE
WRITE SELECT CIRCUITRY
** CAUSE **
REPLACE CARD 01Y W1H6 P/N5860178 THIS CARD IS THE WRITE
SELECT AND SAFETY CARD
0273 ***** 0273 ***** 0273
** TROUBLE ** 5444
5444 EQUIPMENT CHECK AFTER INPUT POWER FAILURE.CAN NOT
READ FROM CYLINDER WHERE HEADS WERE AT TIME OF POWER LOSS
** CAUSE **
5410 01A A2C4 5406 01A A1C4
0274 ***** 0274 ***** 0274
TROUBLE - THE 5406 OR SYSTEM WOULD POWER DOWN WHEN TURNING
DRIVE TO OFF POSITION.
**CAUSE** - THE COARSE HOME FLAG WAS SHORTING THE PHOTO TRANSIST
OR / GROUNDING THE MINUS 4 VOLT SUPPLY / WHEN RETRACTING HEADS.
0275 ***** 0275 ***** 0275
** TROUBLE ** 5444 **
ON A POWER OFF WITH STEPPER DRIVE THE HEADS
EXTEND PAST OVERRUN.
** CAUSE **
Y1A6 DEFECTIVE
0276 ***** 0276 ***** 0276
** TROUBLE ** 5444 **
DROPS READY,HEADS UNLOAD AND EQUIPMENT CHECK.
** CAUSE **
5444 ATTACHMENT CARD 01A A2D2 IN 5410
5406 01A A1D2
0277 ***** 0277 ***** 0277
** TROUBLE ** 5444
INTERMITTENT OC HALTS AND EQUIPMENT CHECKS
DIAG BOB SPINDLE 0 TRACK CROSSING ERROR
** PROBLEM ISOLATION AIDS **
CRANK STEPPER MOTOR HAND CHECK FOR BINDS
** CAUSE **
REPLACED STEPPER MOTOR
0278 ***** 0278 ***** 0278
** TROUBLE ** 5444
DROPS READY OR OC HALT DUE TO UNSAFE CONDITION.
** CAUSE **
Y-W1K6
Y-W1J6
Y-W1A6
0279 ***** 0279 ***** 0279
** 5444 UNSAFE PROBLEMS**
** TROUBLE **
1 5444 A03 ERROR 01 ( ID ERROR OR HEAD SELECT ERROR ). HALT
OC, OC . ERROR 17 ON A05 ( ERROR ON WRITE COMMAND, WRITE
UNSAFE AND ERASE UNSAFE ).
** CAUSE **
DEFECTIVE FLAT CABLE FROM Z GATE W1B2 TO Y GATE W1L6.
** TROUBLE **
2 FAIL TO IPL WHEN 5444 FIRST TURNED ON. LOST READY DUE TO
WRITE UNSAFE AND ERASE UNSAFE. MACHINE WORK OK AFTER IT
WARMED UP.
** CAUSE **
Y W1J6
** TROUBLE **
3 INTERMITTENT OC HALTS. ERAP LISTS MISSING ADDRESS MARKS
AND DATA CHECKS.
U ** CAUSE **
READ WRITE HEAD
0280 ***** 0280 ***** 0280
** TROUBLE ** 5444 **
INTERMITTENT DROPS READY..WRITE UNSAFE EQUIPMENT CHECK.
** CAUSE **
DEFECTIVE READ/WRITE HEAD.
0281 ***** 0281 ***** 0281
** TROUBLE ** 5410 5444
HE HALT...DIAGNOSTIC A06 GIVES HALT 22 MAPS TO 3 CARDS..NO
HELP
** CAUSE **
BAD OSC CARD W3P2
5406 01A A1P2 5410 01A A2P2
0282 ***** 0282 ***** 0282
5444
** TROUBLE **
OC HALT ON IPL. DIAGNOSTICS WORK CORRECTLY.
TWO DIFFERENT PID PACKS FAILED. ARR AT 02E1
** CAUSE **
CARD AT 01A-A2S2, W3S2

```


0283 ***** 0283 ***** 0283

** TROUBLE ** 5410 **
DC HALT CUSTOMER JOB. OVERLAYING CUSTOMER DATA AND OR PROGRAM WITH ZEROS.
** PROBLEM ISOLATION AIDS **
SCOPE INDEX TRANSDUCERS USING FEMM AS GUIDE. LOOK CLOSE AT THE NEGATIVE PORTION OF THE SIGNAL. LOOK BETWEEN INDEXES ON CUSTOMER PACKS FOR NICKS THAT CAN BE PICKED UP BY INDEX.
** CAUSE **
INDEX TRANSDUCER SET TOO CLOSE FOR FRICTION DRIVES USE TIP 038 FOR INDEX PULSE VOLTAGE. USE TIP086 FOR CIRCUMFERENTIAL TIMING. FOR STEPPER DRIVES USE FETMM SY33-0029-2 PAGE 3-19 FOR VOLTAGE LEVELS AND PAGE 3-20 FOR TIMING.

0284 ***** 0284 ***** 0284

5444 HE HALTS
** TROUBLE **
1 HE HALTS ON 5410.
** CAUSE **
CARRIAGE FLAG OUT OF ADJUSTMENT.
** TROUBLE **
2 HE HALTS
** CAUSE **
LOW OUTPUT FROM ENCODER DISK ON STEPPER DRIVE. OUTPUT VOLTAGE SHOULD SHIFT FROM GROUND TO MINUS .8 VOLTS MINIMUM.
** TROUBLE **
3 HE HALTS INDICATING PERMANENT DISK ERROR ON F1. SECOND TRY WORKS OK. ALL DIAGNOSTICS RUN. NO ERRORS IN ERAP. CE HAS CLEANED HEADS AND ADJUSTED DATA SEPARATOR. F1 HAS BEEN REINITIALIZED TWICE BUT STILL FAILS.
** CAUSE **
READ PREAMP CARD IN Z GATE. Z-W1A1
** TROUBLE **
4 HE HALTS WITH A SECONDARY HALT OF 3 IN THE RIGHT CHARACTER OF THE DISPLAY, INDICATING ERROR ON CYLINDER 0. ALL SECTORS READ WITHOUT ERROR ON SINGLE SECTOR READ OPERATIONS. MULTIPLE SECTOR READ OPERATIONS FAIL WITH MISSING ADDRESS MARKS WHEN THE DEFECTIVE SECTOR IS INCLUDED IN THE GROUP OF SECTORS TO BE READ. THIS PROBLEM MOST LIKELY TO OCCUR ON SYSTEMS WITH 5445'S INSTALLED WHEN 5444 IS USED TO LOAD IN PROGRAMS AND THE ONLY WRITING ON THE 5444 IS TO UPDATE THE VOLUME TABLE OF CONTENTS (VTOC).
** CAUSE **
THE PACK HAD BEEN INITIALIZED WITH THE DRIVE BELT RIDING ON THE FLANGE OF THE SPINDLE PULLEY. THIS CAUSES THE SPINDLE TO TURN SLOWER (APPROX 42 M.S.) THAN NORMAL (40 M.S.) WHICH CROWDS THE DATA CLOSER TOGETHER ON THE PACK. IF THE BELT IS LOCATED PROPERLY ON THE SPINDLE AND A SECTOR IS REWRITTEN, ITS DATA FIELD OVERFLOWS INTO THE POST DATA GAP SO ON MULTIPLE SECTOR READ OPS THE SMALL GAP BETWEEN SECTORS DOES NOT ALLOW ENOUGH TIME FOR THE FCU TO DO ITS HOUSEKEEPING AND GET BACK TO THE 5444 IN TIME TO DETECT THE ADDRESS MARKS OF THE FOLLOWING SECTOR. OTHER PACKS IN THE CUSTOMERS LIBRARY SHOULD BE CHECKED TO BE SURE THEY ARE WRITTEN AT THE CORRECT SPEED. PACKS THAT ARE WRONG HAVE TO BE REINITIALIZED. ECA034 FOR FRICTION DRIVES OR ECA314 FOR STEPPER DRIVES SHOULD BE INSTALLED.

0285 ***** 0285 ***** 0285

** TROUBLE ** 5444
DC HALTS ON IPL
** PROBLEM ISOLATION AIDS **
DIAGNOSTIC A03 SHOWS A ERASE UNSAFE ERROR + AND - 18 VOLTS MEASURED HIGH APPROX 24 VOLTS
** CAUSE **
Y1F6 IN 5444

0286 ***** 0286 ***** 0286

** TROUBLE ** 5444
DC HALT ON CUSTOMER JOBS. DIAGNOSTICS RUN
** PROBLEM ISOLATION AIDS **
RAN FRIEND 0 TO 203
** CAUSE **
0 READ-WRITE HEAD BAD.

0287 ***** 0287 ***** 0287

** TROUBLE **
5444 GIVES HE HALT. MOTOR, ENCODER AND ALL CARDS HAVE BEEN CHANGED. SAA 024 SHOWS NOISE ON Q8 TRANSISTOR.
** PROBLEM ISOLATION AIDS **
SCOPE AT LOGIC ZA230 Q8 RUN EMITTER LINE FOR NOISE.
** CAUSE **
LOGIC PAGE FS420 LINE CALLED DRIVER + 24 VOLTS. BAD SOCKET CONNECTION AT X GATE CARD B13 PIN. SOCKET P/N2538110

0288 ***** 0288 ***** 0288

** TROUBLE ** 5444
GOES TO TRACK ZERO, UNLOADS HEADS, DROPS READY WITH OC HALT. DIAGS OK...FAILS ON CUSTOMER JOBS ONLY.
** CAUSE **
Y GATE CARD J6 01Y YW1J6

0289 ***** 0289 ***** 0289

TROUBLE ...5444 DROPS READY ON IPL.
** CAUSE **
READ OSCILLATOR CARD NO GOOD 01A W3D2

0290 ***** 0290 ***** 0290

** TROUBLE ** 5410 5444
DRIVE DROPS READY WITH WRITE AND ERASE UNSAFE. FILE Y-GATE AND Z-GATE CARDS HAVE BEEN SWAPPED OUT, STILL FAILS SAME DRIVE.
PROBLEM ISOLATION AIDS
SWAP FILE ATTACHMENT CARDS, Z-W3G2 AND Z-W3F2.
** CAUSE **
Z-W3G2 FOR DRIVE OR SPIN 0. Z-W3F2 FOR DRIVE OR SPIN 1.

0291 ***** 0291 ***** 0291

TROUBLE - 5444 DROPS READY. FAILURE RATE ONE OR TWO TIMES A DAY. SWAPPED CARDS FROM DRIVE 1 TO DRIVE 2. TROUBLE FOLLOWED CARDS. CE REPLACED ALL CARDS. TROUBLE STILL ON MACHINE. (SELECT UNSAFE CAUSED BY STEPPER NOT SETTling DOWN BY THE TIME THE NEXT COMMAND WAS ISSUED)
CAUSE COMPLETE STEPPER SINGLE SHOT ADJ USING 5444 SAA023 .

0292 ***** 0292 ***** 0292

** TROUBLE ** 5444 **
1. READY LIGHT BLINKS OFF AND ON WITH APPARENTLY NO EFFECTS ON PROCESSING. SUSPECT THIS HAPPENED ON DRIVE 2 BECAUSE DATA SEPARATOR IN FCU GETS +18 AND -18 VOLTS FROM TOP DRIVE. -18 WAS -12 VOLTS.
** CAUSE **
Y-W1F6 W1F6 F6
** TROUBLE **
2. 5444 WILL NOT READY. OPEN LIGHT GOES ON AND OFF. LOSING INDEX PULSES.
** CAUSE ** F6
** TROUBLE **

3. 5444 DROPS READY RIGHT AFTER GETTING READY IF PROGRAM LOAD HALT 0A 0A.
** CAUSE **
Y-W1F6

0293 ***** 0293 ***** 0293

** TROUBLE ** 5444
CUSTOMER JOB DROP READY AND DATA CHECKS. DIAGNOSTIC MAY OR MAY NOT FAIL.
** CAUSE **
CAPACITOR C5 ON Y GATE 6 VOLT FEED THRU DEFECTIVE. P/N2192509

0294 ***** 0294 ***** 0294

** TROUBLE **
5444 A01 HALT88 DISK NOT READY OR SOLID ERROR. HIGH SPEED STEPPER
** PROBLEM ISOLATION AIDS **
HEAD WILL NOT ALWAYS DRIVE FORWARD TO LOAD HEADS. IF HEADS DO LOAD WILL DROP READY IO COMMAND ISSUED.
** CAUSE **
DEFECTIVE CARD 01A A2F2 OR A2G2

0295 ***** 0295 ***** 0295

** TROUBLE **
5410 SDR CHECKS WITH 5444 DROPPING READY.
** PROBLEM ISOLATION AIDS **
CHECK -18V IN 5444 AND -30V IN 5410. THE -18V IN 5444 CAN DRAG THE -30V IN THE 5410 DOWN ENOUGH TO CAUSE THIS PROBLEM
** CAUSE **
Y-W1F6 Q2 ON THE 5444 Y GATE OR -30V REGULATOR IN 5410

0296 ***** 0296 ***** 0296

** TROUBLE ** 5444
DRIVE DROPS READY OR FAILS TO READY
** PROBLEM ISOLATION AIDS **
K6 DROPS AND OR FAN ON 5424 BLOWER GATE INOPERATIVE
** CAUSE **
CF8 OR CF9 IN BLOWER GATE LOOSE

0297 ***** 0297 ***** 0297

** TROUBLE ** 5444
FAILS ON A RECAL OPERATION...ALSO ON SINGLE TRACK SEEK REVERSE* FROM TRACK 0, WILL NOT FAIL ON REVERSE 50 FROM 0...DIAGS ALSO FAIL ON RECAL...THIS CAN BE SOLID OR INTERMITTENT.
** CAUSE **
D6 CARD IN Y GATE ALSO FOR 5022 ON S/7

0298 ***** 0298 ***** 0298

** TROUBLE ** 5406 **
5444 DROPS READY ON BOTH DRIVES ON AN IPL. PROBLEM OCCURS ONLY WHEN THE MACHINE IS COLD.
** PROBLEM ISOLATION AIDS **
THE -18 VOLTS WAS DROPPING DURING THE IPL.
** CAUSE **
REPLACED THE -30 VOLT REGULATOR CARD.

0299 ***** 0299 ***** 0299

** TROUBLE ** 5444 **
FRICTION DRIVE MOD 2, HEADS UNLOADING WHEN ANY FORWARD ACCESS MOTION WAS ATTEMPTED FROM HOME POSITION.
** CAUSE **
ADJUSTED FINE HOME LAMP POSITION SO THAT TRACK CROSSING CELL OUTPUT DROPS BEFORE FINE HOME, WHEN THE DRIVE DISK IS ROTATED IN EITHER POSITION.
SCOPE PHOTO AMPLIFIER OUTPUTS, Y-W1C6-J02 AND G04 ON A AND B CHANNEL. LOGIC FN450.
COMMENTS-- THE CAUSE OF THE HEADS UNLOADING WAS THE HEAD LOAD LATCH WAS BEING RESET BY LINE MINUS CARRIAGE BEHIND HOME Y-W1B6-D08 LOGIC FN440.. SEE NEXT PAGE FOR EXPLANATION
EXPLANATION-- THE LINE MINUS CARRIAGE BEHIND HOME WAS ACTIVATED WHEN MINUS FINE HOME AREA GOES POSITIVE BEFORE PLUS FILE TRACK CROSSING GOES NEGATIVE. THIS IS CAUSED BY FINE AREA PHOTO CELL LAMP NOT BEING CENTERED PROPERLY THUS GOING DARK BEFORE TRACK CROSSING CELL. LOGIC FN460

0300 ***** 0300 ***** 0300

** TROUBLE **
5444 FRICTION DRIVE DROPS READY ON A REVERSE SEEK TO TRACK 000.
** CAUSE **
THE FINE HOME PHOTOCCELL WAS OFF CENTER.
** TROUBLE **
DROPPING READY DURING SEEK.
** CAUSE **
DEFECTIVE DRIVE DISK. THE PROBLEM USUALLY SHOWS UP WHEN SEEKING TO A SPECIFIC TRACK.

0301 ***** 0301 ***** 0301

** TROUBLE ** 5444 **
SIX FIXES FOR FRICTION DRIVE DROP READY PROBLEM
1. C6, Y-C6, Y-W1C6
2. Q6 FAILING UNDER LOAD (REF ZA240)
3. FLAG OUT OF ADJUSTMENT
4. OPEN VOICE COIL
5. LOOSE SCREWS IN VOICE COIL
6. RELAY K6-3
** TROUBLE **
1. ACCESS IS AT 205 WHEN READY DROPS. IF CE SINGLE TRACK IS USED, THE ACCESS WILL NOT SEEK REVERSE PAST 200. THE CUSTOMER GETS -1 HALT.
** CAUSE **
C6 CARD. THE LINE *INHIBIT RETRACT* IS ACTIVE AT 200 COULD ALSO BE CAUSED BY FLAG OUT OF ADJ.
** TROUBLE **
2. SEEKS INCORRECTLY, ALSO NOISY INTERMITTENTLY AND MAY DROP READY ON LONG SEEKS.
** CAUSE **
Q6 FAILING UNDER LOAD. RELEASE COIL WINDING OF DETENT.
** TROUBLE **
3. DROPS READY WITH ACCESS AT 205.
** CAUSE **
FLAG OUT OF ADJ. PC1 SHOULD NOT BE MADE AT 204 OR 205.
** TROUBLE **
4. WONT READY. ACCESS AT TRACK MINUS 1. AFTER MANUALLY . LOADING HEADS AND USING CE SWITCH, ACCESS WOULD STOP 1 TRACK PAST PROPER TRACK, I.E. TRACK 12 INSTEAD OF 11.
** CAUSE **
THE ENGAGE HALF OF VOICE COIL WAS OPEN.
** TROUBLE **
5. NOISY ON POWER ON SEEK. ON 10 TRACK MANUAL SEEK RASPING NOISE CAN BE HEARD.
** CAUSE **
SCREWS LOOSE IN YOKE OF VOICE COIL CAUSING BIND.
** TROUBLE **
6. FAILS TO READY. OPEN LIGHT WONT COME ON.
** CAUSE **
RELAY K6-3 N/O FAILED TO MAKE...5410 ATTACH. LOGIC PAGE YD100...24 VOLTS REGULATED MISSING FOR 5444. THIS BURNED OUT VOICE COIL AND TIRE.

0302 ***** 0302 ***** 0302

** TROUBLE ** 5444

```

FILE DRAWER 1 DROPS READY ONLY WHEN WRITING.
ON FILE 2 TWO...DIAGS AND MAPS FAIL.
** CAUSE **
C4 IN ATTACHMENT W3 C4 01A A2C4
0303 ***** 0303 ***** 0303
** TROUBLE **
5444 IS READY BUT HAS MESSAGE WHICH STATES NOT READY
** CAUSE **
CPU WAS LOOPING BAD DATA SEPARATOR CARD SAWTOOTH OUTPUT
WAS RAGGED BAD CARD 01A A2D4 . NOTE..WHEN CHANGING THE DATA
SEPARATOR CARDS THE DATA SEPARATOR MUST BE ADJUSTED.
0304 ***** 0304 ***** 0304
** TROUBLE ** 5444 **
DROPS READY ON IPL, WON'T READY OR OC HALTS
** CAUSE ** MULTIPLE
Y GATE CARDS THAT WILL CAUSE DROPPING RDY A6 B6 C6 D6 F6 G7
BRUSH CYCLE COMPLETE SW.BOUNCING DROPS READY AND TURNS ON I/O
ATTENTION LIGHT. 5406 HALT ABD2345, 5410 HALT OA OA
*****
01A-W302 READ OSCILLATOR DROP RDY IPL
01A A2D2 OR A1D2....
CHECK THE CABLE UNDER DC BOX THAT FEEDS THE STEPPER MOTOR DRIVER
CARD FOR BEING LOOSE. Y-WID6 MAY BE BAD. ALSO OC, OC HALTS.
*****
18 VOLTS IN FILE CHECK ON 5444 ALD FS210 FOR VOLTAGE PINS
CHECK BOTH +18 AND -18 SEE ISOLATION AIDS IF 18V IS BAD
*****
REPLACE BRUSH MIDCYCLE SWITCH.
*****
BRUSH ASM IF AFTER CHANGING SWITCHES YOU STILL HAVE TROUBLE
THE MOTOR SHAFT MAY HAVE EXCESS SIDE PLAY AND CAUSE THE BRUSH
COMPLETE SWITCH TO MAKE AND BREAK.
*****
LOOSE SOLDER CONNECTIONS OR CABLE CONNECTIONS ON THE DRAWER
LATCH DRIVER CARD.
T1 TRANSISTOR LOOSE SOLDER CONNECTIONS SYSTEM TEST
GIVES 09 ERRORS WITH OE HALT. SAYS FILE DROP READY
BUT IS REALLY A SEEK FAILURE
*****
STEPPER SINGLE SHOT ADJUSTMENT USE BOB PROGRAM AND SAA23
TO ADJUST...FAILURE RATE INTERMITTENT (SELECT UNSAFE
CAUSED BY STEPPER NOT SETTLING DOWN BY TIME OF NEXT
COMMAND. OC, OC
*****
DROP READY HIGH SPEED DRIVES ON R2 ON IPL PROGRAM ERROR
IF ACCESS IS SEEKING HIGH SPEED WHEN HOME IS REACHED
THE STEPPER WILL STOP BEHIND HOME...SEE MICROFICHE
FOR APAR NUMBER 302400
*****
C6 CARD Y GATE DROP READY ON RECAL (RECALIBRATE) EXCEPT IPL
*****
LIGHT OR CELL FOR FINE HOME...HEADS UNLOADED AT CYL 0. MUST
POWER 5444 DOWN AND BACK UP TO GET READY.
*****
CARRIAGE LAMP 1 OR 2 DIM OR FLICKERING CHECK SOCKET ALSO
18 VOLTS CHECK FOR BURNED CARDS AND NETS ON THE Y GATE
THE F6 CARD SHOULD BE REPLACED. DO A GROUND CHECK AT CPU
END AND IF GROUND FOUND SUSPECT THE READ PRE AMP IN THE
Z GATE.
*****
SWAP BRUSH MOTOR AND SWITCH ASM IF YOU HAVE 2 DRIVES
*****
SWAP CARDS FROM ONE FILE TO ANOTHER
*****
CHECK FOR CABLE CHAFING UNDER FILE BY DRIVE PULLEY
0305 ***** 0305 ***** 0305
** TROUBLE **
5444 WILL NOT START. FUSE 201 (F201) BLOWN. DRIVE 2 WOULD NOT
START. DRIVE 1 DID START AND READY.
** CAUSE **
RESISTOR IN BRAKE CIRCUIT FOR DRIVE 1 WAS BLOWN AND BLOWING
F201.
0306 ***** 0306 ***** 0306
* TROUBLE...5444 WONT COME READY THE OPEN LIGHT STAYS
ON AND THE MOTOR WILL NOT TURN EVEN THOUGH
VOLTAGE IS APPLIED TO IT.
** CAUSE **
THE SEPARATOR BETWEEN THE FIXED AND REMOVABLE DISK
HAD ITS ATTACHING SCREWS COME LOOSE AND CAUSED A
BIND ON THE REMOVABLE PACK.A SMALL AMOUNT OF TYPE E
LOCTITE P/N0605960 CAN BE PUT ON THE LAST 5 OR 6
THREADS OF THE SCREWS TO PREVENT LOOSENING AGAIN.
ON DIAGNOSTIC 121 (KEY BOARD PROBLEM.
0307 ***** 0307 ***** 0307
** TROUBLE **
5444 WILL NOT READY. DRAWER LATCH SOLENOID
FAILS TO DROP OCCASIONALLY.
** CAUSE **
REPLACE CIRCUIT CARD IN DRAWER LATCH ASM.
0308 ***** 0308 ***** 0308
** TROUBLE **
5444 WILL NOT READY WITH OEM PACKS.
CARTRIDGE CLAMP INTERLOCK SWITCH ADJUSTMENT HAS BECOME MORE
CRITICAL WHE USING IBM AND NON IBM DISC PACKS IN THE SAME
ACCOUNT. THIS IS CAUSED BY A DIFFERENCE IN HEIGHT OF THE
DISC CARTRIDGE COVER.
** PROBLEM ISOLATION AIDS **
MOTOR DOES NOT START WITH PACK INSTALLED
** CAUSE **
ADJUST CARTRIDGE CLAMP INTERLOCK SWITCHES SO THEY WILL
TRANSFER CORRECTLY USING EITHER TYPE OF PACK
0309 ***** 0309 ***** 0309
** TROUBLE ** 5444
DRIVE WONT COME READY AND DRIVE MOTOR MAY OR MAY NOT START
WITH OUT A PACK ON.
** PROBLEM ISOLATION AIDS **
OBSERVED THAT K1-1 RC NET AND R10 WERE BURNED UP
** CAUSE **
Y1D6 BLOWN - X GATE CARD - Q8 TRANSISTOR - R10 AND RC ON K1 N/O
REMOVE RC NET PER RETAIN TIP 99,USE 600V CAP.
0310 ***** 0310 ***** 0310
** TROUBLE ** 5444
CE TURNED MOTOR SWITCH OFF WHILE BRUSHES IN MIDDLE OF SWEEP
CYCLE. COULD NOT RESTART PACK.
** CAUSE **
WIRES WERE SWAPPED ON THE N/O AND N/C POINTS OF THE CYCLE
COMPLETE SWITCH.
0311 ***** 0311 ***** 0311
** TROUBLE ** 5444
FAIL TO READY CONTINUOUS BRUSH CYCLES. DRIVE MOTOR STARTS.
BRUSH MOTOR STARTS.BRUSH CYCLE COMPLETE SWITCH TRANSFERS.
DRIVE MOTOR STOPS. BRUSH CYC COMP. DRIVE MOTOR STARTS, ETC.
** CAUSE **
K2-2 N/O FTM
0312 ***** 0312 ***** 0312
** TROUBLE ** 5444 **
1 IF THE 5444 IS TURNED ON THEN TURNED OFF BEFORE IT COMES
READY, THE BRUSH MOTOR RUNS CONTINUOUSLY. CUSTOMER CAN
OPEN DRAWER DURING TIME BRUSH CYCLE COMPLETE SW. IS MADE.
** PROBLEM ISOLATION AIDS **
ZA220 GND LATCH HEADS LINE WAS AT 0 VOLTS. ISOLATE X GATE A1B12
SHOULD NOT BE 0 VOLTS WITH START STOP SWITCH IN OFF POSITION
** CAUSE **
X GATE DRIVER CARD
** TROUBLE **
2 CONTINUOUS BRUSH CYCLES WHEN A POWER ON SEQUENCE IS
ABORTED BEFORE READY IS ACHIEVED ( SAME AS SYM.1 ).
** CAUSE **
CABLE TO THE LEVER HOLD SOLENOID ( FOR THE HEAD LOAD
LATCH ) WAS PINCHED BY THE CABLE CLAMP. THIS GROUNDED
THE *GND LATCH HEADS* LINE.
0313 ***** 0313 ***** 0313
** TROUBLE ** 5444 **
GETTING CONTINUOUS BRUSH CYCLES, HEADS WILL NOT LOAD, AND
DRIVE WILL NOT READY.
** PROBLEM ISOLATION AIDS **
THE ON TRACK PULSE WILL NOT CHANGE WHEN MANUALLY TURNING WITH
FUSE 1 OUT (PER MAPS).
** CAUSE **
Y W1B6
0314 ***** 0314 ***** 0314
** TROUBLE ** 5444
CONTINUES TO CYCLE UP AND DOWN. HEADS LOAD ON BRUSH
CYCLE, THEN AT BRUSH CYCLE COMPLETE HEADS UNLOAD.
DO NOT GET UP TO SPEED. DISK DRIVE MOTOR IS RUNNING
SLOW.
** PROBLEM ISOLATION AIDS **
CHECK VOLTAGE TO DRIVE MOTOR, AND FUSE SF-7 IN CPU.
** CAUSE **
BRUSH MOTOR LEAD GROUNDING IN MOTOR.
0315 ***** 0315 ***** 0315
** TROUBLE ** 5444
CONTINUOUS BRUSH CYCLE WITH POWER OFF
** CAUSE **
X GATE DRIVER CARD
0316 ***** 0316 ***** 0316
** TROUBLE ** 5444
CONTINUOUS BRUSH CYCLES WHEN FILE IS POWERED ON. THE READY
LAMP IS ON DURING THE TIME BRUSH CYCLE COMPLETE IS MADE.
CARRIAGE STAYS IN RETRACTED POSITION.
** CAUSE **
P6 PIN 4 NOT MAKING CONNECTION
0317 ***** 0317 ***** 0317
** TROUBLE ** 5444
BOTH DRIVES CONTINEOUS BRUSH CYCLES, HEADS LOAD
READY LIGHT BLINKS ON AND OFF.
AS BRUSH BEGINS CYCLE. BLOWS FUSE 201 INTERMITTENTLY.
** CAUSE **
LOOSE WIRE ON R10 IN DRIVE TWO.
0318 ***** 0318 ***** 0318
** TROUBLE **
5444 TAKES CONTINUOUS BRUSH CYCLE.. DRIVE WILL READY WHEN
BRUSH COMPLETE SWITCH MAKES THEN DROP WHEN SWITCH BREAKS.
READY WILL BE UP A FEW SECONDS THEN DROP AS BRUSHES CONTINUE
TO RUN. HEADS DC NCT LOAD.
** PROBLEM ISOLATION AIDS **
PLUG SIX SHOULD READ CONTINUITY BETWEEN PIN 3 AND PIN 4 IF
THE NORMALLY CLOSED PORTION OF SWITCH IS MADE. LOGIC ZA220
** CAUSE **
NORMALLY CLOSED PORTION OF HEAD LOAD SWITCH DEFECTIVE.
0319 ***** 0319 ***** 0319
** TROUBLE ** 5444
ON POWER ON,ACCESS MOVES FOWARD STOPING BEFORE
IT GETS TO ZERO. THE FAILURE MAY BE INTERMITTENT
SHOWING UP APPROX. TEN PERCENT OF THE TIME.
** PROBLEM ISOLATION AIDS **
SCOPE Y W1C6 D11 LOOK FOR NOISE SPIKE IN EXCESS OF
ONE MICROSECOND.
** CAUSE **
Y W1C6
0320 ***** 0320 ***** 0320
** TROUBLE **
5444 FAILS TO READY. BRUSH SWITCHES WILL NOT FIX. ACCESS
GOES HALF WAY TO CYL 0 AND RETRACTS.
** CAUSE **
CONNECTOR P6 HAS POOR CONTACT OR LOOSE CONNECTIONS.
0321 ***** 0321 ***** 0321
** TROUBLE **
5444 WONT READY. CARRIAGE GOES OUT TO 100
RETURNS PAST ZERO AND HEADS WONT LOAD.
** PROBLEM ISOLATION AIDS **
CHECK PHOTO AMP LAMP 1 FOR BRIGHTNESS
** CAUSE **
CARRIAGE PHOTOCELL 1 DIM
0322 ***** 0322 ***** 0322
** TROUBLE **
5444 WONT READY. HEADS MAY OR MAY NOT BE LOADED.DURING START-UP
CARRIAGE ACCESSES TO 100 AND THEN BACK TO AROUND MINUS 5.
IF POWERED UP WITH CARRIAGE OVER DISK WOULD DRIVE CARRIAGE OFF
THE LEADSREW
** CAUSE **
P3 CONNECTOR LOOSE-USED ZA230 AND SERVICE AID 24 TO ISOLATE
0323 ***** 0323 ***** 0323
** TROUBLE ** 5444
HEADS LOAD TO TRACK -1 INSTEAD OF 0.
WILL NOT SEEK IN CE MODE.
** CAUSE **
Y-W1B6
0324 ***** 0324 ***** 0324
** TROUBLE ** 5444
FAILING TO COME READY. HEADS FAIL TO LOAD.
** PROBLEM ISOLATION AIDS **
VIBRATION WOULD CAUSE THE PROBLEM TO GO AWAY
** CAUSE **
CARTRIDGE PHOTO CELL LAMP ENDS WERE CORRODED AND CAUSED THE LAMP
S TO DIM. CLEANED BASE OF THE LAMPS.
0325 ***** 0325 ***** 0325
** 5444 READY PROBLEMS **

```

**** TROUBLE ****
 1. WONT READY. GOES THRU BRUSH CYCLE, ACCESS STARTS TO MOVE. MOVES ABOUT 10-30 TRACKS THEN STOPS. OPEN LIGHT OFF ANDY DOESNT LOAD HEADS.
**** CAUSE ****
 . BRUSH CYCLE COMPLETE SWITCH
**** TROUBLE ****
 2. FRICTION DRIVE GOES TO CRASH STOP *CYL 207* ON POWER UP CYCLE.
**** CAUSE ****
 A BRUSH CYCLE COMPLETE SWITCH
 B TIMING OF BRUSH MID CYCLE SW. TO BRUSH CYCLE COMPLETE SW

0326 ***** 0326 ***** 0326

**** TROUBLE ** 5444 ****
 THE FRICTION DRIVE WOULD NGT COME READY. THE ACCESS STOPS AT TRACK -001. USING THE CE ACCESS FOR TEN TRACK, IT WILL STOP AT TRACK 12, 22, 32 ETC. IT SHOULD STOP AT TRACK 11, 21, 31 ETC.
**** CAUSE ****
 THE ENGAGE COIL OF THE VOICE COIL WAS OPEN WHICH ALLOWED THE ACCESS TO GO ONE TRACK TOO FAR BEFORE THE DETENT WOULD ENGAGE.

0327 ***** 0327 ***** 0327

5444 STEPPER
**** TROUBLE ****
 DURING START UP SEQUENCE, ACCESS MOVES FORWARD TO CYL 100 AND THEN REVERSE TO APPROX CYL 65 AND STOPS.
**** CAUSE ****
 HEAD LOAD LEVER HOLD MAGNET OPEN. (CAN ALSO BE CAUSED BY MAGNET ADJUSTMENT. POLE FACES SHOULD BE FLUSH WITH LEVER) NOTE....THIS ALSO SYMPTOM IF ERASE ON SOLID....

0328 ***** 0328 ***** 0328

**** TROUBLE ** 5444**
 DURING START UP SEQUENCE, CARRIAGE MOVES FROM RETRACTED POSITION TO CYL.0 THEN STOPS. HEADS ARE NOT LOADED BECAUSE THEY HAVE NOT STARTED UP THE RAMP. STEPPER FAILS TO READY. ACCESS SOMETIMES STOPS AT TRACK 1 ALSO.
**** PROBLEM ISOLATION AIDS ****
 SCOPE FOR NOISE ON Y-W1C6 G03. TRIGGER INTERNAL ON C6 G03, ONE HALF VOLT PER DIVISION, 2 MICROSEC.PER DIV. PUT CE SWITCH IN 50 TRACK MODE. GROUND F6G02 TO SEEK 50 TRACKS. BE SURE HEADS ARE NOT LOADED WHILE SCOPING. NOISE WILL BE AT THE BEGINNING OF THE TRACE AND SHOULD NOT EXCEED 3 VOLTS PEAK TO PEAK. IF NOISY, ONE OR MORE OF THE PHASE DIODES IS SWITCHING TOO FAST, GENERATING THE NOISE.

CAUSE
 OBTAIN LOCALLY FOUR 10K PICOFARAD, 100 VOLT CAPACITORS. SOLDER ONE ACROSS EACH OF THE 4 PHASE DIODES, CR1, CR2, CR3, AND CR4. PART NUMBER OF CAPACITOR IS P/N0492411
CAUSE
 INSTALL CAP (SEE NEXT PAGE) ON Y-W1N7 B05 AND Y-W1N7 D08. NOTE... 10K PICC FARAD IS .01 UFD.
 *****NOTE*** THIS ALSO WORKS WONDERS FOR SEEK ERRORS ON ONE OR BOTH DRIVES..DIAGS FAIL ONLY ON HIGH SPEED SEEKS OF LESS THAN 50 TRACKS.
 SEE RETAIN TIP 113
 CAP PART NUMBER P/N0672561 IS AN ASSEMBLY. P/N0217032 IS JUST THE CAP. IN INTEREST OF TIME PURCHASE LOCALLY

0329 ***** 0329 ***** 0329

**** TROUBLE ** 5444 MORNING SICKNESS**
 ACCESS STOP AT TRACK 095 DUE TO CHANGE OF STATUS OF CARRIAGE PHOTOCELL 1
**** CAUSE ****
 DEFECTIVE PHOTOCELL ASM. (ENCODER)

0330 ***** 0330 ***** 0330

**** TROUBLE ****
 5444 WILL LOAD HEADS AT CYLINDER 100. WILL NOT REVERSE SEEK BUT WILL FORWARD SEEK. FAIL EITHER ON OR OFF LINE.
**** CAUSE ****
 CARRIAGE RETRACTED MICRO SWITCH N/O SHORTED

0331 ***** 0331 ***** 0331

**** TROUBLE ** 5444**
 TURNED DISK DRIVE ON, CARRIAGE WOULD GO TO CYLINDER 100 - HEADS WOULD LOAD - READY LITE (LIGHT) ON - BUT IT LOCKED THERE - DID NOT RETRACT TO HOME.
**** CAUSE ****
 CARRIAGE RETRACT SWITCH N/C FAILED TO MAKE - REPLACED SWITCH

0332 ***** 0332 ***** 0332

**** TROUBLE ** 5444**
 WON'T COME READY NEW STYLE BRUSH UNIT.
**** PROBLEM ISOLATION AIDS ****
 CARRIAGE STOPS AT ABOUT 070 AFTER GOING OUT TO 100. PROBLEM CAN BE FOUND BY RAPPING ON THE SWITCH WHILE METERING SWITCH WHEN IT IS IN THE N/C OR N/O POSITION.
**** CAUSE ****
 BRUSH COMPLETE SWITCH (.025 INCHES FROM CAM)

0333 ***** 0333 ***** 0333

**** TROUBLE ** 5444 ****
 FRICTION DRIVE GOES TO CRASH STOP ON POWER UP. (CYL 207) DRIVE WON'T COME READY.
**** PROBLEM ISOLATION AIDS ****
 DRIVE HAS NEW STYLE BRUSH UNIT INSTALLED. SWITCHES OK.
**** CAUSE ****
 Y GATE W1D6

0334 ***** 0334 ***** 0334

**** TROUBLE ** 5410 5444**
 SEEKING TO WRONG CYLINDER, TURNS ON SEEK CHECK ON A RECALIBRATE OPERATION.
**** PROBLEM ISOLATION AIDS ****
 ON A SEEK OPERATION, ACCESS GOES TO TRACK 26 AND HANGS BECAUSE WRONG INFORMATION IS IN DIFFERENCE COUNTER. DFCR IS SOMEHOW POINTING TO WRONG AREA OF DISK CONTROL FIELD, 4 BYTES FROM CORRECT ADDRESS.
**** CAUSE ****
 J1A B2H2

0335 ***** 0335 ***** 0335

**** TROUBLE ** 5410 5406**
 5444 SEEK CHECK IN DIAGNOSTIC AOE. A00A HALT IN ROUTINE 07. MESSAGE IS 'AT TRACK 134 DESTINATION IS TRACK 70 ARRIVED AT TRACK 134. MAP CALL OUT WRONG CARD.
**** PROBLEM ISOLATION AIDS ****
 IF A03 (A03) IS RUN USING DIAL IN ROUTINE 8 (08) AN ERROR IS DETECTED INDICATING A 'GO LINE' IS MISSING. ERAP SHOWS MANY NO RECORD FOUND (NRF) ERRORS.
**** CAUSE ****
 BAD CARD IN O1A A2S2 (W3S2)
 5406 A1S2

0336 ***** 0336 ***** 0336

**** TROUBLE ** 5444 FRICTION**
 OL HALT. NO RECORD FOUND. ENDING UP IN WRONG CYLINDER. MAY OR MAY NOT SHOW UP AS SEEK CHECK.
**** PROBLEM ISOLATION AIDS ****
 VISUAL INSPECTION AND SERVICE CHECKS OF CLUTCHES.

**** CAUSE ****
 FORWARD CLUTCH ARMATURE HAD WEAR CAUSED BY BACKSTOP BINDING, INTERMITTENTLY

0337 ***** 0337 ***** 0337

**** TROUBLE ****
 5444 SEEK CHECKS ON SEEKS GREATER THAN 100 CYLINDER SEEKS

**** CAUSE ****
 EITHER A NOISY LOWER INDEX TRANSDUCER OR A BAD AMPLIFIER CARD CAN CAUSE THIS PROBLEM

0338 ***** 0338 ***** 0338

**** TROUBLE ** 5444**
 SEEK CHECKS, DATA CHECKS, DROPPING READY, MISC. PROBLEMS.
**** CAUSE ****
 R3 (ZA230) NOT SOLDERED AT JOINT. CREATING NOISE.

0339 ***** 0339 ***** 0339

**** TROUBLE ****
 5444 SEEK CHECK SEEKS ONE TRACK SHORT
**** PROBLEM ISOLATION AIDS ****
 ACCESS GOES REVERSE WHEN CE SWITCH TURNED TO ON LINE
**** CAUSE ****
 SHORT IN 1/2 WIDE CABLE Y W1M6, YW1M6

0340 ***** 0340 ***** 0340

**** TROUBLE ****
 5444 SEEK CHECK. NO CE ONE TRACK SEEK. 50 TRACK SEEK GOES TO TRACK 50 AND THEN REVERSES AND GOES BACK TO ZERO.
**** CAUSE ****
 CENTER LAMP ENCODER ASM BAD.

0341 ***** 0341 ***** 0341

**** TROUBLE ****
 5444 GAVE 0C, BLANK 1 HALT, SEEK ERRORS AND OVERRUNS
**** CAUSE ****
 -4.0 VOLTS HAD CHANGED TO -3.6 VOLTS

0342 ***** 0342 ***** 0342

TROUBLE..5444 GIVING NO RECORD FOUND FOR FIRST 30 MIN. OR SO AFTER POWERING UP.
**** CAUSE ****

O1A A2G2

0343 ***** 0343 ***** 0343

**** TROUBLE ** 5444**
 LOST RECORDS, MISSING RECORDS, MISSING ADDRESS MARKS, CR NO RECORD FOUND AFTER CHANGING THE CARTRIDGE. AFTER REINITIALIZING THE REMOVABLE DISK. THE PROGRAM WILL RUN UNTIL PACK IS REMOVED

**** PROBLEM ISOLATION AIDS ****
 SCOPE +INDEX PULSE. RUN DIAG.A08. OBSERVE THAT +INDEX PULSE SWITCHES BETWEEN UPPER AND LOWER INDEXES AS THEY ARE SELECTED.
**** CAUSE ****

INDEX AMPLIFIER, OR UPPER DISK SELECT IS UP SOLID DUE TO DEFECTIVE CARD OR OPEN LAND PATTERN OR DIRTY PIN TO INDEX AMPLIFIER.

0344 ***** 0344 ***** 0344

**** TROUBLE ****
 5444 HIGH SPEED ERRORS AFTER INSTALLING SECOND HIGH SPEED DRIVE MODEL A03

**** CAUSE ****
 HIGH SPEED CARD O1A A2F2 DEFECTIVE

0345 ***** 0345 ***** 0345

**** TROUBLE ** 5444 ****
 STEPPER DRIVE SLOW IN FORWARD DIRECTION, OK IN BACKWARD DIRECTION
**** CAUSE ****
 Y W1G7 IN 5444

0346 ***** 0346 ***** 0346

**** TROUBLE ****
 5444 ERROR ON A03 AND A05 WITH SYMPTOM CHANGING. ONE PASS MIGHT SAY SEEK ERROR OR DATA CHECK OR A BAD HEAD. A01 WILL ALWAYS RUN WITHOUT ERROR. MESSAGE MIGHT SAY NO DATA TRANSFER. HALT 01
**** CAUSE ****

5410 O1A A2E4 A2D4 5406 O1A A1E4 A1D4

0347 ***** 0347 ***** 0347

**** TROUBLE ** 5444**
 SEEKS 1 TRACK TOO FAR ON REVERSE SEEKS ONLY.
**** CAUSE ****
 LOOSE TERMINAL IN J3 P3 PLUG. IN THIS CASE IT WAS TERM J3-3.

0348 ***** 0348 ***** 0348

**** TROUBLE ** 5444**
 SEEK CHECKS, BLOWING F1, SOUNDS LOUDER THAN USUAL.
**** PROBLEM ISOLATION AIDS ****
 CHECK COUPLING FOR PLAY
**** CAUSE ****
 BEARING PADS IN PROPER POSITION, PAD P/N2538019 OR BEARING PAD P/N2600574

0349 ***** 0349 ***** 0349

**** TROUBLE ** 5444**
 USING 1 TRACK CE SWITCH IT WOULD GO 3 TRACKS. 50 TRACK SEEKS WILL NOT WORK AT ALL
**** CAUSE ****
 Y-W1G7

0350 ***** 0350 ***** 0350

**** TROUBLE ** 5444**
 FAILS IN CE MODE, SEEK 1 TRACK TOO FAR
**** CAUSE ****
 Y-W1G7

0351 ***** 0351 ***** 0351

**** TROUBLE ** 5444 ****
 SEEK WRONG. STEPPER MOTOR MAKES GRINDING OR GRATING SOUND AFTER INSTALL HIGH SPEED ACCESS.
**** PROBLEM ISOLATION AIDS ****
 CHECK WIRING TO EC5 FOR CORRECT SIGNALS TO STEPPER MOTOR RESISTORS R5, R6, R7, R8.
**** CAUSE ****
 CABLE TO EC 5 LACED WRONG

0352 ***** 0352 ***** 0352

**** TROUBLE ****
 SEEKS TOO FAR ON FOWARD SEEK, TOO SHORT ON REVERSE SEEK.
**** CAUSE ****
 WORN TRUST BEARING ON LEAD SCREW, BEARING NOT FIELD REPLACEABLE REPLACE ACTVATOR ASM.

0353 ***** 0353 ***** 0353

0354 ***** 0354 ***** 0354 *****

**** TROUBLE ** 5444**
 FAIL TO ACCESS FORWARD AFTER ACCESS REPLACED
**** CAUSE ****
 OVERRUN SWITCH WIRED BACKWARD

0355 ***** 0355 ***** 0355 *****

**** TROUBLE ** 5444**
 SEEK ERRORS ON 803, SEEKS TO 09 OK, FAILS TO 2
 TRACK SEEK TO 11. MANUAL SEEK WORKS.
**** CAUSE ****
 ENCODER ASM.

0356 ***** 0356 ***** 0356 *****

**** TROUBLE ** 5444**
 SEEK CHECKS
**** PROBLEM ISOLATION AIDS ****
 CHECK VOLTAGE AT ENCODER FOR PROPER VOLTAGE FOR *ON TRACK*
**** CAUSE ****
 USE SAA24 5444, CHECK CABLE FOR BEING CUT BY BELT.

0357 ***** 0357 ***** 0357 *****

**** TROUBLE ** 5444**
 SEEK CHECKS
**** PROBLEM ISOLATION AIDS ****
 IF UNABLE TO ADJUST STEPPER MOTOR TO STAY STABLE FOR ANY LENGTH
 OF TIME.
**** CAUSE ****
 REPLACE STEPPER MOTOR

0358 ***** 0358 ***** 0358 *****

**** TROUBLE ****
 5444 SEEKING INCORRECTLY. ALL DIAG. FAIL ON DRIVE 2
**** CAUSE ****
 BAD CARD 01A A1F2 IF 5410 THEN 01A A2F2

0359 ***** 0359 ***** 0359 *****

**** TROUBLE ** 5444 FRICTION ****
 1 SEEK CHECKS OR BLANK ONE HALTS AFTER BEING IDLE FOR ABOUT
 AN HOUR WITH POWER ON. BLANK 1 HALTS ON THE 5410
**** CAUSE ****
 VOICE COIL YOKE WAS STICKING TO BUFFER P/N2537399. USE
 5444 RETAIN TIP 090.
**** TROUBLE ****
 2 DIAGNOSTIC A03 ROUTINE 04 HALT 02 SEEK ERROR. SEEK CHECKS
 OCCUR ON SERIES OF SEEKS NEAR CYLINDER 200.
**** CAUSE ****
 FLAG OUT OF ADJ. MAY SHOW UP AFTER 100 TO 200 CYL. CHANGE
**** TROUBLE ****
 3 SEEKS 1 TRACK TOO FAR ON LONG SEEKS. SYSTEMS TEST MODULE
 A0F FAILS WITH 04 HALT. ALL OTHER DIAG. RUN OK. HIGHLY
 INTERMITTENT.
**** CAUSE ****
 VOICE COIL MOMENTARILY STICKING IN DISENGAGE POSITION.
 REPLACED VOICE COIL. TRY CLEANING BUFFER P/N2537398 USING
 SAME METHOD AS IN 5444 RETAIN TIP 090.
**** TROUBLE ****
 4 SEEKS 1 TRACK TOO FAR.
**** CAUSE ****
 E6, Y-E6, Y-WIE6 BAD. COULD ALSO BE CAUSED BY BAD CLUTCH
 OR LAYSHAFT ADJ. USE DIAG. BOB.
**** TROUBLE ****
 5 HEADS FAIL TO RETRACT WHEN POWERED OFF. DRAWER WONT OPEN.
**** CAUSE ****
 REPLACED VOICE COIL.
**** TROUBLE ****
 6 DIAGNOSTIC A03 ROUTINE 4 FAILS WITH HALT 02 SEEK ERROR
**** CAUSE ****
 VOICE COIL. USE 5444 RETAIN TIP 090. SEE TROUBLE 1
**** TROUBLE ****
 7 DRIVE TIRE WEARS OUT EXTREMELY FAST. TYRE
**** CAUSE ****
 REPLACED VOICE COIL
**** TROUBLE ****
 8 VOICE COIL CHATTERS
**** CAUSE ****
 LOOSE LEAD ON VOICE COIL
**** TROUBLE ****
 9 CUSTOMER CANNOT INITIALIZE. UNRECOVERABLE DISK ERROR.
**** CAUSE ****
 CLEANED DISK AND TIRE. RUN DIAG. BOB 4-5 TIMES TO CHECK
 CLUTCH ADJ. AND VERIFY FIX.
**** TROUBLE ****
 10 SEEK CHECK
**** CAUSE ****
 Y-WIF6

0360 ***** 0360 ***** 0360 *****

**** TROUBLE ** 5444 FRICTION**
 SEEK 1 OR 2 TRACK TOO FAR ON CE SINGLE TRACK SEEKS. 10 TRACK
 SEEK OK...FAILS JOBS AND DIAGNOSTICS.
**** PROBLEM ISOLATION AIDS ****
 APPLY PRESSURE AIDING AND OPPOSING DETENT MOTION AND CLUTCH
 MOTION.
**** CAUSE ****
 WEAK SPRING ON FOWARD DETENT.

0361 ***** 0361 ***** 0361 *****

**** TROUBLE ****
 5444 STEPPER DRIVE WITH SEEK FAILURES AND/OR DROPPING READY.
**** CAUSE ****
 DIFFICULT TO ANALYZE PROBLEMS MAY BE CAUSED BY A SHORTED
 DETENT VOICE COIL.
 THE RESULT OF THIS PROBLEM IS A SLUGGISH DETENT OPERATION.
 ONE INDICATION IS LACK OF THE NORMAL CLICKING SOUND MADE BY
 THE ACCESS, INSTEAD THERE IS A VERY TINNY SOUND AND INSTEAD
 OF A CONSTANT TENSION IN BOTH DIRECTIONS, THERE WILL BE NO
 TENSION ON THE DETENT OPERATING SHAFT.
 RESISTANCE BETWEEN THE VOICE COIL TERMINALS SHOULD BE
 APPROX. 8 OHMS FROM EC2C TO EC2D AND EC2C TO EC2E.

0362 ***** 0362 ***** 0362 *****

**** TROUBLE ** 5444 ****
 WHEN CE DIAGNOSTICS WERE LOADED HAD A ABCD2345 HALT AFTER
 THE SECOND A5 HALT DCP DID NOT PRINT OUT.
**** PROBLEM ISOLATION AIDS ****
 5444 HEADS WERE AT CRASH STOP
**** CAUSE ****
 01A A1G2

0363 ***** 0363 ***** 0363 *****

**** TROUBLE ****
 5444 SEEKS TO CRASH STOP STEPPER MOTOR KEEPS DRIVING
**** CAUSE ****
 BAD CARD W1G7 Y GATE ACCESS CONTROL CARD

0364 ***** 0364 ***** 0364 *****

**** TROUBLE ****
 5444 STEPPER MOTOR RUN CONTINUOUSLY, REVERSE OR FORWARD PAST
 OVER RUN OR CARRIAGE RETRACTED SWITCHES.
**** PROBLEM ISOLATION AIDS ****
 CHECK SWITCHES FOR PROPER OPERATION.
**** CAUSE ****
 SHORTED STEPPER MOTOR C1ODE. DIODE MAY BREAK DOWN UNDER LOAD
 BUT MAY BE GOOD WHEN CHECKING WITH AN OHM METER.

0365 ***** 0365 ***** 0365 *****

**** TROUBLE ****
 5444 STEPPER BLOWS FUSE 1 AND CARRIAGE RUNS OFF LEAD SCREW
**** CAUSE ****
 DEFECTIVE CARD Y W1D6

0366 ***** 0366 ***** 0366 *****

**** TROUBLE ** 5444**
 ACCESS DRIVE GOES TO CRASH STOP ON DIAGNOSTIC A03. A0E GIVES
 HALT 0A.
**** CAUSE ****
 Y-WIE6

0367 ***** 0367 ***** 0367 *****

**** TROUBLE ** 5444**
 5410 OC HALTS 5406 ABD1245 HALTS
 ERAP SHOWS EQUIPMENT CHECKS AND MANY DATA CHECKS, ALL HEADS
 ANY CYLINDER
**** ISOLATIONS AIDS ****
 LOOP ON ANY READ DATA DIAGNOSTIC OR USE B04, SCOPE DATA SEPARATO
 R OUTPUT LOOK FOR NOISE SPIKES ON DATA.
**** CAUSE ****
 WIRES TO CE ROTARY SWITCH ON 5444 NOT SOLDERED, CREATING NOISE

0368 ***** 0368 ***** 0368 *****

**** TROUBLE ** 5410 5406**
 5444 BLANK ONE HALT
**** CAUSE ****
 01A W3L2 AND 01A W3N2
 5410 + 5406
 01A A2L2 5410
 01A A1L2 5406

0369 ***** 0369 ***** 0369 *****

**** TROUBLE ****
 5444 HALT BLANK 1 AND OR 0L HALT
**** PROBLEM ISOLATION AIDS ****
 SWAP DRIVE CABLES IF POSSIBLE TO ISOLATE
**** CAUSE ****
 LOOSE CONNECTOR FOR 6 VOLT FILTER CAPACITOR ON Y GATE

0370 ***** 0370 ***** 0370 *****

**** TROUBLE ****
 INTERMITTENT DATA CHECKS OR DROPPING READY
**** CAUSE ****
 CONSIDER MAKING THE DATA SEPARATOR ADJUSTMENT ACCORDING TO
 THE 5444 TMM. 8-202. THE DATA SEPARATOR SEPARATES THE CLOCK,
 DATA AND ADDRESS MARKS FROM THE SERIAL RAW DATA.

0371 ***** 0371 ***** 0371 *****

**** TROUBLE ** 5444 ****
 VERY INTERMITTENT DATA CHECKS. SEEMED TO ONLY SHOW UP ON
 AN R1 TO R1 COPY.
**** CAUSE ****
 FLEXIBLE COIL THAT HEAD LEADS GO THRU WAS BROKEN. IT
 HAD WORN THE INSULATION OF THE LEADS AND WOULD GROUND
 THEM OUT WHEN THE ACCESS WAS AT A CERTAIN SPOT.

0372 ***** 0372 ***** 0372 *****

5444
**** TROUBLE ****
 CUSTOMER UNABLE TO INITIALIZE PROPERLY - PROGRAM INDICATES
 DEFECTIVE TRACKS WHICH ARE OK.
 DISK DIAGNOSTICS RAN EXCEPT FOR A0A A0B A0C SCAN TESTS -
 THESE SHOWED INT. DATA CHECK AND SCAN HITS ON WRONG
 SECTOR. FAILURES WERE QUITE REGULAR AT TIMES BUT THEN MAY
 DISAPPEAR FOR SEVERAL HOURS.
**** CAUSE ****
 PROBLEM WAS CAUSED BY IMPROPER GROUNDING.
 SYSTEM GROUND WAS ATTACHED TO CONDUIT GROUND WHICH HAD A
 DEFECTIVE CONNECTION AT BOX.

0373 ***** 0373 ***** 0373 *****

**** TROUBLE ** 5444**
 DATA AND EQUIPMENT CHECK ...ALL DIAGS O.K. 15 TO 30 A DAY...
 ALSO GOES TO OC HALT...ALL CARDS IN ATTACHMENT AND FRICTION FILE
 SUBBED...
**** CAUSE ****
 REROUTE CABLE FROM LOWER INDEX TRANSDUCER AWAY FROM (CONT.)
 SIGNAL CABLE FROM Z GATE.

0374 ***** 0374 ***** 0374 *****

**** TROUBLE ** 5444**
 READ DATA CHECK, 0L HALT. FAILS ON SORT JOB - ANY JOB WHICH
 REQUIRES A LARGE AMOUNT OF SEEKING. DRIVE PROBLEM, NOT ATTACH.
**** PROBLEM ISOLATION AIDS ****
 SCOPE FOR NOISE ON Y-WIC6 G03. TRIGGER INTERNAL, ONE HALF VOLT
 PER DIV., 2 MICROSECONDS PER DIVISION. CE SWITCH TO 50 TRACK
 MODE. GROUND Y-WIF6 G02, FOR CONTINUOUS 50 TRACK SEEKS. NOISE
 AT START OF TRACE SHOULD NOT EXCEED 3 VOLTS P-P.
**** CAUSE ****
 INSTALL CAPACITOR, P/N0672561, PER 5444 RETAIN TIP 113.
 (INSTALL CAPACITOR BETWEEN Y-WIN7 B05 AND Y-WIN7 D08).
 IF FILTERING THE NOISE DOES NOT FIX THE PROBLEM, REPLACE THE
 STEPPER MOTOR - THE MOTOR IS CAUSING THE NOISE SWITCHING
 TRANSIENT.

0375 ***** 0375 ***** 0375 *****

**** TROUBLE ** 5444**
 MANY READ WRITE ERROR DURING INITIALIZATION, BUT NOT MANY
 WHILE RUNNING TESTS. VERY INTERMITTENT CUSTOMER READ WRITE
 ERRORS.
**** PROBLEM ISOLATION AIDS ****
 RUN A09 RTN 02.
**** CAUSE ****
 ANTI STATIC BRUSH FAILING TO MAKE GOOD CONTACT. ADJUST IT
 FOR 50 GRAMS TENSION.

0376 ***** 0376 ***** 0376 *****

**** TROUBLE ****
 5406 SYS/3 CUSTOMER GETS 135 HALTS. CANNOT IPL
 VERY INTERMITTENT
**** CAUSE ****
 BAD CARD 5406 01A-A1J2

0377 ***** 0377 ***** 0377 *****

**** TROUBLE ****

5444 ERRORS ON SECTOR ONE OF HEAD 0 OR 1 CUSTOMER JOBS ONLY. DIAGNOSTICS RUN ERROR FREE. PROBLEM SHOWING UP ON INSTALLATION - ACCESS ASM HAD BEEN REPLACED. ALL ADJ. HAVE BEEN CHECKED
 ** CAUSE **
 REPLACE A2L2
 ERROR WAS A CYCLIC CODE CHECK. THE FAILURE ON CUSTOMER JOBS WAS A UNRECOVERABLE DISK ERROR. APPEARED TO BE DATA SENSITIVE.

0378 ***** 0378 *****
 ** TROUBLE ** 5410 5444
 5444 UNRECOVERABLE DISK ERROR ON CUSTOMER JOB. DIAGNOSTIC A01 FAIL WITH ERROR 100707 WHICH IS NOT A LISTED HALT
 ** CAUSE **
 DEFECTIVE CARD AT 01A A2L2

0379 ***** 0379 *****
 5444 STEPPER
 ** TROUBLE **
 1 OR 2 TIMES A DAY CUSTOMER REPORTED THE HALT. MACHINE WOULD NOT FAIL ON DIAGS. HAD TO TURN OFF THE DRIVE TO RECOVER. (BLANK 1 HALT)
 CAUSE* THE ENCODER DISK HAD A SCRATCH ACROSS THE 'ON TRACK' SLOTS THAT WAS VERY FINE AND HARD TO SEE ON A CASUAL LOOK.

0380 ***** 0380 *****
 ** TROUBLE ** 5444
 PERMANENT DISK ERROR. DATA CHECK. TROUBLE INITIALIZING. MISSING ADDRESS MARK. NO RECORD FOUND.
 ** PROBLEM ISOLATION AIDS **
 IS IT ALWAYS HEAD 0 AND 1, OR HEAD 2 AND 3.
 ** CAUSE **
 HEAD LOAD TORSION ROD.

0381 ***** 0381 *****
 ** TROUBLE **
 5410 5444 BLANK 1 HALT VERY INTERMITTENT ON CUSTOMER JOBS
 ** CAUSE **
 PULL SPAGHETTI (SHRINK TUBING) BACK AWAY FROM ALL CAPACITORS LOCATED ON Y GATE AND CHECK FOR LOOSE OR UNSOLDERED CONNECTIONS REFERENCE -- LOGIC PAGE ZA210 C5 C6 C4 C7
 NOTE ON 5406 HALT IS 135

0382 ***** 0382 *****
 ** TROUBLE **
 5406 5410 5444 MISSING ADDRESS MARK WHEN LIGHTLY TOUCHING ANY OF THE CARDS IN DISK ATTACHMENT.
 ** CAUSE **
 01A A1D3 A2D3 FCU OSCILLATOR CARD

0383 ***** 0383 *****
 ** TROUBLE ** 5444 **
 5410 HE HALT A05 3E HALTS. MISSING ADDRESS MARK, SECTOR COUNT FAILED TO STEP CORRECTLY.
 ** CAUSE **
 01A A3V2

0384 ***** 0384 *****
 ** TROUBLE **
 5444 READ ERROR. A03 FAILURE WITH MISSING ADDRESS MARK.
 ** CAUSE **
 5410 01A A2K2 (W3K2) 5406 01A A1K6

0385 ***** 0385 *****
 ** TROUBLE **
 5444 DIAGNOSTIC A03 RT2 FAIL READ ID FAILURE
 ** CAUSE **
 5406 CARD LOCATION 01A A1D2
 5410 CARD 01A A2D2

0386 ***** 0386 *****
 ** TROUBLE ** 5444
 5444 FAILS ON A03 WITH A001. NO DATA TRANSFERRED ON ALL 4 HEADS.
 ** PROBLEM ISOLATION AIDS **
 SCOPE INDEX PULSES, SPEED SHOULD BE 40 MS
 ** CAUSE **
 SPEED TOO FAST DEFECTIVE MOTOR

0387 ***** 0387 *****
 ** TROUBLE ** 5444 **
 BLANK 0 HALT AFTER BELT CHANGE.
 ** PROBLEM ISOLATION AIDS **
 A0D SPEED TEST DIAGNOSTIC
 ** CAUSE **
 REPLACE DRIVE BELT.

0388 ***** 0388 *****
 ** TROUBLE ** 5444
 WOULD NOT INITIALIZE FIXED DISK. DRIVE CAME UP AND STAYED READY.
 ** CAUSE **
 LOOSE Z CONNECTOR BOARD. BOARD CAME LOOSE FROM FRAME AT BOTTOM.

0389 ***** 0389 *****
 ** TROUBLE **
 DISCS FROM 5410 5444 WILL NOT WORK WITH 5406 5444...WORKS ON OTHER 5406.
 ** PROBLEM ISOLATION AIDS **
 CHECK ALL DISC ADJUSTMENTS
 ** CAUSE **
 ADJ. INDEX TRANSDUCER GAP AND CIRCUMFERENTIAL ADJ. CRITICALLY.

0390 ***** 0390 *****
 ** TROUBLE ** 5444 5406 5410
 5410 5444 NO RECORD FOUND ALWAYS SECTOR 33 ON CUSTOMER JOBS NO ERRORS ON DIAGNOSTICS
 ** CAUSE **
 5410 FILE ATTACHMENT CARD 01A A2G2 OR COULD BE A2F2 DEPENDING ON DRIVE 1 OR DRIVE 2
 5406 A1G2 A1F2 W3G2 W3F2

0391 ***** 0391 *****
 ** TROUBLE ** 5444 **
 UNABLE TO READ AFTER RUNNING DIAGNOSTIC A01. AFTER POWER DOWN AND BACK UP ALL DIAGNOSTICS WILL RUN IF A01 IS NOT RUN.
 ** CAUSE **
 01A A2T2 5410

0392 ***** 0392 *****
 ** TROUBLE **
 5444 INDICATES READ ERROR ON INITIALIZE (CE)
 NOTE IPL PROBLEMS, MISSING ADDRESS MARKS
 ** CAUSE **
 01A A2E4 DATA SEPARATOR MUST BE READJUSTED WHEN E4, OR D4 ARE REPLACED.

0393 ***** 0393 *****
 ** TROUBLE ** 5444
 DIAGNOSTIC A05 FAILS WITH A012 ERROR CODE. MISSING ADDRESS MARKS AND NO RECORD FOUND.
 ** CAUSE **
 PREAMP CARD IN Z GATE.

0394 ***** 0394 *****
 ** 5406-5410 **
 TROUBLE***** WILL NOT IPL WHEN COLD. TROUBLE WILL DISAPPEAR AFTER FEW MINUTES
 DATA SEPARATOR CARD AT LOCATION A-A2E4 IN 5410 AND A-A1E4 IN 5406. DEFECTIVE POT MAKES ADJUSTMENT VERY CRITICAL

0395 ***** 0395 *****
 ** TROUBLE ** 5410
 UNABLE TO READ FROM DISK. NO DATA TRANSFER ON IPL. A01 RUNS OK BUT A03 FAIL WITH SEEK CHECK.
 ** PROBLEM ISOLATION AIDS **
 FILL LOW CORE, IPL FROM DISK THAN RECHECK LOW CORE TO DETERMINE IF ANY DATA TRANSFERRED INTO STORAGE STARTING AT 0000.
 ** CAUSE **
 01A A2J2 W3J2

0396 ***** 0396 *****
 ** TROUBLE **
 WONT IPL 5444 WILL 5424. DIAGNOSTIC A01 RUNS OK AND A03 FAILS WITH NO DATA TRANSFERRED. HALT 01
 ** PROBLEM ISOLATION AIDS **
 MAKE SURE HEADS ARE LOADED. IF DRIVE TWO INSTALLED WITH FULL CAPACITY SWAP CABLES TO DETERMINE DRIVE OR ATTACHMENT FAILING.
 ** CAUSE **
 ***NOTE SAME PROB WITH BAD CABLE
 01A A2C4 AND D4 (BOTH) W3C4 AND D4 (5406)

0397 ***** 0397 *****
 ** TROUBLE **
 5444 IPL GIVES SYSTEM RESET INDICATION. A01 GIVES HALT 100705 A03 RTN 2 CARRIAGE OSCILLATES IN 9 TO 11 TRACK SEEKS. NO DATA IS TRANSFERRED ON IPL.
 ** CAUSE **
 5410 01A A2P2 5406 01A A1P2

0398 ***** 0398 *****
 ** TROUBLE **
 5406 WONT IPL HALT 3 DURING IPL FROM CE PACK. ALSO WONT IPL FROM TAPE APLD (CASSETTE).
 ** CAUSE **
 01A A1G2

0399 ***** 0399 *****
 ** TROUBLE ** 5444 STEPPER **
 TROUBLE - ON POWER UP SEQUENCE, ACCESS GOES OUT TO 100 AND ONLY COMES BACK PART WAY TO ZERO. UNABLE TO IPL FROM DRIVE BECAUSE THE INHIBIT RETRACT LATCH WAS ACTIVE.
 CAUSE REPLACED FINE HOME PHOTOCELL. (PHOTOCELL WAS APPARENTLY NOT PUTTING OUT ENOUGH VOLTAGE TO TURN ON THE AMPLIFIER CARD B6)

0400 ***** 0400 *****
 ** TROUBLE ** 5444 **
 *** PROCESS CHECKS, IPL PROBLEMS, DATA CHECKS FROM 5444
 ** TROUBLE **
 1 PROCESS CHECKS ALU A/B DBO ON DISK IPL. NO PROCESS CHECKS WHEN CE LOADED DIAG. FROM DISK. LE HALT DURING CPU MEMORY TESTS.
 ** CAUSE **
 CABLE IN 5444 CUT BY DRIVE BELT. SPLICE AND DRESS CABLE AWAY FROM BELT.
 ** TROUBLE **
 2 DATA CHECKS. APPEARED AS EXTRA HEAD SELECT PROBLEM.
 ** CAUSE **
 DRIVE BELT RUBBED INSULATION OFF OF CABLE TO CE SWITCHES. TAPE AND DRESS CABLE AWAY FROM BELT. IF WIRE TO CE SWITCH OPENS UP, THAT HEAD WILL SELECT.
 ** TROUBLE **
 3 5444 BLOWS FUSES 201 AND 202 IN 5424.
 CAUSE*5444 DRIVE BELT CUTTING POWER CABLE TO BRUSH DRIVE MOTOR.
 ** TROUBLE **
 4 DIAGNOSTIC A03 HALT 01 (READ ID ERRORS) AND HALT 02 (SEEK ERROR). IN CE MODE, 1 TRACK SEEKS OK, 50 TRACK SEEK GOES 1 TRACK. DRIVE SEEKS IF ANY HEAD SELECTED AND TOGGLE SWITCH OPERATED.
 ** CAUSE **
 DRIVE BELT CUTTING CABLE TO CE SWITCH.

0401 ***** 0401 *****
 ** TROUBLE **
 5410 IPL PROBLEM WITH 5444, 5424 WILL IPL. DIAG. A01 WILL RUN DIAG. A03 FAIL WITH NO DATA TRANSFER
 ** CAUSE **
 REPLACE TWO DEFECTIVE CARDS IN 5444, Y GATE W1J6, W1K6

0402 ***** 0402 *****
 ** TROUBLE ** 5444
 READ IPL OR UNSAFE PROBLEM.
 ** PROBLEM ISOLATION AIDS **
 FOR ABOVE PROBLEMS THAT ARE NOT MAP LOCATED BE SURE TO CHECK OUT THE +18 AND -18 VOLT CIRCUITS (FS210 FN210) ANY DEFECTIVE PARTS IN THIS NETS COULD BE A SOURCE OF TROUBLE. NOTICE THAT BOTH +18 AN -18 GO TO THE READ PRE-AMP IN THE Z GATE. THESE VOLT AGES ALSO GO TO THE ATTACHMENT VIA THE W4 CONNECTOR AND ARE USED BY THE DATA SEPARATOR.
 NOTE... DATA SEPARATOR USES +18 AND -18 VOLTS FROM TOP DRIVE ONLY. 18 VOLTS FROM LOWER DRIVE IS TERMINATED AT FCU. SECOND DRIVE WONT READ IF TOP DRIVE HAS 18 VOLT PROBLEMS, TOP DRIVE MAY WORK IF LOWER DRIVE HAS 18 VOLT TROUBLE.
 ** CAUSE **
 REPLACE ANY BAD TRANSISTOR OR CARDS

0403 ***** 0403 *****
 ** TROUBLE ** 5444
 5406 BLANK-3 HALT ON IPL
 ** PROBLEM ISOLATION AIDS **
 LOAD DISK DIAGNOSTIC FROM TAPE ON MODEL 6 OR 5424 ON MODEL 10 RUN A03 AND GET HALT 01 (NO DATA TRANSFER) YOU CAN SWAP CABLES AND TRY DRIVE 2 IF FULL CAPACITY
 ** CAUSE **
 HEAD LOAD LINK BROKEN. HEADS NOT LOADED IS AVAILABLE LOOK AT HEAD ALIGNMENT ON ALL HEADS IF YOU SUSPECT THAT THE HEAD IS NOT LOADED.

0404 ***** 0404 *****
 ** TROUBLE ** 5406 **
 5444 IPL APPEARS TO GIVE SYSTEM RESET INDICATION. NOTHING HAPPENS, NO ERROR INDICATIONS. ALSO BLANK 0 HALTS
 ** PROBLEM ISOLATION AIDS **

RUN A01 (5406 USE APLD) ERROR MESSAGES LEAD TO LOAD AND RUN B01
RTN 01 B01 GIVES HALT 010001 OR 010033 CALL OUT W3J2 AND W3K2
NO FIX. THERE IS NO DATA TRANSFER FROM DISK, IF CORE CONTAINS
ANY DATA CPU WILL TRY TO EXECUTE AND PROCESS CHECK
FILL CORE WITH BLANKS AND NOTHING COMES OVER FROM
DISK

** CAUSE **
5410 01A A2R2
5406 01A A1R2 01A W3R2

0405 ***** 0405 ***** 0405

** TROUBLE **
5444 WONT IPL BLANK ZERO HALT. A01 DIAGNOSTIC INDICATES
FILE UNABLE TO SET TRACK CONDITION.
** CAUSE **
01A A2Q2...(W2Q2)

0406 ***** 0406 ***** 0406

** TROUBLE ** 5444
CUSTOMERS GETTING BLANK 0 AND OJ HALTS, LOGGING MISSING
ADDRESS MARKS IN ERAP.
** PROBLEM ISOLATION AIDS **
SPEED TEST A0D
** CAUSE **
DRIVE RUNNING AT WRONG SPEED, BELT RIDING ON FLANGE OF PULLEY
SPEED WAS 42MILLISEC.

0407 ***** 0407 ***** 0407

** TROUBLE ** 5410
BLANK 0 HALTS, DISK ERROR ON IPL. BLANK 1 HALTS, PERMANENT
DISK ERROR ON READ. FILE OK.
** CAUSE **
DEFECTIVE ATTACHMENT CARD, Z-W3M2. FUNCTIONAL LOGIC - RESETS
END OF CYLINDER, NRF NO RECORD FOUND.
5410 01A A2M2 5406 A1M2

0408 ***** 0408 ***** 0408

** TROUBLE ** 5444 **
BUMPER ARE PULLED OUT BECAUSE DISK IS STILL MOVING AFTER DRAW
LATCH IS OPEN.
** CAUSE **
Y-W1A6 CARD P/N5862808 BAD.

0409 ***** 0409 ***** 0409

** TROUBLE **
1 OPEN LIGHT WILL NOT COME ON WHEN 5444 IS TURNED OFF.
DRAWER IS LOCKED.
** CAUSE **
CARRIAGE PHOTOCCELL IS DIM. THE HOLDER DID NOT HAVE ENOUGH
TENSION ON THE LAMP.
** TROUBLE **
2 DRAWER WILL NOT OPEN. OPEN LIGHT FLICKERS (BLINKS)
DRAWER LOCK SOLENOID DOES NOT PICK UP. SPINDLE DRIVE MOTOR
BRAKE CIRCUIT IS ACTIVE. PULSES ON SPEED ZERO LINE.
** CAUSE **
REPLACED OPEN DIODE SHUNTING COIL OF RELAY K5.
** TROUBLE **
3 DRAWER WONT OPEN AND DRIVE MOTOR BRAKE RESISTOR R10 VERY
HOT BECAUSE SPEED ZERO IS PLUS EVEN THOUGH 5444 IS OFF.
** CAUSE **
Y-W1A6
** TROUBLE **
4 DRAWER WONT OPEN. NO OPEN LIGHT. CARTRIDGE SAFE LINE IS
PLUS BECAUSE SPEED ZERO IS PLUS. APPEARS INDEX AMPLIFIER
IS BAD BUT NEW CARD DONT FIX.
** CAUSE **

Q2 SHORTED. -18 VOLTS WAS -22. Q2 FIXED VOLTAGE AND OPEN
PROBLEM.

0410 ***** 0410 ***** 0410

** TROUBLE ** 5444
DRAWER WILL NOT OPEN AND OPEN LIGHT WILL NOT COME ON.
** CAUSE **
OPEN FILAMENT IN PC2.

0411 ***** 0411 ***** 0411

** TROUBLE **
5444 INITIALIZE TROUBLE. 5444 ASSIGNS TOO MANY ALTERNATE
TRACKS ON CUSTOMER AND CE INITIALIZE. ALSO ONE FAILURE ON
SCAN TEST.
** CAUSE **
REPLACED UPPER INDEX TRANSDUCER

0412 ***** 0412 ***** 0412

** TROUBLE ** 5444 **
FLAGS TRACKS AS BEING DEFECTIVE ON INITIALIZE. READ AND
WRITE DIAG. FAIL. A01 AND SEEK DIAG. RUN OK. INTERMITTENT
OC HALTS BUT 5444 IS NOT UNSAFE.
** CAUSE **

01A A2D4

0413 ***** 0413 ***** 0413

TROUBLE..5444 5410 DIAG A05 RT5 FAILING ...HALT 1A
HEAD SWITCHING TROUBLE ...FAILS ONLY ON DIAGNOSTICS..
ALSO FAILS ON DIAG A06..A08 ROUTINE 5
** CAUSE **

01A A1K2 (5406) 01A A2K2 (5410)

0414 ***** 0414 ***** 0414

** TROUBLE ** 5406-5410 **
FAIL DIAGNOSTIC A01 WITH THE FOLLOWING ERROR SEQUENCE.
ERROR 1 ERROR 2 ERROR 3 ERROR 4 ERROR 5
10130E 111101 121101 132103 141102
NOTE- ERROR 5 WAS NOT LISTED IN THE ERROR CHART.
** CAUSE **
DEFECTIVE 5444 FILE ATTACHMENT CARD, 01A W3K2.
(5410 A2K2, 5406 A1K2)

0415 ***** 0415 ***** 0415

** TROUBLE **
5444 LOADS CPU AND MEMORY TESTS AND RUNS. DCP DOES NOT LOAD.
5444 SEEKS TO OVERRUN AND RECALIBRATES CONTINUOUSLY. A03 GIVES
ERROR HALT A009.
** CAUSE **
CARD 01A W3G2, 5410 01A A2G2, 5406 01A A1G2, DRIVE 1

0416 ***** 0416 ***** 0416

** TROUBLE ** 5444
BOB PROGRAM ROUTINE 1 ERROR WHEN RUNNING AGAINST CE PACK.
BOB PROGRAM ERROR ROUTINE 0A WHEN RUNNING AGAINST CE PACK.
** CAUSE **
RUN AGAINST FIXED DISK OR CUSTOMER PACK

0417 ***** 0417 ***** 0417

** TROUBLE ** 5444
FAILS TO IPL, DIAG A03 FAILS ON ROUTINE 2 WITH ERROR.
MESSAGE A001 NO DATA TRANSFER
** CAUSE **
5410 ..01A A2G2 5406..01A A1G2 SWAPPING WITH F2 DID NOT HELP

TROUBLE DID NOT FOLLOW SPINDLE

0418 ***** 0418 ***** 0418

** TROUBLE ** 5406 5410
5410 A03 A001 HALT NO DATA TRANSFERRED FROM HEADS
** CAUSE **
01A A2D4 (5410) 01A A1D4 (5406) 01A W3D4

0419 ***** 0419 ***** 0419

** TROUBLE **
5406 5444 ABCD2345 HALT AFTER LOADING CPU AND MEMORY AND DCP
IF TRYING TO RUN ANY DIAGNOSTIC. DCP LOADS OK BUT AFTER
SELECTING A DIAG ABCD2345 HALT APPEARS. ALL TAPE (APL) DIAG.
WORK OK AND ALL CUSTOMER JOBS RUN
** CAUSE **
5444 HEAD ALIGNMENT INCORRECT

0420 ***** 0420 ***** 0420

5444
** TROUBLE **
HEAD SETTling ERRORS ON HI-SPEED DRIVES. DIAG A03, RTN 05
HALT A004.
CAUSE* THE LOW SPEED SENSE ADJ.(FETMM 3.7.8.2) WAS SET TO
5.5 DIVISIONS INSTEAD OF THE 6.4 CALLED OUT IN THE FETMM.

0421 ***** 0421 ***** 0421

** TROUBLE ** 5410 5444
HALT A022 WITH DIAGNOSTIC A06, CUSTOMER GETTING DATA CHECKS.
** CAUSE **
REPLACED R/W HEAD

0422 ***** 0422 ***** 0422

** TROUBLE ** 5444
WONT IPL. SAR GOES TO 0000 WHEN IPL IS DEPRESSED AND STAYS AT 0
000 WHEN IPL KEY IS RELEASED. A03 FAILS WITH HALT A001.
** CAUSE **
HEADS KNOCKED OFF-RELATCH HEADS

0423 ***** 0423 ***** 0423

** TROUBLE ** 5406-5410 **
5444 DIAG A01 HALT 13070B MAPS WONT FIND
** CAUSE **
01A A1N2 (5406) 01A A2N2 (5410)
01A A2N2

0424 ***** 0424 ***** 0424

** TROUBLE ** 5410
WHEN RUNNING SEEK TEST A0D ON A TWO 5444 DRIVE SYSTEM, IT WOULD
GIVE A SEEK ERROR HALT 88 WHEN TESTING DRIVE 2.
** PROBLEM ISOLATION AIDS **
SELECTING A SEEK ON BOTH DRIVES AT THE SAME TIME.
** CAUSE **
01A A2S2

0425 ***** 0425 ***** 0425

** TROUBLE ** 5444 **
.DRIVE MOTOR RUNS SLOW AND OVERHEATS
** CAUSE **
CAPACITOR C1 SHORTED. LOGIC PAGE ZA200 OR ZA400.
P/N2283004 .

0426 ***** 0426 ***** 0426

** TROUBLE **
5444 WILL NOT COME READY. THE DRIVE TRIES TO GO AND
MAKES IT SOME TIME. K1 IS PICKED AND C1 CAPACITOR METERS
OUT OK.

** PROBLEM ISOLATION AIDS **
METER VOLTAGE ON MOTOR BLUE TO YELLOW 208/230
METER SHOULD READ 300 VOLTS AFTER THE MOTOR STARTS. MAKE SURE THAT
YOU DO NOT HAVE A BIND IN THE REMOVABLE
PACK OR IN THE DRIVE PULLEY. ANY SMALL BIND
WILL CAUSE THE MOTOR NOT TO START UP. DO NOT
CONFUSE THE NORMAL FEEDBACK TO PROVIDE BRAKE
TO THE MOTOR. CHECK FOR BINDS WITH POWER OFF.
CAUSE
THE DRIVE MOTOR WAS DEFECTIVE.

0427 ***** 0427 ***** 0427

** TROUBLE **
5444 DRAWER WILL NOT OPEN. TRANSDUCER CARDS AND DRAWER
LATCH CARD OK.
** PROBLEM ISOLATION AIDS **
SCOPE TRANSDUCER GROUND FOR NOISE (200 UV PEAK TO PEAK).
** CAUSE **
LOOSE SCREWS ON AC TERMINAL BLOCK.

0428 ***** 0428 ***** 0428

** TROUBLE **
5444 HEADS CRASH INTERMITTENTLY.
** CAUSE **
THE CARRIAGE CABLE CLAMP (REF. 5444 THEORY-MAINTENANCE MANUAL
FORM NUMBER SY33-0029-1 PAGE 3-55) WAS NOT INSTALLED WHEN
THE SYSTEM WAS INSTALLED. THE HEAD CABLES WOULD GET CAUGHT
UNDER THE TORSION SPRINGS CAUSING THE HEAD TO CRASH.

0429 ***** 0429 ***** 0429

** TROUBLE ** 5444
HEAD CRASHES, FAILS TO LOAD OR OC HALTS
** PROBLEM ISOLATION AIDS **
CHECK TORSION RODS FOR BINDING IN BUSHING
** CAUSE **
GENTLY TAP OUT ROD, CLEAN ROD AND BUSHING, CLEAN HOLE
IN CASTING, REINSERT ROD BEING CAREFUL THAT THERE IS
NO FOREIGN SUBSTANCE ON SMALL PART OF ROD.

0430 ***** 0430 ***** 0430

** TROUBLE ** 5444
BLANK 1 OR BLANK 0 HALTS.HEADS GOING OUT OF ALIGNMENT EVERY
WEEK OR SO. HEAD
** CAUSE **
REPLACED LEAD SCREW THRUST BEARING

0431 ***** 0431 ***** 0431

** TROUBLE ** 5444 STEPPER **
UNABLE TO ADJUST FEEDBACK DELAY AS PER FETMM 3-42
STEP 3.7.8. STEPPER MOTOR RUNNING SLOW.
CAUSE Q8 NOT TURNING ON WHICH MEANS STEPPER MOTOR WAS
RUNNING ON ONLY DETENT CURRENT. Q8 SHORTED FROM
BASE TO EMITTER AND BLEW THE X-GATE CARD WITH IT.
** TROUBLE ** 5444 STEPPER DRIVE ADJUSTMENT **

0432 ***** 0432 ***** 0432

** TROUBLE ** 5444
SEEK CHECK & STOPPING TO SOON ON HIGH SPEED SEEKS ONLY.
NO PROBLEM AT REGULAR SPEED.
** PROBLEM ISOLATION AIDS **

AOE & BOB TESTS.
** CAUSE **
SCRATCH ON ENCODER. REPLACED STEPPER MOTOR & ENCODER DISK.

0433 ***** 0433 ***** 0433

5444 STEPPER
IF AFTER CONVERSION OF 5444 TO HIGH SPEED PERFORMANCE
YOU GET FAILURES ON DIAGNOSTIC A03, ROUTINE 5, IGNORE THIS
SINCE THIS SETTLING IS NORMAL FOR HIGH PERFORMANCE DRIVES.
ROUTINE 05 SHOULD BE BYPASSED ON A 5410 WITH HIGH PERFORMANCE
DRIVES.
ROUTINE 5 IS AUTOMATICALLY BYPASSED IF UDT IS CORRECT

0434 ***** 0434 ***** 0434

** TROUBLE ** 5444 FRICTION **
HEAD LOAD LATCH TRIPPING ON POWER OFF.
** CAUSE **
CHECK FOR BIND IN HEAD LOAD SOLENOID OR LEVER OR HEAD LOAD
CABLE.

0435 ***** 0435 ***** 0435

** TROUBLE **
CHATTERING VOICE COIL ON 1 TRACK SEEKS.
** CAUSE **
DRIVE TRANSISTER TROUBLE.

0436 ***** 0436 ***** 0436

** TROUBLE ** 5444 **
NOT GETTING READY. ACCESS GOES TO TRACK 100, DOES NOT
REVERSE SEEK.
** PROBLEM ISOLATION AIDS **
ENCODER LIGHTS DIM.
** CAUSE **
CABLE FROM Y GATE (WIN7) GROUNDED ON MOTOR PULLEY.

0437 ***** 0437 ***** 0437

** TROUBLE ** 5424
DRAWER WILL NOT LOCK CN A START UP SEQUENCE. DRIVE
WILL READY AND DIAGNOSTIC PROGRAMS AND CUSTOMER JOBS RUN OK.
** PROBLEM ISOLATION AIDS **
THE LINE CALLED 'DISK DRIVE X DRAWER RELEASE' HAD A VOLTAGE OF
-4 VOLTS ON IT WHEN IT SHOULD HAVE HAD APPROX .8 VOLT.
** CAUSE **
THE TRANSISTOR ON THE CARD AT THE LATCH WAS SHORTED. NOTE THIS
WAS A CARD TO DISK CONVERSION AND PROBLEM WAS ON BOTH DRIVES
IT IS SUSPECTED THAT THERE WAS A WIRING ERROR
IN THE CABLE HOOK DURING FIRST POWER ON. REPLACING THE
CARD IN BOTH LATCH ASSEMBLIES TOOK CARE OF THE PROBLEM.

0438 ***** 0438 ***** 0438

** TROUBLE ** 5424-5444 **
1 DRAWER LOCK SOLENOID CHATTERS WHILE FILE IS SITTING
NOT READY WITH OPEN LIGHT ON.
** CAUSE **
X-GATE CARD BAD CAUSING CARTRIDGE SAFE LINE TO DROP.
** TROUBLE **
2 DRAWER LOCK CHATTERS, 5444 DROPS READY.
** CAUSE **
STEPPER DRIVE Q4 AND Q6 NOT SOLDERED. CHECK Q3 THRU Q8.
UNSOLDERED OR POORLY SOLDERED TRANSISTORS WILL CAUSE

0439 ***** 0439 ***** 0439

5444 DISK F1 DAMAGE
THE PHYSICAL DISK (RECORDING SURFACE) CAN BE REMOVED FROM
A REMOVABLE PACK AND SUBSTITUTED FOR FIXED DISK IN A
EMERGENCY SITUATION.

0440 ***** 0440 ***** 0440

5444 STEPPER MOTOR REPLACEMENT
THERE IS A POSSIBILITY THAT WHEN THE STEPPER MOTOR
IS REPLACED THE MISMATCH BETWEEN IT AND THE PREVIOUS
FEEDBACK DELAY SETTING WILL CAUSE F1 TO BLOW. REFER
TO 5444 HARD COPY SA 023.

0441 ***** 0441 ***** 0441

** TROUBLE **
5444 FAILS TO SENSE OVERRUN ON A03 ROUTINE 4. WAS FAILING
BECAUSE ACCESS WAS SEEKING SHORT.
** PROBLEM ISOLATION AIDS **
OBSERVE ACCESS WHILE DOING 50 TRACK SEEKS FROM CE PANEL
AND SEE IF ACCESS IS SEEKING 50 TRACKS. REFER TO 5444 TIP 077
** CAUSE **
Q8 TRANSISTOR BLOWN. WAS A TYPE 279 INSTEAD OF A 369. TO
TEST IF Q8 IS BAD METER ACROSS THE TRANSISTOR ON VOLTAGE
SCALE. THERE SHOULD BE 5 VOLTS OR LESS ACROSS THE TRANSISTOR
WHEN IT IS CONDUCTING.

0442 ***** 0442 ***** 0442

** TROUBLE **
5444 5410 5406 SPEED TOO SLOW. DIAGNOSTIC A00 (SPEED TEST)
GIVES PRINT OUT BUT SCOPE PROCEDURE SHOWS SPEED IS OK
** CAUSE **
01A B3T2 DEFECTIVE ATTACHMENT CLOCK CARD OUT OF SYNC
SPEED OF DRIVE WAS OK

0443 ***** 0443 ***** 0443

** TROUBLE ** 5444
SEEK CHECKS NEAR CYLINDER 200.
DIAGNOSTIC A03 HALT 02 RT 04
COULD SHOW UP AFTER 100 TO 200 MODEL CHANGE.
** CAUSE **
FLAG OUT OF ADJUSTMENT

0444 ***** 0444 ***** 0444

** TROUBLE ** 5444
A01 TRACK CONDITION CHECK
NEW DRIVE B/M INSTALL. A01 FAILED WITH HALTS 111101
121101 141901 151200. A03 AND A0E FAILED ALSO.
** CAUSE **
01A A2T2

0445 ***** 0445 ***** 0445

** TROUBLE ** 5444 **
UNABLE TO GET CORRECT RESISTANCE READING FROM FILE CASTING TO
CABINET PER INSTALLATION INSTRUCTIONS.
** CAUSE **
FOUND AC TO DC GROUND CAUSED BY BRUSH MOTOR TO CASTING SHORT.
NOTE***MAKE SURE THE CABLES ARE DISCONNECTED FROM CPU, 5410

0446 ***** 0446 ***** 0446

** TROUBLE ** 5410
LOST OR MISSING LCA CABLE.
** CAUSE **
THE PART NUMBER FOR THE CABLE IS P/N7369713.

0447 ***** 0447 ***** 0447

** TROUBLE ** 5406-5213 **

POOR PRINT QUALITY AFTER INSTALLING PRINT ENHANCEMENT
FEATURE.

** CAUSE **
STONE PRINT WIRES.

0448 ***** 0448 ***** 0448

** TROUBLE **
5213 PRINTS SINGLE DOT HANGS IN RIGHT MARGIN. AFTER INSTALLING
ENHANCED PRINT PROBLEM OCCURRED.
** CAUSE **

01A A2H4

0449 ***** 0449 ***** 0449

** TROUBLE **
5406 5213 ENHANCEMENT FEATURE MACHINE SPEED WILL VARY
CAN NOT MAINTAIN ADJUSTMENT
** CAUSE **

01A A2P2

NOTE***SPEED PROBLEM NEW SYSTEM RUNNING E86 SPEED 85 CPM

S229-8044-00

PRINTED IN U.S.A.