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RT02A, D0006
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TC58, C0012
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TU56, 00072
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TC08, C0026
TC58, C0012
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TU56, 00072
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VR14, 00032
VR20, 00004
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A230-YD, D0001
A230-YE, D0001
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B683, B0002
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G180, C0006
G233, 00008
G785, C0002
G836, A0008
G848, B008B
G859, 00003
G900, 00002
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M7001, B006A
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M7700, C0006
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RS08-TA, 00007
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TC01, 00001
TC08, C0026
TC58, C0012
TU20, C0024
TU55, 00019
TU56, 00072
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VR14, 00032
VR20, 00004
VT01, 00007
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MODULES

A225, C0010
A230, D0001
A230-YA, D0001
A230-YC, D0001
A230-YD, D0001
A230-YE, D0001
A633, B0002
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A801, B0004
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G836, A0008
G848, B008B
G859, 00003
G860, B0001
G900, 00002
G918, 00003
G933, B0006
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A230-YA, D0001
A230-YC, D0001
A230-YD, D0001
A230-YE, D0001
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G938, B0006
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M711, C0005
M715, 00008
M763, B0002
M769, 0003A
M892, 00003
M895, B0002
M7001, D005A
M7003, 00004
M7004, B0004
M7014, B0001
M7390, E002A
M7700, C0006
M7711, C0007
M7713, C0004
M7715, C0004
M7761, D0011
M7910, 00004
W682, B0004
W684, 00006

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MAYNARD, MASSACHUSETTS

EC DEC-O-LOG Engineering Change Order Log

LINC–8P

LINC-8 Processor

PROCESSOR TYPE LINC-8

LINC8P-C0006 CODE: F ML: N WL: K

MAY-71 - PROBLEM: When the LINC processor is stopped or interrupted there is an extra break cycle used by the LINC . This break cycle is not inhibited from going out to external devices.

CORRECTION: Disable break output for about 2 msec while this cycle is taking place. An R302 is added in slot PH32 and an R107 in slot PH33.

NOTE: FCO LINC8L-C0006 is a prerequisite to this FCO.

In-plant effectivity -03 rework

Field effectivity -Retrofit all LINC-8P's with three cycle break devices.

(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

LINC8M-E0007 CODE: F WL: J

JAN-73 - PROBLEM 1: MEMORY STROBE ENABLE is not settled when the W300 delay pulse fires for STROBE .
CORRECTION 1: Use the delay of the B360 before looking at MEMORY STROBE ENABLE .
PROBLEM 2: Noise on read/write lines.
CORRECTION 2: Add a 4.7 ohm resistor to reduce noise.
PROBLEM 3: W300's are noise sensitive.
CORRECTION 3: Add 3.3K ohms to +10V to reduce sensitivity.
PROBLEM 4: Noise and loading of MEM START pulse by READ 1 circuit.
CORRECTION 4: Isolate MEM START from READ .
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all LINC-8's.
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $. 60) The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -FCO/Prints And Parts)

LINC8M-C0008 CODE: F WL: K

APR-73 - PROBLEM: The DW8-E will not work on a LINC-8 because BT2A does not occur at MEM START time of the cycle following an IOT instruction.
CORRECTION: Send B MEM START out on the I/O Bus in place of BT2A. The ADD/DELETE's are as follows: DELETE MF36H to MD30R and ADD MF36E to MD30R.

NOTE 1: All system diagnostics should be run before and after this FCO is installed to assure no latency problems.

NOTE 2: This FCO creates LINC8-0 ML revision "D ".
In-plant effectivity -03 retrofit only to LINC-8's which will have a DW8-E installed.
Field effectivity -Retrofit all LINC-8's with DW8-E's
(Time To Install And Test .3 Hour.) (Kit Contents -FCO/Prints)

LINC8L-C0006 CODE: F ML: N WL: M

MAY-71 - PROBLEM 1: When a LINC-8 contains a DM01 and the LINC-DF32 Extended Memory option, the extended address levels, which are asserted unless an external break is taking place, cause a **MEM START** in field 7 when the LINC break is finished or interrupted. If this memory is non-existent, there will be no **MEM DONE** pulse and thus no **PC** to **MA** . The first PDP-8 instruction will, thus, be from the last LINC address left in the **MA** .

CORRECTION 1: Change the signal that strobes the three cycle device's extended address bits from **ENABLE 8 ADDRESS** to **ENABLE PDP-8** so that the extended address levels are not looked at unless an external break is taking place.

CORRECTION 2: Add needed signals to LH40.

In-plant effectivity -03 rework

Field effectivity -Retrofit all LINC-8's with three cycle break devices

(Time To Install And Test .8 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

E C DEC-O-LOG Engineering Change Order Log

5409057

PDP-8/E Console Board

PROCESSOR TYPE PDP-8/E

5409057-00006 CODE: M CS: J
FEB-72 - PROBLEM: Field Service Problem Report #272 states that the nylon screws holding the glass support bracket shear off in shipment.
CORRECTION: Replace with metal screws.
In-plant effectivity -02 phase-in

5409057-D0007 CODE: F CS: K
MAR-72 - PROBLEM: The +3 volt run of etch is incorrect on board.
CORRECTION: Add one jumper wire and make one etch cut.
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all etch revision "F " 5409057's in KC8/E's.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

5409057-00008 CODE: M CS: L
JUL-72 - PROBLEM 1: Two "V " holes for mounting switch S1 are incorrect size.
CORRECTION 1: Change the two "V " holes to "x " holes (. 128 .
PROBLEM 2: Two "A " holes on drawing E-IA-54009056-0-0 labeled incorrectly.
CORRECTION 2: Relabel the two "A " holes to "y " holes.
In-plant effectivity -02 phase-in

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MAYNARD, MASSACHUSETTS

E C DEC-O-LOG Engineering Change Order Log

5409668

PDP-8/E Front Panel

PROCESSOR TYPE PDP-8/E

5409668-00001 CODE: D CS: D
NOV-71 - PROBLEM: There are no means of securing light emitting diodes to the board.
CORRECTION: Relayout the board to accept LED holders, DEC #12-10795.
In-plant effectivity -02 phase-in

5409668-00002 CODE: D CS: E
JAN-72 - CORRECTION 1: Updates the Circuit Schematic to agree with present board design
PROBLEM 2: Signal **LDD ADD ENABLE** does not enable the data path properly.
CORRECTION 2: Change the function of the **LDD ADD ENABLE** line on the board.

NOTE: See continuation supplement ECO 5409668-0002A.
In-plant effectivity -03 rework immediately

5409668-0002A CODE: D
JAN-72 - PROBLEM: Switch bounce from **LOAD ADDRESS** switch may cause an incorrect address to be loaded.
CORRECTION: Add a 1K resistor and a 1 UFD capacitor as an integrator to E5 pin 7. Change the value of C17 to 68 UFD and R57 to 7.5K. Jumper E8 pin 11 to E8 pin 9 and not to E9 pin 8.
In-plant effectivity -Unchanged

5409668-00003 CODE: P CS: F
MAR-72 - CORRECTION: Corrects errors in documentation of the front panel control board.
In-plant effectivity -Documentation change only

5409668-B0004 CODE: F CS: H
APR-72 - PROBLEM: DEPOSIT and EXAMINE keys with high switch bounce cause the computer to go into the RUN state.
CORRECTION: Add one-shots to EXAMINE and DEPOSIT circuits.

NOTE: See correction supplement FCO 5409668-B004A and FCO 5409668-D0005
In-plant effectivity -03 rework immediately
Field effectivity -Replace all 5409668 boards in the field with updated boards.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

5409668-B004A CODE: F CS: H1
SEP-72 - PROBLEM: ECO 5409668-B0004 calls-out the addition of two capacitors, two resistors and one IC. The caps are physically located in the wrong area on the board, causing intermittent problems.
CORRECTION: Replace and relocate the capacitors.
In-plant effectivity -03 rework as of 9/29/72
Field effectivity -Retrofit all 5409668's which exhibit intermittent switch operation.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

5409668-D0005 CODE: F CS: J
APR-72 - PROBLEM 1: Pins on the #7440 are incorrect in FCO 5409668-B0004.
CORRECTION 1: Correct prints and model to reflect the proper pin numbers.
PROBLEM 2: FCO 5409668-B0004 does not completely fix the problem. DEPOSIT and EXAMINE sometimes cause the computer to go into the RUN state.
CORRECTION 2: Change capacitor C17 from 68 UFD to 47 UFD.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all front panels that have FCO 5409668-B0004.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

5409668-00006 CODE: D CS: K
MAY-72 - PROBLEM 1: DEPOSIT and EXAMINE keys with high switch bounce sometimes cause computer to enter the RUN state.
CORRECTION 1: Re-design the key logic to latch state of switches.
PROBLEM 2: Some users desire switch on -15 and not panel locked; others want the switch panel locked.
CORRECTION 2: Add split lugs to allow user a choice.

NOTE: See supplement 5409668-0006A.
In-plant effectivity -02 phase-in

5409668-0006A CODE: D
AUG-72 - PROBLEM 1: Nuts on light emitting diode, LED, holders show the plexiglas panels.
CORRECTION 1: Replace with self-tapping screws.
PROBLEM 2: Only one type of LED, #11-10825, is called out on the prints.
CORRECTION 2: Add second LED, #11-10864, to the print set.
In-plant effectivity -02 phase-in

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E C DEC-O-LOG Engineering Change Order Log

7408244

KC8-EA Control Panel

PROCESSOR TYPE PDP-8/E

7408244-00001 CODE: M
JAN-73 - PROBLEM: PDP-8/E control panel glass does not align properly with the console board.
CORRECTION: Drop all switch cut-outs and indicator holes on the control panel 0.125 inch.
In-plant effectivity -02 all panels fabricated after January 29, 1973

7408244-00002 CODE: D
MAR-73 - PROBLEM: Silk screens do not line up with cut outs.
CORRECTION: Redimension front panel drawing and lower silk screen by 0.125 inch.
In-plant effectivity -02 phase-in all panels silk screened after April 1, 1973.

7408244-C0003 CODE: DF
MAY-73 - PROBLEM 1: The PDP-8/E Front Panel Console Board rotary switch is being changed by ECO 5409057-00010 causing the switch position indicator lines on the Plexiglas panel to be out of alignment.
CORRECTION 1: Correct artwork to align with new switch; will be the same as PDP-8/M.
PROBLEM 2: The block over the run light is off by 0.06 inch.
CORRECTION 2: Move 0.06 inch to the right.
PROBLEM 3: Artwork on some screens does not match the IA drawing.
CORRECTION 3: Make corrections so that silk screens conform to drawing D-IA-7408244-0-0.
In-plant effectivity -02 * -#74-08244 Plexiglas control panels dated June 15, 1973 or later must be used with #54-09057 etch revision "J " console boards which include the new rotary switch, #12-10627. These panels may not be used with earlier revision console boards.
Field effectivity -Install new console panel Plexiglas when console module with new status switch is installed.
(Time To Install And Test N/A) (Documentation $ 5.00 , Parts $ 39.00 , DEC Labor $ N/A) (Kit Contents -FCO/Prints And Parts)

8E-00036 CODE: P ML: M
JUL-71 - PROBLEM: There is no power wiring drawing with PDP-8/E print sets.
CORRECTION: Add power wiring drawing D-IC-PDP8/E-0-10 to all future PDP-8/E print sets. This drawing has to be added to the PDP8/E Master Drawing List and Drawing Index.
In-plant effectivity -06 documentation change only.

8E-00037 CODE: P ML: N
JUL-71 - PROBLEM: The engineering specification, concerning recommended module assignments, provides only one slot for the KE8/E option. This option requires two adjacent slots, located between the M833 and the M8310.
CORRECTION: Reorder RECOMMENDED OMNIBUS MODULE ASSIGNMENTS specification to provide two locations for the KE8/E option. Also, add a zero suffix to the M834 module which appears before corrections.
In-plant effectivity -06 documentation change only.

8E-00038 CODE: P
AUG-71 - PROBLEM: Wrong color on UL decal print.
CORRECTION:CHANGE To white on clear.
In-plant effectivity -06 documentation phase-in.

8E-00039 CODE: D ML: P
AUG-71 - PROBLEM: High Quality power supply needed when LAB8/E options are added to a PDP-8/E or LAB8/E system.
CORRECTION: Add HQ power supplies as specified by this ECO.

NOTE: This ECO must be implemented in conjunction with ECO LAB8/E-00007.
In-plant effectivity -01 phase-in

8E-00040 CODE: M
SEP-71 - PROBLEM: Slide, chassis track D-MD-74-08861 revision "A ", has two "A " holes in wrong locations.
CORRECTION: Correct drawing by showing spring catch on side facing up.
In-plant effectivity -03 rework immediately

8E-00041 CODE: P ML: R
SEP-71 - PROBLEM: Master Drawing List for PDP-8/E incorrect.
CORRECTION: Adds two drawings and deletes one.
In-plant effectivity -06 documentation change only

8E-00042 CODE: P ML: S
OCT-71 - PROBLEM: LAB8/E software is not documented as part of a software list.
CORRECTION: Add LAB8/E Software List to drawing A-SL-PDP8/E-0-3 .
In-plant effectivity -06 documentation change only.

8E-00043 CODE: P
NOV-71 - PROBLEM 1: Drawing C-SS-7408327-0-2 should not include the word "CORPORATION ".
CORRECTION 1: Remove the word "CORPORATION " and the period from the silk screen.
PROBLEM 2: Drawing C-SS-7408244-0-5 should not include the word "CORPORATION ".
CORRECTION 2: Remove the word "CORPORATION " and the period from the silk screen.
In-plant effectivity -06 documentation change only .

8E-00044 CODE: P
NOV-71 - PROBLEM: Drawing C-SS-7409162-0-1 does not reflect latest ECO to the PDP-8/E panel screen and is improperly documented.
CORRECTION: Change drawing C-SS-7409162-0-1 to drawing C-SS-7408244-0-6 .
In-plant effectivity -06 documentation change only.

8E-00045 CODE: P
NOV-71 - PROBLEM: Drawing C-SS-7409163-0-1 is improperly documented.
CORRECTION: Change drawing C-SS-7409163-0-1 to drawing C-SS-7408327-0-3 .
In-plant effectivity -06 documentation change only .

8E-00046 CODE: P
NOV-71 - PROBLEM: Drawing C-SS-7408975-0-1 is improperly documented and does not reflect the latest ECO to the PDP-8/E panel screen.
CORRECTION: Change drawing C-SS-7408975-0-1 to drawing C-SS-7408244-0-7

In-plant effectivity -06 documentation change only.

8E-00047 CODE: P
NOV-71 - PROBLEM: Drawing C-SS-7408976-0-1 is improperly documented.
CORRECTION: Change drawing C-SS-7408976-0-1 to drawing C-SS-7408327-0-4 .
In-plant effectivity -06 documentation change only.

8E-00048 CODE: P
NOV-71 - PROBLEM: Customer variation prints do not call out all variations of PDP-8/E panels and inlays.
CORRECTION: Add variations as defined in drawing A-CV-PDP8-E-7 .
In-plant effectivity -06 documentation change only

8E-00049 CODE: P ML: T
NOV-71 - CORRECTION: Corrects errors in the Timing Diagram, Flow Diagram, and Master Drawing List.
In-plant effectivity -06 documentation change only.

8E-00050 CODE: P
NOV-71 - PROBLEM: There is no longer a need for drop testing the PDP-8/E.
CORRECTION: Eliminated the Mechanical Shock Test from PDP-8/E test procedure.
In-plant effectivity -06 documentation change only.

8E-00051 CODE: P
DEC-71 - CORRECTION: Create a logo for TYPESET 8/E systems.
In-plant effectivity -06 documentation change

8E-00052 CODE: P ML: U
NOV-71 - PROBLEM: The Master Drawing List and Drawing Index for PDP-8/E are incorrect.
CORRECTION: A new cable for the M8650 TTY control and a new timing generator, M8330, are included in the print updating.
In-plant effectivity -06 documentation change

8E-C0053 CODE: F ML: V
DEC-71 - PROBLEM 1: Power wiring for BA8XX is wired so that when power is applied to the PDP-8/E, the BA8XX power is delayed because of the power control.
CORRECTION 1: Rewire according to this fco; power to the BA8XX bypasses the power control.
PROBLEM 2: 230V systems have PDP-8/E power to the wrong side of the breaker.
CORRECTION 2: Rewire power according to this FCO using the other side of the breaker.
PROBLEM 3: Print error.
CORRECTION 3: Change 230V to 115V for fans.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all PDP-8/E's with BA8XX expander box.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

8E-00054 CODE: P ML: W
DEC-71 - PROBLEM: Incorrect module numbers on Recommended Omnibus Module Assignments drawing, A-SP-PDP8/E-0-4 .
CORRECTION: Change M833 to M8330, M835 to M8350, and M832 to M8320.
In-plant effectivity -06 documentation change only.

8E-00055 CODE: P
JAN-72 - PROBLEM: The Master Drawing Lists for the KA8/E, KK8/E, KL8/E, KM8/E, KP8/E and MM8/E do not indicate that they are used on the PDP-8/M.
CORRECTION: Add the PDP-8/M to the "USED ON OPTIONS " lists of the Master Drawing Lists.
In-plant effectivity -06 documentation change only

8E-00056 CODE: P ML: Y
JAN-72 - PROBLEM: There are no option power requirements in the PDP-8/E print set.
CORRECTION: Add option power requirements to print set.
In-plant effectivity -06 documentation change only.

8E-00057 CODE: P ML: Z
FEB-72 - PROBLEM: PDP-8/E Option Configuration drawing, E-AR-PDP8/E-0-2 , is outdated.
CORRECTION: Obsolete and replace with new Option Arrangement drawing, E-AR-PDP8M-0-1 .
In-plant effectivity -06 documentation change only.

8E-00058 CODE: M
MAR-72 - PROBLEM: After dimple on chassis slide is drilled out with a #38 drill, 0.101 diameter, there is still part of the dimple left which binds on the slide.
CORRECTION: Change Note #2 to indicate the use of a 0.125 diameter drill.
In-plant effectivity -02 phase-in

8E-00059 CODE: P ML: AA
MAR-72 - PROBLEM: PDP-8/E Software List is incorrect.
CORRECTION: Update and correct print A-SL-PDP-8E-0-3 .
In-plant effectivity -06 documentation change only

8E-00060 CODE: P ML: AB
APR-72 - PROBLEM: Drawing A-ML-H724-0 was obsoleted from the PDP-8/E Master Drawing List and the H724 power supply prints were not added.
CORRECTION: The H724 power supply prints are to be added to the PDP-8/E Master Drawing List and A-ML-H724-0 is to be deleted.
In-plant effectivity -06 documentation change only.

8E-00061 CODE: P
JUN-72 - PROBLEM: Too many PDP-8/E OMNIBUS assemblies being scrapped due to inspection rejections.
CORRECTION: Change procedure, paragraph 2.1.1. 2/2.8.7/ADD 2.8.9 to make requirements for protrusions of pins through solder on circuit board less restrictive. Changes acceptance and repair criteria on damage to connector blocks.
In-plant effectivity -Documentation change

8E-00062 CODE: P ML: AC
JUN-72 - PROBLEM: Field Service requests that a note be added to the recommended OMNIBUS module assignment.
CORRECTION: Add the note to the M8330 specification print which reads as follows: "M8330 timing board, always after control panel ".
In-plant effectivity -Documentation change only

8E-00063 CODE: M ML: AD
DEC-72 - PROBLEM 1: Strain relief is attached to top cover; when cover is removed, cables are not being held.
CORRECTION 1: Delete strain relief from cover and add new strain relief #74-10738 and bracket #74-10739 which mount on the H724 Power Supply chassis.
PROBLEM 2: Cable clamp on super cover being used improperly.
CORRECTION 2: Add views and notes to Unit Assembly drawing showing installation of super cover and cables.
In-plant effectivity -Break-in no later than March 1, 1973.

8E-00064 CODE: M
DEC-72 - PROBLEM 1: Captive screws in super cover too long.
CORRECTION 1: Add metal strip to cover to act as a spacer.
PROBLEM 2: Inserts in chassis work loose or strip when unit is lifted by the super cover.
CORRECTION 2: Add four more captive screws to mount the super cover.
In-plant effectivity -Break-in no later than January 15, 1973

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ECO DEC-O-LOG Engineering Change Order Log

PDP-8/M

8/E In Short Box With KC8/M Console

PROCESSOR TYPE PDP-8/M

PDP8/M-00001 CODE: P
AUG-71 - PROBLEM: No cabinet logo for the PDP-8/M.
CORRECTION: Add PDP-8/M variation to the 74-07936 logo drawing.
In-plant effectivity -Documentation change

PDP8/M-00002 CODE: M
NOV-71 - CORRECTION: Adds extra holes in chassis slide so it will fit on PDP-8/M.

NOTE: ECO PDP8M-00004 is supplemental to this ECO.
In-plant effectivity -06 phase-in

PDP8/M-00003 CODE: P
NOV-71 - PROBLEM 1: Wrong color panel logo for PDP-8/M.
CORRECTION 1: Change colors.
PROBLEM 2: No blank panel logo for PDP-8/M.
CORRECTION 2: Add blank panel logo.
In-plant effectivity -06 documentation change

PDP8/M-00004 CODE: M
NOV-71 - PROBLEM: ECO PDP8M-00002 called out wrong rework code (chassis slides, 7408861 .
CORRECTION: Change rework code to 03, rework immediately.

NOTE: This is a supplement to ECO PDP8M-00002.
In-plant effectivity -03 rework immediately

PDP8/M-00005 CODE: P
DEC-71 - CORRECTION: Correction to number shown on the Micro Switch Harness print C-IA-7008674-0-0 .
In-plant effectivity -06 documentation change only

PDP8/M-00006 CODE: P
DEC-71 - CORRECTION: Add reference dimension missing from the 74-08861 track drawing.
In-plant effectivity -06 documentation change only

PDP8/M-00007 CODE: P ML: A
FEB-72 - PROBLEM 1: The PDP-8/M Drawing Directory was created before DEC Standard 024 was released and does not conform to this Standard.
CORRECTION 1: Update the Drawing Directory in accordance with DEC Standard 024.
PROBLEM 2: No PDP-8/M accessory list in print set.
CORRECTION 2: Include the Accessory List A-AL-PDP8M-0-6 in the print set.
In-plant effectivity -Documentation change only

PDP8/M-00008 CODE: P
FEB-72 - PROBLEM: PDP-8/M fans noisy and expensive.
CORRECTION: Replace with DEC #12-05033.
In-plant effectivity -06 documentation change

PDP8/M-00009 CODE: M
FEB-72 - PROBLEM 1: PDP-8/M power supply chassis (7409376) transformer mounting holes too small and wrong inserts called out.
CORRECTION 1: Increase transformer mounting hole size and call out current inserts.
PROBLEM 2: PDP-8/M chassis (7409379) lip around top too wide and some tolerances are too tight.
CORRECTION 2: Reduce lip dimension and correct tolerances.
PROBLEM 3: PDP-8/M cover (6409380) tolerance too tight.
CORRECTION 3: Correct tolerance.
PROBLEM 4: PDP-8/M cover (7409380) tolerance too tight.
CORRECTION 4: Increase opening size from 2.00 to 2.25.
In-plant effectivity -02 phase in

PDP8M-00010 CODE: D
MAR-72 - CORRECTION: Make necesary changes to several prints.
In-plant effectivity -06 documentation change only

PDP8/M-B0011 CODE: F
MAR-72 - PROBLEM: AC noise was causing problems with power fail.
CORRECTION: Place a .02 UFD capacitor (DEC 10-10767) across each fan.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all PDP-8/M's shipped in january and february 1972.
(Time To Install And Test -1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PDP8/M-00012 CODE: M
MAY-72 - PROBLEM 1: Fab problem in punching obround slots on PDP-8/M chassis.
CORRECTION 1: Make corrections as defined in the revised IA , Inseparable Assembly drawing..
PROBLEM 2: Support bracket shows up behind silk screened panel.
CORRECTION 2: Change finish specifications to black paint (9200260-94 .
In-plant effectivity -02 phase-in

PDP8/M-D0013 CODE: F ML: B
JUL-72 - PROBLEM 1: Documentation errors in the PDP-8/M print set.
CORRECTION 1: Make corrections to the documentation.
PROBLEM 2: Switch bounce on the AC power switch affects machines with the Power Fail option causing memory locations to be modified.
CORRECTION 2: Add a capacitor (2X.02P.1KV) across the switch.
In-plant effectivity -Rework immediately
Field effectivity -All PDP-8/M with a power fail option
(Time To Install And Test 1.3 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PDP8/M-B0014 CODE: F
SEP-72 - PROBLEM: Potential shock hazard. Lack of ground continuity between power supply and PDP-8/M chassis when power supply is removed from chassis.
CORRECTION: Add a fifteen inch length of #18 AWG black stranded Teflon insulated wire from solder lug on right rear screw of power supply transformer to grounding lug on chassis by power input box.

NOTE: See correction supplement PDP8/M-B014A.
In-plant effectivity -Retrofit no later than 10/2/72.
Field effectivity -Retrofit all 7008714 power supplies in PDP-16/M PDP-8/M and PDP-8/F on a **NEXT SERVICE CALL** basis.
(Time To Install And Test .2 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) Supplement FCO PDP8/M-B014A will also be included in the kit.

PDP8/M-B014A CODE: F
OCT-72 - PROBLEM: FCO PDP8/M-B0014 calls out #18 AWG black stranded Teflon insulated wire. Digital does not use black wire or Teleflon insulation for a chassis ground.
CORRECTION: Remove the word Telflon form FCO PDP8/M-B0014 and change part description on print to green instead of black.
In-plant effectivity -06 documentation change
Field effectivity -Unchanged

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ECO DEC-O-LOG Engineering Change Order Log

5409668

PDP-8/F and PDP-8/M Front Panel

PROCESSOR TYPE PDP-8/F and PDP-8/M

5409668-00001 CODE: D CS: D
NOV-71 - PROBLEM: There are no means of securing light emitting diodes to the board.
CORRECTION: Relayout the board to accept LED holders, DEC #12-10795.
In-plant effectivity -02 phase-in

5409668-00002 CODE: D CS: E
JAN-72 - CORRECTION 1: Updates the Circuit Schematic to agree with present board design
PROBLEM 2: Signal **LDD ADD ENABLE** does not enable the data path properly.
CORRECTION 2: Change the function of the **LDD ADD ENABLE** line on the board.

NOTE: See continuation supplement ECO 5409668-0002A.
In-plant effectivity -03 rework immediately

5409668-0002A CODE: D
JAN-72 - PROBLEM: Switch bounce from **LOAD ADDRESS** switch may cause an incorrect address to be loaded.
CORRECTION: Add a 1K resistor and a 1 ufd capacitor as an integrator to E5 pin 7. Change the value of C17 to 68 ufd and R57 to 7.5K. Jumper E8 pin 11 to E8 pin 9 and not to E9 pin 8.
In-plant effectivity -Unchanged

5409668-00003 CODE: P CS: F
MAR-72 - CORRECTION: Corrects errors in documentation of the front panel control board.
In-plant effectivity -Documentation change only

5409668-B0004 CODE: F CS: H
APR-72 - PROBLEM: DEPOSIT and EXAMINE keys with high switch bounce cause the computer to go into the RUN state.
CORRECTION: Add one-shots to EXAMINE and DEPOSIT circuits.

NOTE: See correction supplement FCO 5409668-B004A and FCO 5409668-D0005
In-plant effectivity -03 rework immediately
Field effectivity -Replace all 5409668 boards in the field with updated boards.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

5409668-B004A CODE: F CS: H1 Etch: H1
SEP-72 - PROBLEM: ECO 5409668-B0004 calls-out the addition of two capacitors, two resistors and one IC. The caps are physically located in the wrong area on the board, causing intermittent problems.
CORRECTION: Replace and relocate the capacitors.
In-plant effectivity -03 rework as of 9/29/72
Field effectivity -Retrofit all 5409668's which exhibit intermittent switch operation.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

5409668-D0005 CODE: F CS: J
APR-72 - PROBLEM 1: Pins on the #7440 are incorrect in FCO 5409668-B0004.
CORRECTION 1: Correct prints and model to reflect the proper pin numbers.
PROBLEM 2: FCO 5409668-B0004 does not completely fix the problem. DEPOSIT and EXAMINE sometimes cause the computer to go into the RUN state.
CORRECTION 2: Change capacitor C17 from 68 ufd to 47 ufd.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all front panels that have FCO 5409668-B0004.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

5409668-00006 CODE: D CS: K
MAY-72 - PROBLEM 1: DEPOSIT and EXAMINE keys with high switch bounce sometimes cause computer to enter the RUN state.
CORRECTION 1: Re-design the key logic to latch state of switches.
PROBLEM 2: Some users desire switch on -15 and not panel locked; others want the switch panel locked.
CORRECTION 2: Add split lugs to allow user a choice.

NOTE: See continuation supplement ECO 5409668-0006A.
In-plant effectivity -02 phase-in

5409668-0006A CODE: D
AUG-72 - PROBLEM 1: Nuts on light emitting diode (LED) holders show through the plexiglas panels.
CORRECTION 1: Replace with self-tapping screws.
PROBLEM 2: Only one type of LED, #11-10825, is called-out on the prints.
CORRECTION 2: Add second LED, #11-10864, to the print set.
In-plant effectivity -02 phase-in

8I-00119 CODE: D ML: CW WL: BJ
SEP-71 - PROBLEM: New card reader requires inclusion in the CR/8-I print set.
CORRECTION: Modify CR8/I to handle CR8/-F card reader.
In-plant effectivity -03 rework immediately

8I-00120 CODE: P
NOV-71 - PROBLEM: The signal called **INDEX MARKERS** from the CR8/I-F, will not drive the cable to +3 volts back to the PDP-8/I.
CORRECTION: Add a 560 ohm pull-up resistor to the signal **INDEX MARKERS** in the CR8/I-F.
In-plant effectivity -06 documentation phase-in

8I-C0121 CODE: F ML: CY
DEC-71 - PROBLEM: Plus 3 volts, run 60, clamping **TT SET** and **TT RIGHT SHIFT EN** , floats because the DL8-I option is not installed.
CORRECTION: Change the +3V run to C12V1 which is part of the basic processor. ADD jumper C12V1 to D07V1.

NOTE: Symptoms which indicate a need for this fco: Intermittent unprogrammed AC clearing or AC being loaded with incorrect data. The jumper must be removed if the DL8-I option is installed.
In-plant effectivity -03 phase-in
Field effectivity -Retrofit all PDP-8/I except those with DL8-I.
(Time To Install And Test .1 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 3.00) (Kit Contents -FCO Only)

8I-00122 CODE: P
MAR-72 - PROBLEM: In the 74-06295 front panel parts list, "90 " numbers are not shown for Items #4 and #6.
CORRECTION: Item 4: "90 " number should be 9006466; item 6: "90 " number should be 9007616.
In-plant effectivity -06 documentation change only.

8I-00123 CODE: P
JUN-72 - PROBLEM: The Documation card reader has been given an option number which is not shown on the prints.
CORRECTION: Update prints to show option number, CR8/I.
In-plant effectivity -06 documentation change only.

8L-00111 CODE: P

APR-71 - CORRECTION 1: General operation specifications of the CM8L optical mark reader are being changed.
PROBLEM 2: Optical mark data card specifications must be added.
CORRECTION 2: Add card specification A-SP-CM8-L-7 .
CORRECTION 3: Add Incoming Inspection Procedure to prints.
In-plant effectivity -06 documentation change only.

8L-E0112 CODE: F ML: BL

JUN-71 - PROBLEM: When clearing **TTY KEYBOARD** flag, **READER RUN** is set, causing tape to advance. This is undesirable in some programming situations.
CORRECTION: Clear the flag with I0P4 (read buffer) and set **READER RUN** with I0P2.
In-plant effectivity -01 phase-in
Field effectivity -Retrofit only at request and expense of customer.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 13.00) (Kit Contents -FCO/Prints)

8L-C0113 CODE: F ML: BM WL: AE

JUN-71 - PROBLEM: Extended address bits "0 " and "1 " are open collector and have no pull-up resistors when a BM8-L is installed.
CORRECTION: Wire in clamp loads which are available in the PDP 8/L.

NOTE: Kit will be included with BM8-L add-on.
In-plant effectivity -03 rework immediately
Field effectivity -Only when a BM8-L memory expansion is installed.
(Time To Install And Test Varies With System Configuration) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

8P-E0004 CODE: F ML: AZ WL: AN

NOV-70 - PROBLEM: The momentary (key function) panel switches sometimes give out more than one pulse during a single actuation. One pulse per actuation is correct.
CORRECTION: The installation of a key delay circuit will rectify the problem.

NOTE: See correction FCO 8P-05
In-plant effectivity -All future 8P
Field effectivity -LINC-8P, #1-160; retrofit all 8P
(Time To Install And Test 3.0 Hours.) (Documentation $ 5.00 , Parts $ 45.00 , DEC Labor $ 75.00) (Kit Contents -FCO/Prints And Parts) kit will also include FCO form released 2/4/70 and FCO 8P-00005

8P-E0005 CODE: F

FEB-71 - PROBLEM: ECO 8P-00004 has an error; it adds an S107 inverter which was already used.
CORRECTION: Insert an S107 into slot PE30 in machines which do not have an EAE . Change the redundant wiring from the used inverter in PD31 to the unused one in PE30.
In-plant effectivity -04 rework until new stock available
Field effectivity -All machines with FCO 8P-00004 installed.
ML revision BA is created (Time To Install And Test .3 Hour.) (Documentation $. 00 , Parts $ 27.00 , DEC Labor $ 9.00) (Kit Contents - FCO/Prints And Parts)

8P-D0006 CODE: F ML: BB

JUN-72 - PROBLEM: **WORD COUNT OVERFLOW** is not sent out on the bus during an increment break when overflow occurs. This becomes a problem when operating a floating point processor, FPP-12, on a PDP-8.
CORRECTION: Use of an existing S111 in slot F16 of the processor will supply the logic necessary to provide **WCO** during a word count or an increment break cycle. Since this slot is reserved for the 189 A/D converter reference supply module, the customer must consider an alternate solution if he wants both.
In-plant effectivity -N/A
Field effectivity -Add change only if FPP-12 is added to PDP-8
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

8P-E0004 CODE: F ML: AZ WL: AN

NOV-70 - PROBLEM: The momentary (key function) panel switches sometimes give out more than one pulse during a single actuation. One pulse per actuation is correct.
CORRECTION: The installation of a key delay circuit will rectify the problem.

NOTE: See correction supplement FCO 8P-E0005
In-plant effectivity -All future 8P's
Field effectivity -Retrofit LINC-8P, #1 thru #160; retrofit all 8P's
(Time To Install And Test 3.0 Hours.) (Documentation $ 5.00 , Parts $ 45.00 , DEC Labor $ 75.00) (Kit Contents -FCO/Prints And Parts) kit will also include FCO form released 2/4/70 and FCO 8P-E0005

8P-E0005 CODE: F ML: BA

FEB-71 - PROBLEM: FCO 8P-E0004 has an error; it adds an S107 inverter which was already used.
CORRECTION: Insert an S107 into slot PE30 in machines which do not have an EAE . Change the redundant wiring from the used inverter in PD31 to the unused one in PE30.
In-plant effectivity -04 rework until new stock available
Field effectivity -Retrofit all 8P's with FCO 8P-E0004 installed.
(Time To Install And Test .3 Hour.) documentation no charge , parts $ 27.00 , DEC labor $ 9.00 (Kit Contents -FCO/Prints And Parts)

8P-D0006 CODE: F ML: BB

JUN-72 - PROBLEM: WORD COUNT OVERFLOW is not sent out on the bus during an increment break when overflow occurs. This becomes a problem when operating a floating point processor, FPP12, on a PDP-8.
CORRECTION: Use of an existing S111 in slot F16 of the processor will supply the logic necessary to provide WCO during a word count or an increment break cycle. Since this slot is reserved for the 189 A/D converter reference supply module, the customer must consider an alternate solution if he wants both.
In-plant effectivity -N/A
Field effectivity -Retrofit only if FPP12 is added to PDP-8
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

AD01A-00012 CODE: D
SEP-72 - PROBLEM: When an AD01-A is installed on a PDP-8/S: There is a race condition between **I/O AC CLEAR** and data on the data lines; conversion time is too fast for PDP-8/S timing; the micro-instruction in diagnostic location 252 is illegal on a PDP-8/S.
CORRECTION: Shorten **I/O AC CLEAR** from 500 nsec to 110 nsec. Increase **END OF CONVERSION** level from 29 usec to 40 usec. Toggle-change diagnostic location 251 to 7340 and location 252 to 7010.

NOTE: This ECO creates AD01-0 ML revision "N ".
In-plant effectivity -06 documentation/design phase-in

AD01A-00013 CODE: P
JAN-73 - PROBLEM: When configuring an AD01-AN on a PDP-8/S system, changes must be made to the AD01-AN, its timing, and software.
CORRECTION: Update Engineering and Acceptance Specifications to reflect special print sets for the specific configurations.

NOTE 1: This ECO creates AD01-O ML revision "R ".

NOTE 2: See supplement ECO AD01A-0013A, which cancels this ECO.
In-plant effectivity -06 documentation change

AD01A-0013A CODE: P
FEB-73 - PROBLEM: Problem described in ECO AD01A-00013 was previously covered by AD01A-00012.
CORRECTION: Disregard ECO AD01A-00013.
In-plant effectivity -Cancelled

AD01A-E0014 CODE: F WL: J
JUN-73 - PROBLEM 1: Wire missing from AD01-A Wire List.
CORRECTION 1: Correct Wire List to add wire from A09U2 to A10H2.
PROBLEM 2: Option jumper list incorrect.
CORRECTION 2: Correct option jumper list by deleting B11E2 to A07A1.

NOTE 1: See correction supplement AD01A-E014A.

NOTE 2: This FCO creates AD01 ML revision "T ".
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Update documentation for all AD01-A's installed before September 1, 1973.
(Kit Contents -FCO/Prints)

AD01A-E014A CODE: F
JUL-73 - CORRECTION: Distribute FCO AD01A-E0014 to the field.
In-plant effectivity -None
Field effectivity -Initiated

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DEC-O-LOG Engineering Change Order Log

AD01-A

10 Bit ADC With 32 Channels Multiplexed

PROCESSOR TYPE PDP-8 Family

AD01A-00001 CODE: P
JAN-70 - CORRECTION: Updates prints to reflect current AD01-A logic.
In-plant effectivity -06 documentation change only.

AD01A-00002 CODE: D WL: A
JAN-70 - CORRECTION: Updates prints and the Wire List to correct errors and reflect design updating.

NOTE: All ML and WL revisions are going from "0 " to "A ".
In-plant effectivity -All AD01-A's

AD01A-00003 CODE: M
MAY-70 - PROBLEM: A module retention bar cannot be used because of the depth of the power supply and A/D converter module.
CORRECTION: Add 9 1/2 inch end plates so that a retention bar can be used for high vibration environments.

NOTE: This ECO creates AD01-AP ML revision "B " and AD01-AN ML revision "C ".
In-plant effectivity -Phase-in

AD01A-00004 CODE: D ML: A WL: B
MAY-70 - PROBLEM 1: SAMPLE AND HOLD and SIGN BIT options do not work as indicated, due to timing problems.
CORRECTION 1: Changed wiring and timing on modules.
PROBLEM 2: Inverters shown with option AH05 are also required with other options.
CORRECTION 2: Deleted inverters and added them to basic AD01-A.

NOTE: This ECO creates AD01-AN ML revision "D " and AD01-AP ML revision "C ".
In-plant effectivity -Retrofit all units.

AD01A-00005 CODE: D WL: C
JUN-70 - PROBLEM 1: Ground wiring insufficient.
CORRECTION 1: Add soldered ground wires to F2 which is analog ground and provide parallel bussing.
PROBLEM 2: M206 module should not be used in systems.
CORRECTION 2: Change M206 to M216.
PROBLEM 3: One drawing error, a pin number.
CORRECTION 3: Correct Wire List: A07D1 is shown twice; one entry should be changed to A07D2.

NOTE: This ECO creates AD01-AN ML revision "E " and AD01-AP ML revision "D ".
In-plant effectivity -Rework all AD01-A's #1 thru #35 and all future.

AD01A-B0006 CODE: F WL: D
AUG-70 - PROBLEM: PDP-8 I/O bus not completely passed on to next option on bus.
CORRECTION: Add nine wires to relay missing signals on the bus.

NOTE: This FCO creates AD01-AN ML revision "F " and AD01-AP ML revision "E ".
In-plant effectivity -All future AD01-A's.
Field effectivity -Retrofit AD01-A's #1 thru #35.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO Only)

AD01A-C0007 CODE: DF ML: B WL: E
JAN-71 - PROBLEM: AH05 sign option unstable as implemented.
CORRECTION: Replace A315 sign and magnitude module with A862 10 bit and sign A/D converter.

NOTE: This FCO creates AD01-AN ML revision "H " and AD01-AP ML revision "F ".
In-plant effectivity -03 rework immediately.
Field effectivity -Exchange logic frames for AD01-A #1 thru #10 if AH05 is present.
(Time To Install And Test 3.0 Hours.) (Kit Contents -FCO/Prints And Parts)

AD01D-00008 ML: C

AD01A-00008 CODE: P
MAR-71 - CORRECTION: Add Calibration and Acceptance Procedures into the AD01-A print set.

NOTE: This ECO creates AD01-AN ML revision "J " and AD01-AP ML revision "H ".
In-plant effectivity -06 documentation change only.

AD01A-00009 CODE: D WL: F
JUL-71 - PROBLEM: The AD01-A must be modified to fit Clinical Lab installations.
CORRECTION: This ECO adds a G820 in slot B20; adds slot A20 for connection of cable to AD01; describes modification to BCL2B cable needed in conjunction with this ECO.

NOTE: This ECO creates AD01-AN ML revision "K " and AD01-AP ML revision "J ".
In-plant effectivity -Rework AD01-A #1 only

AD01A-00010 CODE: P ML: D WL: H
NOV-71 - PROBLEM 1: RAD8-E requires N BIT UNIPOLAR A/D Converter.
CORRECTION 1: Modify AD01 with A861 in place of A862. Change adjustment procedure.
PROBLEM 2: Modifications to AD01-A serial #1 should not be applied to the general print set.
CORRECTION 2: Eliminate modifications from print set.
PROBLEM 3: Variations -FA , Complex Analog, and -FB , Extended Analog are new options.
CORRECTION 3: Add -FA and -FB variations to Master Drawing List.
In-plant effectivity -06 documentation change

AD01F-00001 ML: E

AD01F-00002 ML: F

AD01F-00003 ML: H

AD01F-00004 ML: J

AD01F-00005 ML: K

AD01A-00011 CODE: P ML: L
MAY-72 - CORRECTION: Changes section #10 of the Adjustment Procedure.
In-plant effectivity -Documentation change only

AD01F-00006 ML: M

AF06A-00011 CODE: D ML: N
APR-70 - PROBLEM: New GLC-8 system software requires new configuration of GLC-8 system hardware.
CORRECTION: Change prints to reflect new configuration. This ECO does not include addition of options required for a complete system.
In-plant effectivity -AF06-A #2129 and future.

AF06A-00012 CODE: P ML: P
SEP-70 - PROBLEM: Incorrect Engineering Specifications, lacks Acceptance Test and Checkout Procedure, and incorrect Analog Calibration Procedure.
CORRECTION: Correct Engineering Specifications, add Acceptance Test and Checkout Procedure A-SP-AF06-A-8. Correct Analog Calibration Procedure.
In-plant effectivity -06 documenation change only.

AF06A-B0013 CODE: F ML: R
NOV-70 - PROBLEM: The AM08/AM03 relay multiplexer maximum speed exceeds the relay manufacturer's timing. Operation at 240/SEC causes relay malfunction and excessive GLC-8 field service calls.
CORRECTION: ECO's AM08-00006 and AF16-00005 correct the problem. Change AF06 specifications and GLC-8 modification drawings to reflect those ECO's.
In-plant effectivity -05 phase-in
Field effectivity -Update customer print sets.
(Time To Install And Test N/A) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

AF06A-00014 CODE: D
JUL-71 - PROBLEM: Name of system to be changed from GLC-8 to CDP , CHROMATOGRAPH DATA PROCESSOR , for marketing purposes.
CORRECTION: Change silk screen for logo from GLC-8 to CDP .
In-plant effectivity -03 rework immediately.

AF06A-D0015 CODE: F ML: S
NOV-71 - PROBLEM: Marketing wants new look for system and less expensive retrofit on field machines used for demonstration.
CORRECTION: Change to new plastic logo frame and inlay. Generate new silk screen. Product line will supply parts and installation information for field retrofit.

Field effectivity -PDP-8/I #2129 and #2381
(Time To Install And Test .5 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

AF06A-00016 CODE: P
APR-72 - PROBLEM: Print legend was inadvertently deleted by ECO PDP8/M-00003.
CORRECTION: Return #7408327-2 variation to legend, part #7408327-2, variation C-SS-7409432-0-1 CDP .
In-plant effectivity -06 documentation change only.

AF06A-00017 CODE: P ML: T
APR-72 - PROBLEM: Due to software change, the INTERRUPT DISABLE switches shown on drawing D-BS-AF06-A-3 are not required.
CORRECTION: Delete any reference to these switches in AF06 Engineering Specifications and on drawings A-PL-7006104-0-0 and D-AD-7006104-0-0 .
In-plant effectivity -Documentation change only

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AF16

Control for Eight AF17

PROCESSOR TYPE Family of 8

AF16-00001 CODE: D ML: A WL: A
NOV-68 - PROBLEM 1: Since -15V takes longer to come up than +5V, the **POWER CLEAR** pulse generated by the 8/I is not seen by a periferal device.
CORRECTION 1: Add an R303 module to generate a **POWER CLEAR** level.
PROBLEM 2: Must run 4X line frequency module on fixed +10V, -15V.
CORRECTION 2: Place 4X line frequency module at end of power bus. Replace bus with hard wiring to power end plate. Move R107 inverter.
CORRECTION 3: Adds maintenance and **CAL** logic.
In-plant effectivity -All AF16

AF16-00002 CODE: D ML: B WL: B
DEC-68 - PROBLEM 1: One wire missing on chrom cables, **POWER CLEAR** .
CORRECTION 1: Add wire to drawing.
PROBLEM 2: Missing information on clock drawing.
CORRECTION 2: Correct clock drawing to provide missing details.
CORRECTION 3: Corrects the wiring card deck.
In-plant effectivity -Serial #1 and #2 and all future

AF16-00003 CODE: DF ML: D WL: C
APR-69 - PROBLEM 1: **TP** , time pulse, comes at a time when the signal ripple is at a peak.
CORRECTION 1: Move **TP** to be generated when the signal ripple is at a zero crossing.
PROBLEM 2: **CLK ENABLE** cannot be adjusted to less than 70 msec.
CORRECTION 2: Remove ground from pin N, ground pin M.
PROBLEM 3: **CAL FLG** input gate pins labeled backward. Pin R has wrong signal on it.
CORRECTION 3: Correct block schematic and wire list. Pin R should come from A21F.
PROBLEM 4: **PWR CLRD** not long enough.
CORRECTION 4: Change note to read Typically 300 msec.
In-plant effectivity -Serial #30 and all future
Field effectivity -Serial #1-#29
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO)

AF16-B0004 CODE: DF ML: H
MAY-69 - CORRECTION: Correct existing system to allow proper programming.
In-plant effectivity -All AF16, #30 and all future
Field effectivity -All AF16, #1-#29, install only when GLC-8 system program version 12 & maindec 8I-D6BB-(D) are available
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

AF16-00005 CODE: F ML: E WL: D
JAN-71 - PROBLEM: The AM08-AM03 relay multiplexer maximum speed exceeds the relay manufacturers timing. Operation at 240/SEC causes relay mal-functioning and excessive GLC-8 field service calls.
CORRECTION: Change DK01 to reduce system sampling to 120/SEC . This change requires deletion of two wires from AF16. Reference AM08-00006 ECO and AF06A-00013 for timing and specification change.
In-plant effectivity -Rework
Field effectivity -Retrofit all AF16 with DK01-A's
(Time To Install And Test .4 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO)

AF16-E0006 CODE: DF ML: H
JUL-72 - PROBLEM: The clock is set-up for 60 Hz operation; **CLK ENABLE** is short for 50 Hz operation.
CORRECTION: Add notation for 50 Hz setting of **CLK ENABLE** .
In-plant effectivity -03 rework immediately
Field effectivity -Update customer prints for 50 Hz systems.
(Time To Install And Test Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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Engineering Change Order Log
DEC-O-LOG

AG04

AMP With Programmed Gain

PROCESSOR TYPE PDP-8

AG04-B0005 CODE: F ML: C WL: C

SEP-70 - PROBLEM: The A212 module requires external relay switching for overload protection.

CORRECTION: Add W809 relay module in slot A25 and change Wire List ECO A212-00003 must be done in conjunction with this ECO (A212 revision "a " boards cannot be reworked in the field and must be exchanged for and etched board revision "C " A212 with ECO A212-00003 implemented

In-plant effectivity -Retrofit AG04 #42 and future

Field effectivity -Retrofit AG04's #1 thru #41

(Time To Install And Test .8 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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AIP12

Analytical Instrumentation Package

PROCESSOR TYPE PDP-8 and PDP-12

AIP12-00001 CODE: P WL: A
MAR-71 - CORRECTION: Updated the revision "P2 " Wire List to be consistent with the prints.
In-plant effectivity -06 documentation change only

AIP12-00002 CODE: P WL: B
APR-71 - PROBLEM 1: Channel seeker speed insufficient to meet Engineering Specifications.
CORRECTION 1: Changed channel coincidence implementation.
PROBLEM 2: **ERROR CHANNEL CLEAR ENABLE** hang up.
CORRECTION 2: Included FPP-12/AIP-12 I/F
PROBLEM 3: Analog aux buffer multiplexer.
CORRECTION 3: Removed **ERROR CHANNEL CLEAR ENABLE** flip-flop; replace with IOT.
PROBLEM 4: FPP-12/AIP-12 I/F , **ADC BBSY** flip-flop, and **AUX 2** flip-flop.
CORRECTION 4: Removed M242 (three j-k flip-flop module . Replaced logic with existing M216 module.
In-plant effectivity -06 documentation change

AIP12-B0003 CODE: DF WL: C
APR-71 - PROBLEM 1: Channel seeker coincidence circuitry marginal.
CORRECTION 1: Reduce channel seeker clock from 5 MC to 2.5 MC .
PROBLEM 2: Output data enable through M734's at data break request time. This time improper and will cause problems on systems with multiple data break options.
CORRECTION 3: Enable output data through M734's with the signal **BOUT-B BREAK H** .
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit AIP12 serial #3 and #4
(Time To Install And Test 4.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

AIP12-00004 CODE: DF WL: D
JUN-71 - PROBLEM: Lead points on M245 modules in slots A17 and B17 puncture insulation on A862 module in slots AB18 since the A862 exceeds component height limits of 3/8 inch.
CORRECTION: Move one M245 module from slot A17 to slot B12 and a second M245 from slot B17 to slot B13.
In-plant effectivity -03 rework immediately
Field effectivity -Distributed for field service information only
(This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

AIP12-00005 CODE: F WL: E
MAY-71 - PROBLEM: Certain patterns of channel sampling, with mixed external sync and program command, cause permanent lockup due to loss of circulating bit in **SHCA** or **SHCB** M245 shift register.
CORRECTION: Remove the possibility of violating the set-up time requirements of the M245 by adding synchronizing flip-flops.
In-plant effectivity -03 rework immediately
Field effectivity -Distributed for field service information only
(This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

AIP12-00006 CODE: P WL: F
MAY-71 - CORRECTION: Correct wire list to reflect proper "z " levels.
In-plant effectivity -06 documentation change only

AIP12-00007 CODE: P
JUN-71 - PROBLEM: Basic 19 cabinet assembly does not include everything required for an AIP12 system within the present variations.
CORRECTION: Add variation 7006501-25-0 to include the following item numbers: 1, 2, 3, 5, 7, 9, and 17.
In-plant effectivity -06 documentation change only

AIP12-A0008 CODE: DF WL: H
JUL-71 - PROBLEM 1: Logic coincidence required to service BCD-BIN converter is marginal. AIP12 mode controller becomes locked in irretrievable mode.
CORRECTION 1: Add **SEQB CTR EN** flip-flop to delay acknowledgement of **MX CHN FND** signal 200 nsec.
PROBLEM 2: Floating **A/D SYNC** inputs could cause spurious samples.
CORRECTION 2: Add pull-ups to **A/D SYNC** inputs.
PROBLEM 3: Timing violation causes M245 shift register to lose a bit.
CORRECTION 3: Add flip-flop synchronizing logic.
In-plant effectivity -05 rework
Field effectivity -Retrofit all AIP12's
(Time To Install And Test 4.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

AIP12-A0009 CODE: DF WL: J
JUN-71 - PROBLEM: During the simultaneous data break service to the AIP12 and the FPP12, the system program hangs up in an irretrievable mode.
CORRECTION: Added an **FPP BREAK SYCH** flip-flop to the AIP12 hardware. Changed clock gating structure to the **FPP P6TD** flip-flop to ensure that its setting and resetting are synchronous with the AIP12 hardware. An M205 module is added in slot D31.
In-plant effectivity -06 documentation phase-in
Field effectivity -Retrofit all AIP12's
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

AIP12-B0010 CODE: F WL: K
SEP-71 - PROBLEM 1: When **EBA FLAG** is reset, during the SEA MODE , the buffer stops filling; however, when the **EBA FLAG** is reset, the first data location is skipped, and the required flags are not set.
CORRECTION 1: **CHANNEL FOUND DISABLE** required the addition of signal **TS0** to prevent premature channel seeking to occur.
PROBLEM 2: Some Wire List errors have not been eliminated in revision "J ".
CORRECTION 2: Correct Wire List errors.
In-plant effectivity -03 rework immediately
Field effectivity -AIP12 serial #11 thru #14.
(Time To Install And Test 9.0 Hours.) (Documentation $ 5.00 , Parts None, DEC Labor $ 225.00) (Kit Contents -FCO Only)

AIP12-C0011 CODE: F WL: L
SEP-71 - PROBLEM 1: M245 module interferred with A864 module (AIP12-C option .
CORRECTION 1: Move M245 module from slot B16 to C26.
PROBLEM 2: A862 module in slot AB18 needs to be moved to AB19 for interchangeability with A864 module.
CORRECTION 2: Move A862 module to slot AB19 and add G718 in slot B16 to allow A864 to be interchanged with A862 for AIP12-C option.
PROBLEM 3: **SHCA** and **SHCB** counters could start with random number due to open inputs.
CORRECTION 3: Add grounds and +3V to start counters with a known number (64 .
In-plant effectivity -01 phase-in
Field effectivity -Retrofit only systems with AIP12-C option.
(Time To Install And Test 9.0 Hours.) (Documentation $ 5.00 , Parts None, DEC Labor $ 225.00) (Kit Contents -FCO/Prints)

AIP12-00012 CODE: D
SEP-71 - CORRECTION: Adds decals which were omitted from drawing A-DC-7408908-0-0 .
In-plant effectivity -01 phase-in

AIP12-00013 CODE: P ML: A
NOV-71 - PROBLEM 1: BNC manufacturer specified the mounting hole diameter to be .500 Inch but the parts measure .501 To .502 Inch.
CORRECTION 1: BNC manufacturer will correct future parts to the market, but not those that have been made. Therefore, the hole size will be changed from .500 To .515 To fit either type BNC mount.
CORRECTION 2: Correct prints.
In-plant effectivity -06 documentation phase-in

AIP12-00014 CODE: M
APR-72 - PROBLEM: No weld studs to facilitate mounting of bezel on front panel assembly of AIP12.
CORRECTION: Addition of four weld studs to front panel assembly.
In-plant effectivity -03 rework immediately

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AIP12

Analytical Instrumentation Package

PROCESSOR TYPE PDP-8 Family and PDP-12

AIP12-D0015 CODE: DF ML: B WL: M

JUL-73 - PROBLEM 1: There is a possibility of double setting any of the buffer flags, depending on software and buffer length. There is no sensing or prevention of such a condition.
CORRECTION 1: If a double setting of a buffer flag occurs, an error flag will be raised. These errors are sensed by the SEF instruction.
PROBLEM 2: A glitch on **ERRS CLD** signal causes erroneous interrupts and SEF skips. The glitch occurs when a channel error flag is set at the same time the ERROR SEEKER is changing states.
CORRECTION 2: Synchronize the channel errors with the ERROR SEEKER by a flip-flop via the AIP12's timing structure.
PROBLEM 3: Because of the programmable capability of setting the "S " bits, it is possible to scramble the data and its ID code.
CORRECTION 3: Buffer the channels and synchronize them into the "S " bits when the MULTIPLEXER SEEKER is in the "LOAD " condition.
PROBLEM 4: If the AIP12's GO BIT is cleared during an acquisition operation, there is the possibility of hanging up in Break Request.
CORRECTION 4: Clear the AIP12's timing generation when the GO BIT is cleared.
CORRECTION 5: Correct print errors.
PROBLEM 6: Some AIP12's require an A216 filter on channels 44 to 46.
CORRECTION 6: Add note to print AIP12-0-AMPL specifying optional use of an A216 filter on channels 44 to 46.

NOTE: See correction supplement FCO AIP12-D015A.
Quick Check -M216 in slots F23 and F28; M205 in slot F21.
In-plant effectivity -03 -Rework AIP12's #45 and #46 and all future.
Field effectivity -Exchange wired panel when symptoms are present.
(Time To Install And Test 20.0 Hours.) (Kit Contents -F980 FCO/Prints And Parts)

AIP12-D015A CODE: DF

AUG-73 - CORRECTION: Additional ADD/DELETE wiring changes are provided for FCO AIP12-D0015.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

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AM03

Low Level Relay Multiplexer

PROCESSOR TYPE PDP-8

AM03-00001 CODE: D
JUL-68 - PROBLEM: A need to isolate capacitance between multiplexer channel and output.
CORRECTION: Add an A111 relay module to the logic.

NOTE: This ECO creates AM03-A ML revision "A " and wl revision "A ".
In-plant effectivity -All AM03's.

AM03-00002 CODE: P
SEP-68 - PROBLEM: Erroneous information on Wire List causes manufacturing problems.
CORRECTION: Correct Wire List. Change drawing D-BS-AM03-0-4 to D-BS-AM03-A-4 .

NOTE: This ECO creates AM03-A ML revision "B " and wl revision "B ".
In-plant effectivity -06 documentation change only.

AM03-00003 CODE: D
SEP-68 - PROBLEM: Sub-multiplexer module left out of second group of multiplexer switches.
CORRECTION: Add A111 for sub-multiplexing. Generate new drawing D-BS-AM03-B-4 .

NOTE: This ECO creates AM03-B ML revision "B " and wl revision "B ".
In-plant effectivity -All AM03's.

AM03-00004 CODE: D
NOV-68 - CORRECTION: Incorrect connector designation for the 7005802 connector assembly panel. Add two new variations, rearrange decals and add new parts.
In-plant effectivity -Phase-in

AM03-E0005 CODE: F ML: A
APR-72 - PROBLEM: The A111 has a high failure rate due to relay failures.
CORRECTION: Use A112 in place of A111.
In-plant effectivity -Rework immediately
Field effectivity -Replace all A111's which fail with A112's
(Time To Install And Test .3 Hour) (Documentation $ 5.00 DEC Labor $ 9.00) This is a product improvement FCO. The parts charge for customer requested retrofit will be as follows:
Systems less than two years old - A111 to A112 exchange price $ 45.00.
Systems greater than two years old - AII2 purchase price $ 93.00. (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

A226

Amplifier

PROCESSOR TYPE PDP-12

A226-A0001 CODE: F CS: C

OCT-71 - PROBLEM 1: Three split lugs omitted from Parts List, all variations.
CORRECTION 1: Add three split lugs to Parts List, all variations.
PROBLEM 2: Capacitor C3 causes excessive feed-thru of high frequency noise to output.
CORRECTION 2: Delete capacitor C3.
In-plant effectivity -Rework immediately
Field effectivity -Rework all A226's in AIP12's
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 Parts None)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents –FCO Only)

A226-00002 CODE: P CS: D

OCT-73 - PROBLEM: The A226 Parts List, -YC variation, Item 12, shows a quantity of zero for a 2K ohm resistor.
CORRECTION: Change the A226 Parts List so that Item 12 indicates a quantity of two. Change all other documents affected by the Parts List change.
In-plant effectivity -Documentation change only

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A231

AD8-E Control Module

PROCESSOR TYPE PDP-8/E

A231-B0003 **CODE: F** **CS: F**
JUL-72 - PROBLEM: **TIMING ERROR FLAG** erroneously sets when AD8/E is started from DK8EP/DK8ES Real Time Clock.
CORRECTION: Invert input to **BUSY** flag to avoid this problem.
In-plant effectivity -03 rework immediately
Field effectivity -All A231 in AD8/EA and DK8/ES.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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A232

Analog Multiplex Expander

PROCESSOR TYPE PDP-8/E

A232-C0001 CODE: F CS: C

NOV-71 - PROBLEM: A232 at CS revision "B " will only decode channels 0 thru 7.
CORRECTION: Rework modules in the field and Production when channels 10 thru 17 are required. The rework procedure is as follows: Cut etch at E2 pin 12, add wire from E2 pin 13 to FV2 etch.

NOTE: Module is at Limited Release status.
In-plant effectivity -Rework immediately
Field effectivity -Rework A232's as required.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO Only)

A232-00002 CODE: D CS: D ETCH: D

DEC-71 - PROBLEM 1: 1709 operational amplifier bias circuitry complex and difficult to troubleshoot.
CORRECTION 1: Change operational amplifier to LM301 and eliminate unneeded components.
PROBLEM 2: A232 uses jumper wire to select channels 0-7 and 10-17.
CORRECTION 2: Add split lugs to select 0-7 for 10-17.
PROBLEM 3: Customer alteration of input voltage desirable.
CORRECTION 3: Add provision for two new resistors per channel which change bias current and provide offset change. These new conponents will be positioned horizontally on the board.
PROBLEM 4: Cutting "F " slot notch causes etch to be cut.
CORRECTION 4: Move components near upper right handle area to new location.

NOTE: Module at Limited Release status.
In-plant effectivity -02 phase-in

A232-C0003 CODE: DF CS: E

DEC-72 - PROBLEM: Distance between shield ground and **HQ GND** on etch causes shield wires to induce ground noise into analog system when a CS revision "D " module is used with the AM8-EC front panel.
CORRECTION: Reroute shield runs as indicated by this FCO.
In-plant effectivity -03 rework
Field effectivity -Rework all A232's, CS revision "D ", with AM8-EC front panels.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

A841

10-Bit A/D with Sample and Hold

PROCESSOR TYPE PDP-8/E

A841-00001 CODE: D CS: D
AUG-71 - PROBLEM: Comparator response is too slow.
CORRECTION: Limited Release A841 etch revision "C " modules require jumpers and part changes before they are usable. Rework all etch revision "C " boards to CS revision "D ".
In-plant effectivity -03 rework immediately

A841-C0002 CODE: F CS: E
NOV-71 - PROBLEM 1: Component tolerance build-up causes low module yield. Symptoms are noisy and erratic outputs from many units.
CORRECTION 1: Improve reference circuit biasing, reduce perturbations on reference, eliminate current loops between HQ and logic grounds.
PROBLEM 2: Negative input buffer may oscillate when unused in system.
CORRECTION 2: When option is used single-ended, A232 front end, install an I/O connector on the A841 to ground this input; increase the value of capacitor C7 from 1200 mmfd to 2200 mmfd.
In-plant effectivity -03 rework immediately
Field effectivity -Exchange A841's as required
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

A841-D0003 CODE: F CS: F
NOV-72 - PROBLEM: Recent yields of DEC 3009B transistors exhibit lower beta than in the past. Base current supplied to transistor Q24 is marginal, causing module test problems. Characteristic problem is Q24 not saturating.
CORRECTION: Increase base drive to Q24 by changing resistor R86 from 22K to 4.7K ohms.

NOTE 1: See continuation supplement FCO A841-D003A.

NOTE 2: Module status, Limited Release.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all A841's when replacement of Q24 is required.
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) Supplement FCO A841-D003A will also be included in the kit.

A841-D003A CODE: F
NOV-72 - PROBLEM: Excessive fall time of bit 3 causing module failures in production.
CORRECTION: Add transistor Q17 and change resistor R45 from 2.2K to 4.7K ohms to improve falltime; lands are provided on module.
In-plant effectivity -Unchanged
Field effectivity -Rework A841's when full recalibration of the A/D is required.

BA08-E0038 CODE: F
JUN-71 - PROBLEM: When clearing **KEYBOARD FLAG** , **READER RUN** is set causing tape to advance. This is undesirable in some programming situations.
CORRECTION: Clear **KEYBOARD FLAG** with IOP 4 (KRB) and set **READER RUN** with IOP 2, **TTY AC CLEAR** .

NOTE: M706 must be etch revision "E " or later.
In-plant effectivity -01 phase-in
Field effectivity -Retrofit all BA08 only at customer request.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 25.00) (Kit Contents -FCO Only)

BA08-C0039 CODE: F ML: AH WL: U
JUN-71 - PROBLEM: When a BM8-L is used with an existing MC8/LA (installed in the BA08) the MC8/LA memory extension control must be disabled.
CORRECTION: Disable the MC8/LA control and use the control signals from the BM8/L.
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all BA08 with BM8/L memory expansion.
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

BA08-00040 CODE: D ML: AJ WL: V
NOV-71 - PROBLEM: New card reader requires inclusion in CR8/L print set.
CORRECTION: Modify CR8/L to handle CR8/LF card reader.
In-plant effectivity -03 rework immediately.

BA08-00041 CODE: P
JUN-72 - PROBLEM: The Documation card reader has been given an option number which is not shown on the prints.
CORRECTION: Update prints to show option number, CR8/L.
In-plant effectivity -06 documentation change only.

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E C DEC-O-LOG Engineering Change Order Log

BC01 F

CABLE,
PP67-C TO PA63

PROCESSOR TYPE Family of 8

BC01F-00001 CODE: P
DEC-70 - CORRECTION: Add diodes to the wire table for the connector cable.
In-plant effectivity -06 documentation change only

BC01F-A0002 CODE: F
APR-71 - PROBLEM: Removed +30V, 30 AWG bussing on PA63 thus using fewer conductors on cable. This increased overall resistance on +30V line.
CORRECTION: Add two jumpers to parallel the conductors on +30V line. Add jumpers from PI-PI to PI-UI and PI-VI to PI-NI on M908.
This FCO is to be installed in conjunction with FCO's PA68F-00013 or PA63-00011 and PR68D-00015 and PP67C-00008.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all BC01-F
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO)

BC01F-00003 CODE: D
DEC-71 - PROBLEM: When using long cables, there is no filtering on the data lines; thus the device will not work correctly.
CORRECTION: Replace M908 module with M979 module and add the M979 circuit schematic to the PA63 print set.

NOTE: See supplement ECO BC01F-0003A.
In-plant effectivity -01 phase-in

BC01F-0003A CODE: D
JUN-72 - PROBLEM: ECO BC01F-00003 has incorrect code. The ECO replaces M908 modules with M979 modules on a phase-in basis.
CORRECTION: Change ECO BC01F-00003 code from 01, phase-in, to 03, rework immediately.
In-plant effectivity -Changed to: 03 rework immediately

BC01F-B0004 CODE: F
FEBRUARY-74 – CORRECTION 1: Make corrections to drawing D-UA-BC01F-0-0.
PROBLEM 2: New cable clamp with handle replaces the old one without the handle under the same part number.
CORRECTION 2: Update models and build future cables using new clamp specified under #12-02790-00.
PROBLEM 3: BC01F, using Amphenol plug, needs color code.
CORRECTION 3: Add orange color code to P2. Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.
In-plant effectivity – all future BC01F's should have this FCO installed.
Field effectivity – retrofit BC01F cables used on systems with PR68-D, -DA, -E, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.
(Time To Install And Test .2 Hour) (Kit Contents –NF1189 – FCO/Prints)

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EC DEC-O-LOG Engineering Change Order Log

BC01 H

CABLE,
PR68-D TO PA63

PROCESSOR TYPE PDP-8 FAMILY

BC01H-A0001 CODE: F
APR-71 - PROBLEM: Removed +30V, -15V, 30 AWG bussing on PA63, thus using fewer conductors on cable. This increased overall resistance on +30V and -15V lines.
CORRECTION: Add two jumpers to parallel the conductors on +30V and -15V lines. Add jumpers from PI-U-SIDE 1 to PI-U-SIDE 2 and PI-P-SIDE 1 to PI-B-SIDE 2 .

NOTE: This FCO is to be installed in conjunction with FCO's PA68F-00013 or PA63-00011 and PR68D-00015 and PP67C-00008.
In-plant effectivity -03 rework immediately
Field effectivity -All BC01-H
(Time To Install And Test .4 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO)

BC01H-00002 CODE: D
DEC-71 - PROBLEM: When using long cables, there is no filtering or noise suppressor on data lines. This causes modules to be destroyed in logic.
CORRECTION: Replace M908 module with M978 module and add the M908 circuit schematic to the PA63 print set.

NOTE: See supplement ECO BC01H-0002A.
In-plant effectivity -01 phase-in

BC01H-0002A CODE: D
JUN-72 - CORRECTION: Change ECO BC01H-00002 disposition code from 01, phase-in, to 03, rework immediately.
In-plant effectivity -Changed to 03 rework immediately

BC01H-B0003 CODE: F
FEBRUARY-74 – CORRECTION 1: Make correction to drawing D-UA-BC01H-0-0.
PROBLEM 2: New cable clamp with handle replaces the old one without the handle under the same part number.
CORRECTION 2: Update models and build future cables using new clamp specified under #12-02790-00.
PROBLEM 3: BC01H using Amphenol plug needs color code.
CORRECTION 3: Add red color code to P2. Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.
In-plant effectivity – all future BC01H's should have this ECO installed.
Field effectivity – retrofit all BC01H cables used in systems with PR68-D, -DA, -E, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.
(Time To Install And Test .2 Hour) (Kit Contents – NF1188 – FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

BD50

Asynchronous Serial Line Interface

PROCESSOR TYPE PDP-8 and PDP-9

BD50-00001 CODE: D DD: A WL: A
FEB-72 - PROBLEM: When used as a single unit, CH0, the interrupt level CH1 floats.
CORRECTION: Change wiring so that B20 is used only when the BD50 contains both channels.
In-plant effectivity -03 rework immediately

BD50-00002 CODE: P DD: B
FEB-72 - CORRECTION: Update prints to show option numbers for second channel.
In-plant effectivity -06 documentation change only.

BD50-D0003 CODE: DF DD: C WL: B
JUN-72 - PROBLEM: Update BD50 to accomodate the Teletype Paper Tape Reader.
CORRECTION: Add the signal **READER SELECT** to cable. Add BC01-J and BC01-A prints to the BD50 print set.

NOTE: See correction supplement FCO BD50-D0004.
In-plant effectivity -03 rework immediately.
Field effectivity -To be installed at customer request if a Teletype reader control is required on the system.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

BD50-D0004 CODE: DF DD: D
SEP-72 - PROBLEM: Documentation error made on FCO BD50-D0003: Location of M706 reads "AB16 ".
CORRECTION: Change to read location "AB21 ".
In-plant effectivity -Unchanged
Field effectivity -Unchanged
(Time To Install And Test N/A) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

BD50-B0005 CODE: F DD: E WL: C
DEC-72 - PROBLEM: Any IOP2 pulse on the I/O BUS will result in a READ REQUEST from the BD50.
CORRECTION: READ BUFFER is to be gated with the **IOT SELECT ENABLE** line out of the M706 module. There is one DELETE , B15M1 to B14B1. The ADD'S are B23V1 to B15M1, B16N1 to B23T2, B21N1 to B23V2, and B23V2 to B23U2.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all BD50's.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

CR04

Card Reader

PROCESSOR TYPE All

CR04-A0001 CODE: F
DEC-72 - PROBLEM: This is a DEC distribution of vendor eco's: Documation eo #2091, #2099, and #3000. Card stacking problems with model M200 card readers in low humidity environments.
CORRECTION: Add new stacker plates.
In-plant effectivity -02 phase-in
Field effectivity -Retrofit all CR10-F, CR11, CR12-F, CR15-F, CR8-F, CR8/I-F with serial numbers under 720400.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

CR04-B0002 CODE: F
JAN-73 - PROBLEM: This is a DEC distribution of a vendor eco: Documation #EO-2009. Picking problems may occur under low humidity operation.
CORRECTION: Add new riffle cap and follower.

NOTE: For DEC SYSTEM-10, reference FCO CR10-A0009.
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all CD11's, CR15-D's and CR15-E's, M1000's and M1200's, with serial numbers under 720400.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

CR04-B0003 CODE: F
JAN-73 - PROBLEM: This is a DEC distribution of a vendor eco: Documation eo #2009. Picking problems may occur under low humidity operation.
CORRECTION: Add new riffle cap and follower.

NOTE: For DEC SYSTEM-10, reference FCO CR10-A0009.
In-plant effectivity -03 retrofit all CD11 and CR8/I-F. Retrofit CR11 as required.
Field effectivity -Retrofit all CD11's, CR8/I-F, CR8/F and CR15-F, M200's, with serial numbers under 720400. Retrofit CR11's as required.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

CR04-B0004 CODE: F
JAN-73 - PROBLEM: This is a DEC distribution of a vendor eco: Documation eo #2009. Last card may not pick when using new riffle cap.
CORRECTION: Add new input follower.

NOTE: FCO CR10-A0009, which adds a new riffle cap, is a prerequisite to this FCO.
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all CR10-D's and CR10-E's, M1000's and M1200's, with serial numbers under 720400.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

CR04-B0005 CODE: F
JAN-73 - PROBLEM: This is a DEC distribution of a vendor eco: Documation eo #2009. Last card may not pick when using new riffle cap.
CORRECTION: Add new input follower.

NOTE: FCO CR10-A0009, which adds a new riffle cap, is a prerequisite to this FCO.
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all CR10-F's, M200's, with serial numbers under 720400.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

DB08-A

Input/Output Data Buffer

PROCESSOR TYPE PDP-7, PDP-8, PDP-8/I, and PDP-9

DB08A-C0003 CODE: F ML: F WL: E

SEP-70 - PROBLEM: DB08-A is incapable of driving 100 foot bus. Signal **INT AC DATA READ NTO** going all the way to ground.

CORRECTION: Provide additional drive to circuit by wiring into the R111 in slot D20.

In-plant effectivity -DB08-A serial #54 and all future.

Field effectivity -DB08-A serial #1 thru #53.

(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 14.00) (Kit Contents -FCO Only)

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E C DEC-O-LOG Engineering Change Order Log

DC04-A

Dual Six Bit Buffered Receiver

PROCESSOR TYPE PDP-8 and PDP-12

DC04A-C0007 CODE: DF ML: F WL: E

FEB-71 - PROBLEM 1: No +5 volt to A27 or B27; this was documented by FCO DC04A-00006.

CORRECTION 1: Add +5 volt to A27 and B27.

PROBLEM 2: For positive inputs, **DMSG A LINE NEG IN** is not grounded, thus there is no electrical return on the **EXCHANGE DATA** coming in.

CORRECTION 2: Adding on the W020 module a ground to H2 of A27 and B27 as shown on the Block Schematic drawing, D-BS-DC04-A-DMSG .

In-plant effectivity -05 all future DC04-A

Field effectivity -Retrofit PDP-12 systems #75, #88, #89, #178, #179, #184, #210, #211, #212, and #257.

(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

DD01

UDC Control and Interface

PROCESSOR TYPE PDP-8

DD01-00001 CODE: D ML: A WL: A
MAR-71 - PROBLEM 1: **B INITIALIZE** , used in synthesizing **C START** , is wrong polarity from the PDP-8/I.
CORRECTION 1: **PWR CLR 2 L** from C06N1, inverted by the M112 gate in A07, is substituted as input to A07L1. This signal is correct polarity from either PDP-8/I or PDP-8/L.
PROBLEM 2: Double bussing of "T " pins is poor risk.
CORRECTION 2: Eliminate double bussing. Remove wiring from "T1 " pins of "D ", "E ", and "F " sets, slots 11 thru 14.
PROBLEM 3: Signal names incorrect on print.
CORRECTION 3: Change **X OUT** to **ADRX** and **Y OUT** to **ADRY** .
In-plant effectivity -03 rework immediately.

DD01-00002 CODE: P ML: B
APR-71 - PROBLEM: Print D-AD-70068250-0-0 shows E11T2 thru E14T2 grounded.
CORRECTION: Remove from ground.
In-plant effectivity -06 documentation change only.

DD01-00003 CODE: D ML: D
JUL-72 - CORRECTION: Replace M302 modules with M3020's.
In-plant effectivity -03 phase-in

DD01-B0004 CODE: F ML: E WL: B
AUG-72 - PROBLEM: Wires missing from **LOAD DATA** circuit. Input to one-shot floating.
CORRECTION: Add wire changes to complete circuit.
In-plant effectivity -03 rework immediately
Field effectivity -All UDC-8 systems shipped before 15 august 1972
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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DD02

EXPANSION FILE UNIT, UDC8, UDC11

PROCESSOR TYPE PDP-8 & 11 FAMILIES, 12, 15

DD02-00001 **CODE: D** **ML: A**
MARCH-71 – PROBLEM: Quad size printed circuit cards are breaking the ends out of the 288 pin connector blocks.
CORRECTION: The 288 pin block is to be reworked with the block ends slotted, therefore, there is no end to break out. Add rework drawing D-AD-7007253 to the drawing set.
In-plant effectivity – phase-in

DD02-00002 **CODE: D** **ML: B** **WL: A**
MARCH-71 -- PROBLEM 1: Signal lines missing from Wire List.
CORRECTION 1: Add signal lines BPCL and BPOP.
PROBLEM 2: Double bussing of "T" pins is poor risk.
CORRECTION 2: Eliminate double bussing.
PROBLEM 3: Signal names incorrect on print.
CORRECTION 3: Change X OUT to ADRX and Y OUT to ADRY.
In-plant effectivity – retrofit immediately

DD02-B0003 **CODE: DF** **ML: C** **WL: B**
MARCH-71 – PROBLEM: Crosstalk on initialize lines in DD02 system unit.
CORRECTION: Reroute critical lines away from data lines; the signal lines affected are **LOAD, START H, X,** and **Y.**
In-plant effectivity – retrofit immediately
Field effectivity – retrofit all DD02's
(Time to Install and Test .5 hour.) (Kit Contents – FCO/prints)

DD02-00004 **CODE: P** **ML: D**
NOVEMBER-71 – PROBLEM: Data bits on UDC11 systems are reversed from UDC-8/15 systems.
CORRECTION: Change notation on DD02 print to reflect UDC11 data notation.
In-plant effectivity – Documentation change only

DD02-C0005 **CODE: F** **ML: E**
MARCH-74 – PROBLEM: +5 volt power distribution is inadequate.
CORRECTION: Add a G772 Power Connector to the DD02. The add/delete's are as follows: DELETE A03A2 to B03A2, B03A2 to C03A2, C03A2 to D03A2, D03A2 to E03A2, and E03A2 to F03A2; ADD A03H2 to B03A2, A03J2 to C03A2, A03K2 to D03A2, A03L2 to E03A2, and A03M2 to F03A2.

NOTE: In the field, this FCO must be installed in conjunction with FCO IDAC-C0004.
In-plant effectivity – retrofit all units in-plant. This ECO must be installed in conjunction with ECO's DD01D-00007 and IDAC-00004.
Field effectivity – retrofit all DD02 Expander Files if power problems are present.
(Time to Install and Test 1.0 hour.) (Documentation $5.00, parts $7.00)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – PF1221 – FCO/prints and parts)

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E C DEC-O-LOG Engineering Change Order Log

DF32-D

32K DECdisk

PROCESSOR TYPE PDP-8 Family and PDP-12

DF32D-C0021 CODE: F ML: R WL: K
FEB-72 - PROBLEM: **DRL** was being set at the wrong time and successful breaks after **DRL** was set were clearing it, so at the end of a transfer **DRL** was cleared even though data was wrong.
CORRECTION: Change the setting of **DRL** to: If the end of the break cycle has not cleared **NO BRK** flip-flop at the time of address compare, ADC 1 , once **DRL** is set, don't clear it until next system clear, SCL .
In-plant effectivity -02 phase-in
Field effectivity -Retrofit all DF32-D's
(Time To Install And Test 2.0 Hours.) (Kit Contents --FCO/Prints)

DF32D-D0022 CODE: F ML: S WL: L
JUL-72 - PROBLEM 1: IOT ' S are not fully decoded. If instruction 6614 is issued while the Disk Extended Address register is counting, the count operation may be incorrect. Symptoms are the **EXT DMA** not finishing at the correct value.
CORRECTION 1: Decode IOT 6615 fully to separate it from 6614.
PROBLEM 2: Race conditions between AC bits changing and IOT width on PDP-8/E.
CORRECTION 2: Add pulse amplifier to shorten IOT 614 width for loading **DISK EMA** , etc.

NOTE: This FCO adds an M112 module in slot C27 and an M602 module in slot C26.
In-plant effectivity -03 -Retrofit immediately as of July 1, 1972.
Field effectivity -Retrofit all DF32-DN's and DF32-DP's
(Time To Install And Test 3.0 Hours.) (Kit Contents -F376 -FCO/Prints And Parts)

DF32D-C0023 CODE: F ML: T WL: M
APR-73 - PROBLEM 1: Race condition exists in adder circuit causing incorrect addresses to be formed.
CORRECTION 1: Hold bit eleven for one additional shift pulse and trigger the CARRY flip-flop later in time.
PROBLEM 2: External noise causing an increase or decrease in the number of shift pulses causes the disk memory address to be shifted out of position at TPI time.
CORRECTION 2: Add a redundant register to check for the error, add logic to correct if the error is detected, and generate a window to allow pulses only at specified times. The following modules are added by this fco: An M115 in slot C28, an M302 in slot D26, an M205 in slot D27, and an M233 in slot D28.

NOTE 1: See correction supplement FCO DF32D-C023A.

NOTE 2: MAINDEC 08-DIDFA-A, DF32 diskless, will not run with this FCO installed; a new or modified diskless MAINDEC will be released.

NOTE 3: This FCO creates DF32-EP and -EN ML revision "R ".
In-plant effectivity -03 retrofit -All machines out of Westfield by the end of April must have this FCO. Westminster -Retrofit only if symptoms are present.
Field effectivity -Retrofit all DF32-D's when symptoms are present
(Time To Install And Test 20.0 Hours.) (Kit Contents -F819 -FCO/Prints And Parts)

DF32D-C023A CODE: F
APR-73 - PROBLEM: Two wires missing on FCO DF32D-C0023.
CORRECTION: Add two wires: **DMA IN L** , A15H2 to D27E2 and D27E2 to D28H2.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

DF32D-C0024 CODE: F ML: U WL: N
JUN-73 - PROBLEM 1: It is still possible to write one bad word on the disk.
CORRECTION 1: Since error cannot be detected until after the fact, flag the error with a **DATA REQUEST LATE** .
CORRECTION 2: Clean up documentation errors.

NOTE 1: This FCO creates DF32-EP and -EN ML revision "S ".

NOTE 2: See correction supplement FCO DF32D-C024A.
In-plant effectivity -03 * -Retrofit all machines in-house and in field which have FCO DF32D-C0023 already installed
Field effectivity -Retrofit all DF32-D's which have FCO DF32D-C0023.
(Time To Install And Test 1.0 Hour.) (Kit Contents -F1012 -FCO/Prints)

DF32D-C024A CODE: F
JUL-73 - PROBLEM: DRL clocked clear due to initial ADD/DELETE sheet for FCO DF32D-C0024.
CORRECTION: Disregard initial ADD/DELETE sheet and use new one included in this supplement.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

DF32D-C0025 CODE: F ML: V WL: P
JUL-74 - PROBLEM: When turning power on, the gap may not be detected unless an IOT is sent.
CORRECTION: Hold the SHIFT OK flip-flop set until the IOT is sent. The ADD/DELETE's are as follows: DELETE D27D1 to B15L2, B14M1 to B10U2, D27D1 to B14M1, B15L2 to A22K1, A15C1 to B16B1, D28C1 to B17J2, and B16B1 to D28C1; ADD B14M1 to B15L2, B10U2 to B14M1, B15L2 to A22K1, D27D1 to D28C1, A15C1 to B16B1, B16B1 to D27D1, and D28C1 to B17J2.
In-plant effectivity -All units in-plant by August 15, 1974 unless problem exists.
Field effectivity -Retrofit all DF32's which have FCO's DF32D-C0023, C023A, and C0024 installed.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -NF1291 - FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

DF32D-TA

TIMING TRACK WRITER AND TESTER

PROCESSOR TYPE 8 FAMILY, PDP-12

DF32DTA-00001 CODE: D WL: A
APRIL-74 – PROBLEM 1: Print set does not reflect new packaging of tester.
CORRECTION 1: Update print set by adding new prints.
PROBLEM 2: False triggering of WRITE ENABLE.
CORRECTION 2: Add one-shot flip-flop.
CORRECTION 3: Update Wire List.

DF32DTA-E0002 CODE: DF DD: A WL: B
JULY-74 – CORRECTION 1: Update Parts List to indicate correct part number.
PROBLEM 2: Write Switch not drawn properly.
CORRECTION 2: Connect NC of switch shown on print.
PROBLEM 3: Does not address as manual states.
CORRECTION 3: Add appropriate gating. The ADD/DELETE's are as follows: DELETE A13H1 to A15R1, A15R1 to A16E1, A13A1 to A13J1, A14J1 to A15D1, A15E1 to A15F2, and A07V2 to A15F1; ADD A15R1 to A16F1, A15R1 to A13H1, A13J1 to A14N2, A14J1 to A14P2, A15F2 to A14R2, and A07V2 to A14S2.

NOTE: This FCO does not affect the operation of the disk. It allows the addressing special words to be written as stated in the manual. The disk will work the same as it presently does with the special word addresses.
In-plant effectivity – Retrofit as required.
Field effectivity – Optional, install only if desired in older model testers.
(Time To Install And Test .5 Hour.) (Kit Contents –NF1305 – FCO/Prints)

DF32-B0004 CODE: F ML: F WL: D
AUG-68 - CORRECTION 1: Correct prints and add notes for DF32 use with PDP-8/I.
PROBLEM 2: Invalid data break possible with system turn-on.
CORRECTION 2: Change buffered **WCOP** line from direct set input of **WCO** to the zero output of the flip-flop. Add **PCL** to the direct set input.
PROBLEM 3: Nylon screws do not immobilize disk during transport.
CORRECTION 3: Correct Parts List and Unit Assembly drawings to show new shipping hardware.
CORRECTION 4: Lengthen right and left switch wires which are too short.
In-plant effectivity -DF32 #310 and future
Field effectivity -Retrofit DF32's #1 thru #309, correction 2 only; correction 1 as required.
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 30.00) (Kit Contents -FCO/Prints)

DF32-C0043 CODE: F
JUL-71 - PROBLEM: Replacement of photo diode block and amplifier will become difficult because these items are no longer being manufactured. Photo diode amplifier drifts and is the cause of 50% of all DF/DS32 service calls.
CORRECTION: Delete photo diode amplifier and platter tape and replace with an integrating delay to detect the gap area. This FCO cannot be installed in DF/DS32 serial numbers 1 thru 433.

NOTE: See correction supplement FCO DF32-E0047.
In-plant effectivity -N/A
Field effectivity -Retrofit all units in the field above serial #433.
(Time To Install And Test 4.0 Hours.) this FCO is available only for installation by DEC at $ 350.00 (Kit Contents -FCO/Prints And Parts) Supplement FCO DF32-E0047 will also be included in the kit.

DF32-00044 CODE: P ML: AD
AUG-71 - PROBLEM: Power Panel prints not included in print set.
CORRECTION: Add the Power Panel assembly prints to the Master Drawing List so they will become part of the DF32 print set.
In-plant effectivity -06 documentation change only.

DF32-00045 CODE: P
SEP-71 - PROBLEM: Incorrect note on drawing E-MD-7405535-0-0 .
CORRECTION: Remove note 2 from drawing.
In-plant effectivity -06 documentation change only.

DF32-00046 CODE: P ML: AE
OCT-71 - PROBLEM: Print D-IC-DF32-0-8 calls out the wrong Power Supply.
CORRECTION: Change print to call out the 799 Power Supply.
In-plant effectivity -06 documentation change only.

DF32-E0047 CODE: F ML: AF WL: H
FEB-72 - PROBLEM 1: FCO DF32-C0043 is marked field retrofit only. New DF/DS32's are being shipped without the update.
CORRECTION 1: Modify all new DF/DS32's as per ECO DF32-C0043.
PROBLEM 2: FCO DF32-C0043 has an error in the ADD/DELETE sheet.
CORRECTION 2: Modify all future field retrofitting as follows: The ADD C27P to C27L must be changed to ADD C27P to C27C.

NOTE: This FCO creates DF32-B ML revision "Z " and DF32-C ML revision "Y ".
In-plant effectivity -All future DF/DS32's
Field effectivity -Correction to FCO DF32-C0043

DF32-E0048 CODE: F
JAN-73 - PROBLEM: When the power switch is in the "off " position, an 80 volt potential exists between the green and the blue or red terminals of the disk motor, resulting in danger to technical personnel making motor connections.
CORRECTION: Change position of red wire connection to switch as follows: There are two red wires on the center pole of the on/off switch. Remove the one going to pin 7 of the relay and reconnect it to the bottom pole of the switch.
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all DF32's during routine maintenance.
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

DM04-00013 CODE: P ML: P
MAR-71 - PROBLEM 1: Engineering Specifications for DM04 not in print set.
CORRECTION 1: Add drawing A-SP-DM04-7 to DM04 print set.
PROBLEM 2: Test Procedure for DM04 not in print set.
CORRECTION 2: Add drawing A-SP-DM04-T-7 to DMO4 print set.
In-plant effectivity -06 documentation change only.

DM04-B0014 CODE: DF ML: R
MAR-71 - PROBLEM 1: The **B BK SYNC CLK H** and **EXT ENAB INT PAUSE H** signals are not passed along on the I/O bus.
CORRECTION 1: Add wiring to pass these signals.
PROBLEM 2: Ringing on the **B BK SYNC CLK H** signal causes a higher priority data address to be strobed to the PDP-12 with lower priority extended field bits.
CORRECTION 2: Add cable termination to the **B BK SYNC CLK H** signal.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all DM04's on PDP-12 systems
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

DM04-00015
MAR-71 - VOIDED and superseded by FCO DM04-C015A

DM04-C015A CODE: F ML: S WL: H
MAY-71 - PROBLEM: When a single cycle break follows a three or single cycle break a glitch appears at **B BRK** because **ADD ACC** and **B BRK** happen at **TP4** . **ADD ACC** clears the **BREAK** flip-flop and the **BREAK** flip-flop gates **B BRK** .
CORRECTION: Clear the **BREAK** flip-flop any cycle except break and special cycle. This FCO adds an M113 in slot A19.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all DM04's with single cycle devices.
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts $ 18.00 , DEC Labor $ 25.00) (Kit Contents -FCO/Prints And Parts)

MISC-00086 ML: T

DM04-B0016 CODE: F ML: U WL: J
FEB-72 - PROBLEM: DECtape Extended Memory Test does not run properly with PDP-8/L. **WORD COUNT** intermittently goes to field 1. This is caused by a spike on **EA DATA INPUT** at TP3 which sets the **EA** flip-flop.
CORRECTION: Change **BTS 3** to **BTS 1** delay in DM04.
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all PDP-8/I's and PDP-12's when symptoms are present.
(Time To Install And Test .5 Hour) (This FCO Is No Charge To Customer) kits contents -FCO/Prints

DS32D-C0007 CODE: F ML: J WL: D
JUN-71 - PROBLEM 1: FCO G085-C0005 added diode D17 and so did FCO G085-A0006 (for DF32-D only .
CORRECTION 1: Delete the addition of diode D17 in FCO G085-A0006.
PROBLEM 2: Need increased slice range.
CORRECTION 2: Make change to logic panel to include slice grounds.

NOTE: All G085's should have FCO G085-C0005 and G085-A0006 (less diode D17) in all DS32-D and -E .
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all DS32-D's and DS32-E's.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

DS32D-00008 CODE: P
AUG-71 - PROBLEM: DS32-D switch panel cable length too short.
CORRECTION: Add 2 inches to 7008411 cable length.
In-plant effectivity -06 documentation change

DS32-C0009 CODE: F
JUL-71 - PROBLEM: Replacement of photodiode block and amplifier will become difficult because these items are no longer being manufactured. Photodiode amplifier drifts and is the cause of 50% of all DF/DS32 service calls.
CORRECTION: Delete photodiode amplifier and platter tape and replace with an integrating delay to detect the gap area.

NOTE: See correction supplement ECO DS32-00010.
In-plant effectivity -N/A
Field effectivity -Retrofit all DS32's.
(Time To Install And Test 4.0 Hours.) this FCO is available only as a DEC installed kit at $ 200.00 (Kit Contents -FCO/Prints And Parts)

DS32-00010 CODE: D ML: P WL: D
FEB-72 - PROBLEM: FCO DS32-C0009 was written as field retrofit only. New DS32's are being shipped without this modification.
CORRECTION: Modify all DS32's as specified by that FCO.
In-plant effectivity -03 rework immediately.

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Engineering Change Order Log
DEC-O-LOG

DP05

Bit Sync Modem Interface Bell 201

PROCESSOR TYPE PDP-8

DP05-B0001 CODE: DF ML: A WL: A
FEB-71 - CORRECTION 1: Corrects the wire list so that it corresponds to the drawings.
CORRECTION 2: Changes logic so no signals are overloaded.
CORRECTION 3: Changes logic so units will meet specifications.

NOTE: This FCO has already been installed in serial numbers 4, 5, and 6.
In-plant effectivity -03 rework immediately
Field effectivity -All DP05
(Time To Install And Test 3.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

DP05-00002 CODE: P ML: B
NOV-71 - PROBLEM: Circuit schematics for M758 and M759 modules not referenced on a master list.
CORRECTION: Add M758 and M759 to DP05 Master Drawing List.

In-plant effectivity -06 documentation change only

DP05-C0003 CODE: DF
JAN-72 - PROBLEM: IOT conflict between DP05 and TR04 in PDP-12 #82.
CORRECTION: Change DP05 device codes from 36 and 37 to 16 and 17.
In-plant effectivity -Install only in systems with DP05 and TR04
Field effectivity -PDP-12 #82 and any system with DP05 and TR04
(Time To Install And Test 1.5 Hours) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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Engineering Change Order Log

DEC-O-LOG

DW8-E

Omnibus Interface

PROCESSOR TYPE PDP-8 Family

DW8E-00001 CODE: M
OCT-72 - PROBLEM: To use slides, #74-09100, BM8L, on the DW8-E; the "T " handle is too long.
CORRECTION: Cut "T " handle to 1 3/4 inch length; tap end to 4-40 thread for 3/16 inch depth.
In-plant effectivity -06 documentation/mechanical change

DW8E-E0002 CODE: DF DD: A WL: A
APR-73 - PROBLEM 1: Changes to M7101 module affect control drawings.
CORRECTION 1: Change control drawings to reflect latest revision of M7101 module.
PROBLEM 2: Minor errors and vague areas in print set.
CORRECTION 2: Clean up print set and Wire List.

NOTE: This FCO does not affect the operation of the DW8-E.
In-plant effectivity -03 * -Do not retrofit ADD/DELETE's unless requested by a customer.
Field effectivity -Retrofit all DW8-E's with revision "" Wire List.
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts None)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -FCO/Prints)

DW8E-00003 CODE: P DD: B
APR-73 - CORRECTION: Add ECO LINC8M-00008 to Accessory List and Engineering Specifications.
In-plant effectivity -06 documentation change only

DW8E-00004 CODE: D
MAY-73 - PROBLEM: The Parts Lists for #70-09155 AC harness and #70-09288 DC harness specify Nylon tie wraps and Teflon insulated wires.
CORRECTION: Delete the Nylon and Teflon specifications.
In-plant effectivity -06 documentation change only

DW8E-00005 CODE: M DD: C
MAY-73 - PROBLEM 1: Chassis will not rotate fully because of fan screws and filter.
CORRECTION 1: Use slotted, binder-head screws on fans and cable trough; mount filter inside chassis; use spacers provided with slides.
PROBLEM 2: Slides won't unlock to push fully in; no shipping tie down.
CORRECTION 2: Use 10-32 screws and flat washers in tie down holes with 10-32 keynuts and captive tie-wraps.
In-plant effectivity -06 documentation/mechanical change

DW8E-00006 CODE: D
MAY-73 - PROBLEM 1: Rework to bolts provided with chassis slides no longer necessary.
CORRECTION 1: Disregard Items #3 and #4 on rework print for chassis slide.
PROBLEM 2: I/O cable hole not large enough for flat coax; fan filter conflicts with slide when chassis is rotated; slides do not always unlock when chassis is pushed into cabinet.
CORRECTION 2: Change location and size of hole in chassis; mount filter inside chassis; mount slides near back of chassis.
In-plant effectivity -02 -Phase-in

DW8E-00007 CODE: D DD: D WL: B
JUN-73 - PROBLEM: Data is not on bus with sufficient time to charge the MB DCD gates on PDP-8 or LINC-8.
CORRECTION: Bring data onto bus at beginning of break cycle.
In-plant effectivity -03 * retrofit only DW8-E's to be installed on a PDP-8 or LINC-8.

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G020

SENSE AMPLIFIER

PROCESSOR TYPE PDP-8/I

G020-00001 CODE: D CS: C
SEPTEMBER-68 – PROBLEM: Tolerance variation of Zener voltage degrades output of sense amplifier.
CORRECTION: Tighten tolerance on Zener voltage by substitution of IN753A, plus or minus 5%, for IN753, plus or minus 10%.
In-plant effectivity – phase-in

G020-00002 CODE: D CS: C ETCH: D
NOVEMBER-68 – PROBLEM: Bias on sense amplifier IC is current source; should be voltage.
CORRECTION: Bias changed to voltage source to improve margins, allow Ferroxcube stacks to work better, reduce IC rejection rate and checkout time in Module Test.
In-plant effectivity – phase-in ASAP

G020-00003 CODE: D CS: E ETCH: E
SEPTEMBER-69 – PROBLEM: Plots of slice voltage against strobe time indicate that increased strobe margins and noise immunity would result if slice voltage was changed from –3 to –4 volts.
CORRECTION: On future production of G020 Sense Amplifier, etch revision "E", voltage divider resistors should be changed accordingly.
In-plant effectivity – phase-in November 1, 1969

G020-00004 CODE: D CS: F
NOVEMBER-69 – PROBLEM: Approximately one hundred fifty G020 etch revision "D" modules piled in Module Test are unsatisfactory for use in production because the slice voltage is fixed by a current source into pin 6 of the MC1540 integrated circuit. This sometimes results in incorrect slice voltage settings due to variations in the MC1540.
CORRECTION: Work G020 etch revision D boards to drawing B-CS-G020-0-1, revision E. The rework is the alternative to disposing of these boards. Old G020's, returned from the field, should be reworked to the new CS E level also.
In-plant effectivity – rework only etch revision D boards in stock and boards coming in for repairs.

G020-00005 CODE: D CS: H ETCH: H
JANUARY-70 – PROBLEM: Pull-up resistors on MC1540's outputs, pin 8, are wrong value, causing MC1540's to be overloaded.
CORRECTION: Change resistors R13 and R14 from 470 ohms, 1/4W, 5% to 1K, 1/4W, 5%.
In-plant effectivity – phase-in

G020-C0006 CODE: F
APRIL-70 – PROBLEM: ECO G020-00003 indicates phase-in as a BREAK-IN POINT. This has resulted in systems being produced with mixed revisions of the G020, some with +3 volt slice and some with +4 volt slice.
CORRECTION: Correct BREAK-IN for ECO G020-00003 to "Retrofit all in house and in the field; all future". Field Service Note: There is no field problem if G020's all have the same slice voltage, either +3V or +4V.
In-plant effectivity – rework all in-plant and all future.
Field effectivity – see that boards are not mixed.
(Time to Install and Test N/A) (Kit Contents – FCO only)

G020-C0007 CODE: F CS: J
MAY-70 – PROBLEM: G020's exhibit excessive noise on etch revision "H" boards because of a new layout from plated-thru boards to eyelet boards.
CORRECTION: Add ground run of #30 wire on all etch revision "H" boards.
In-plant effectivity – rework all etch revision "H" G020's
Field effectivity – rework all etch revision "H" G020's
(Time to Install and Test .5 hour.) (Kit Contents – FCO/prints)

G020-00008 CODE: D CS: K
MAY-71 – PROBLEM: Existing documentation does not allow for manufacturing this etch board with griplets.
CORRECTION: Change associated drawings to allow for griplets.
In-plant effectivity – phase-in

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G111

12 Bit Sense and Inhibit

PROCESSOR TYPE PDP-8/E

G111-00001 CODE: M CS: C
JUN-72 - PROBLEM 1: 6 watt resistors and 1540's to be mounted 1/16 inch off board.
CORRECTION: Add note to Assembly Hole drawing. 1: Mount R1 thru R12, 6W resistors, at least 1/16 inch off board 2: Allow 1/8 inch clearance between board surface and bottom of 1540's.
In-plant effectivity -02 phase-in

G111-A0002 CODE: DF CS: D
JUL-72 - PROBLEM: SCHMOO ' S cave in when subjected to heat (the SCHMOO curve is distorted); fails at high threshold, late strobe margin results.
CORRECTION: Change common mode rejection capacitor to 82 pfd.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all G111's
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

G111-00003 CODE: D CS: E
OCT-72 - PROBLEM: Nominal current setting requires adjustment.
CORRECTION: Change the value of resistor R65 to 2.37K ohms, setting Vxy within the proper range.

NOTE: See correction supplement FCO G111-D0004.
In-plant effectivity -03 rework all G111's in MM8-EJ beginning 10-18-72.

G111-D0004 CODE: F CS: F
OCT-72 - PROBLEM: The tolerances of Vxy are too great to permit total module interchangeability.
CORRECTION: Adjust the Vxy on the G111 when the uncertainty is greatest.

NOTE: Install a resistor for R65 of a value that will produce a voltage at pin HA1 between -3.65 and -3.70 with respect to +5 volts.
In-plant effectivity -03 rework beginning 10-20-72.
Field effectivity -Rework G111's when MM8-EJ modules are replaced individually rather than as a three module set.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints)

G111-D0005 CODE: F CS: H
OCT-73 - PROBLEM 1: There is noise on the **INHIBIT** etch run that can turn on the inhibit driver load gates during read time. This will cause the memory to randomly pick up and drop bits. This problem is less likely to occur in the field than at the in-plant memory tester.
CORRECTION 1: Make ten etch cuts and install four #30 AWG twisted pair jumpers.
PROBLEM 2: Shortage of DEC 384 IC's.
CORRECTION 2: Allow DEC 7384's and DEC 5384 IC's to be substituted for DEC 384 IC's.
In-plant effectivity -As of 10/8/73, in Module Production, incorporate this ECO only in blank modules. Do not lift or unsolder any components to install this ECO in Module Production. Memory Test areas: Retrofit as required.
Field effectivity -Rework all G111's if symptoms are present
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $ 1.60)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -F1060 - FCO/Prints And Parts)

G111-00006 CODE: D CS: J
NOVEMBER-73 – PROBLEM 1: FCO G111-D0005 stated that 7384's could be substituted for all 384's receivers. This is an error.
CORRECTION 1: Change Parts List so that 7384's cannot be substituted for 384's E14, E21, and E28.
PROBLEM 2: D49, 6.8V Zener diode, stability can be improved.
CORRECTION 2: Make resistor R91 a lower value to improve the stability of D49; change to #13-02956, 196 ohms.
CORRECTION 3: Add note to the Circuit Schematic indicating new system configuration.
In-plant effectivity – rework all units as of March 1, 1974

G111-00007 CODE: D CS: K ETCH: D
NOVEMBER-73 – CORRECTION: Make etch changes, to new revision "D", to expedite installation of twisted pair wiring added by ECO G111-00005.
In-plant effectivity – all new modules built as of March 1, 1974.

G111-C0008 CODE: DF CS: L
FEBRUARY-74 – PROBLEM 1: Non-hermetically sealed capacitors, solid tantalum electrolytics, are affected by our board cleaning process and can become shorted.
CORRECTION 1: Use only hermetically sealed caps, solid tantalum electrolytics, on this module. Non-hermetically sealed caps are identified by a red positive end.
PROBLEM 2: Product reliability can be improved by specifying a better device for E9.
CORRECTION 2: Specify a DEC 74H00-1 for E9
In-plant effectivity – immediate for 47 MFD capacitors, part #10-00079. All modules returned for repair must be retrofitted with proper 47 MFD caps. Phase-in for 6.8 MFD capacitiors, part #10-00067 in all new builds as of 2/18/74. Phase-in DEC 74H00-1 in all new builds as of 4/30/74.
Field effectivity – rework G111's in depots only as modules are returned for repair. High current use of 47 MFD capacitors on this module necessitates retrofit in depots; the other capacitors need not be changed. The IC change is for future reliability only.
(Time To Install And Test .5 Hour) (Kit Contents – PF1198 – FCO/Prints and Parts)

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Engineering Change Order Log
DEC-O-LOG

G227

X-Y Driver, MM8-E

PROCESSOR TYPE PDP-8/E

G227-B0001 CODE: F CS: C
DEC-70 · PROBLEM: Optimize switch circuitry.
CORRECTION: Change all 330 pf capacitors to 680 pf , 100V , 5 % (64 total . Change R139 from 330 , 1/4W to 470 , 1/2W , 5 %. Delete C95 and C66 .01 Mf.

NOTE: This FCO is for retrofit only and the etched board will not be canged at this time.
In-plant effectivity -03 rework immediately
Field effectivity -All G227
(Time To Install And Test 1.0 Hour.
(Kit Contents -FCO/Prints And Parts

G227-00002 CODE: D
FEB-71 · PROBLEM 1: Discrepancy in availahle space for specified 680 pf capacitor
CORRECTION 1: Change the type of capacitor used for existing boards in production when capacitors are available. Change etch according to sample provided.
PROBLEM 2: Cooling of current source transistor not optimum.
CORRECTION 2: Move location of 4 transistors to provide the space for the heat sinks.

NOTE: This is a supplementary ECO to G227-B0001.
In-plant effectivity -01 phase-in

G227-00003 CODE: P CS: D
FEB-71 · PROBLEM: Circuit schematic revision does not match revision stamped on the handle.
CORRECTION: Update the circuit schematic revision to D .
In-plant effectivity -Documentation change only

G227-00004 CODE: D CS: E
MAY-71 · PROBLEM 1: Current imbalance between read and write currents.
CORRECTION 1: Change R1 , R3 , R5 , R7 , R9 , R12 , R14 , R15 , R66 , R58 , R52 , R60 , R56 , R61 , R54 , R64 from 330 ohms to 180 ohms , 1/4W , 5 %.
PROBLEM 2: capacitor , 680 pf 1000V ceramic # 10-10312 , does not meet specifications.
CORRECTION 2: Change capacitor to 680 pf , 100V , 5 % mica (affects documentation only at this time Implement ECO on all boards which have not been wavesoldered.
In-plant effectivity -03 rework immediately

G227-00005 CODE: D CS: F
AUG-71 · PROBLEM 1: Shorts on pins not used by MM8-E are not detected in memory test.
CORRECTION 1: Remove all unused pins on fingers a , B , C , & D.
PROBLEM 2: R36 & R31 are underrated.
CORRECTION 2: Use 1 watt resistors for R36 & R31.
PROBLEM 3: Solder shorts on G227 are too common.
CORRECTION 3: Re-route etch around emitter of Q9 and capacitor/resistor networks to derease the possibility of solder shorts.
PROBLEM 4: R26 , R27 , R40 , & R41 can be more common
CORRECTION 4: Use 4.7K for R26 , R27 , R40 , R41.
PROBLEM 5: Drawings are incorrect.
CORRECTION 5: Make misc print corrections.
PROBLEM 6: Q11 runs hot
CORRECTION 6: Return collector of Q11 to ground instead of 5V
In-plant effectivity -01 phase-in

G227-B0006 CODE: F CS: H
JUN-72 PROBLEM: Systems made marginal by noise on FIELD LOW line
CORRECTION: Reroute FIELD LOW line and connect termination resistors at the end of the line.

NOTE: See supplement G227-0006A
In-plant effectivity -03 rework immediately
Field effectivity -Install on all etch rev D boards
(Time To Install And Test 1.0 Hour
tomer (Kit Contents -FCO/Prints Supplement G227-0006A Will Also Be Included In The Kit

G227-0006A CODE: F
JUN-72 · PROBLEM: FCO G227-B0006 gave no instructions to retrofit etch revision D boards.
CORRECTION: Modify etch revision D boards making three etch cuts and adding two wires , as specified in the rework instructions in FCO G227-B0006.
In-plant effectivity -Unchanged
Field effectivity -Unchanged
This FCO creates CS rev E1 to etch rev D boards

G227-C0007 CODE: DF
FEBRUARY-74 – PROBLEM: Non-hermetically sealed capacitors, solid tantalum electrolytics, are affected by our board cleaning process and can become shorted.
CORRECTION: Use only hermetically sealed caps, solid tantalum electrolytics, on this module. Non-hermetically sealed caps can be identified by a red positive end.
In-plant effectivity – all new builds as of 2/18/74
Field effectivity – replace capacitors only in Module Repair Depots when boards are returned for repair. This FCO is to be implemented in Depots only.
(Time To Install And Test .2 Hour) (Kit Contents – PF1205 – FCO/Prints and Parts)

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G233

XY Selection,
Current Source Module

PROCESSOR TYPE All

G233-00001 CODE: D CS: C
MAY-72 - PROBLEM 1: Spacing, clearance, and alignment problems for manufacturing the G233-C board.
CORRECTION 1: Correct etched board layout.
CORRECTION 2: Change circuit schematic E-CS-G233-0-1 to allow **FIELD L** to run correctly.
CORRECTION 3: Changes the circuit schematic to make the board a 4K version.

NOTE: See supplement ECO G233-0001A.
In-plant effectivity -02 phase-in

G233-0001A CODE: D
MAY-72 - CORRECTION: Corrects errors in circuit schematic E-CS-G233-0-1 revision B.
In-plant effectivity -Unchanged

G233-A0002 CODE: DF CS: D ETCH: E
JUL-72 - PROBLEM 1: Current source and write switches turning off too early, and write drivers turning off too late.
CORRECTION 1: Swap **SOURCE** and **RETURN** timing signals.
PROBLEM 2: 4008 turn off time excessive.
CORRECTION 2: Use faster 4008's (marked with a Y on 4008 package .
In-plant effectivity -03 rework immediately
Field effectivity -Rework immediately all G233's, CS revision C
[Time To Install And Test 2.0 Hours.] [This FCO Is No Charge To Customer] [Kit Contents -FCO/Prints And Parts] Acceptance Procedure SP-MM8-EJ-1 will also be included in this kit.

G233-A0003 CODE: DF CS: E
JUL-72 - PROBLEM Current ring on drive lines.
CORRECTION: Clamp overshoot with D672 diode.

In-plant effectivity -03 rework immediately
Field effectivity -Rework all G233's, immediately
(Time To Install And Test 2.0 Hours) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) Acceptance Procedure SP-MM8-EJ-1 will also be included in this kit.

G233-00004 CODE: D CS: F
OCTOBER-72 – PROBLEM 1: High delta noise.
CORRECTION 1: Offset current rise times.
PROBLEM 2: Switch circuit, slow turn-off.
CORRECTION 2: Worst-case switch circuit. Change transformers and R/C networks.
PROBLEM 3: Oscillation of reference voltage for current source.
CORRECTION 3: Change values of capacitors across current reference signal and +5V.
PROBLEM 4: Current source may go into saturation.
CORRECTION 4: Change pull-down resistor from 10 ohms to 5.1 ohms to lower voltage at the stack.
In-plant effectivity – retrofit all boards in-plant as of 10/5/72. G646 revision "C" should be installed with this ECO.

G233-00005 CODE: D
FEBRUARY-73 – PROBLEM 1: Module will not work as an X-Y driver board for an MM8-EH system.
CORRECTION 1: Add machine inserted jumper and pull-up resistor.
PROBLEM 2: Revision "E" etch was never produced as indicated on ECO's G233-A0002, G233-A0003, and G233-00004.
CORRECTION 2: Update board to new etch revision "F".
PROBLEM 3: Hole spacing for 3762's and 1008's in incorrect.
CORRECTION 3: Correct 3762's and 1008's hole spacing.
CORRECTION 4: Add table showing jumper requirements.

NOTE: This ECO was cancelled by supplement G233-0005A.
In-plant effectivity – as of July 1, 1973, use this module for MM8-EH and MM8-EJ systems.

G233-0005A CODE: D
APRIL-73 – PROBLEM: ECO G233-00005 causes an identification problem in determining which revision boards can be used in the MM8-EJ and future memory options.
CORRECTION: Cancel ECO G233-00005.
In-plant effectivity – cancelled

G233-00006 CODE: D CS: H
APRIL-73 – PROBLEM: To enable the use of National Semiconductor 4011's on G233 modules in addition to the 4008 "X", "Y", and "T" devices now allowable.
CORRECTION: Add note to G233 Circuit Schematic authorizing use of National Semiconductor 4011, marked 4011 and National Semiconductor 4011, remarked 4008X.
In-plant effectivity – 06 documentation/design change

G233-00007 CODE: D CS: J
MAY-73 – PROBLEM: To enable the use of 4011's on G233 modules in addition to 4008 "X", "Y", and "T" devices.
CORRECTION: Change Note #2 on G233 Circuit Schematic to authorize using 4011's interchangeably with 4008 "X", "Y", and "T" devices.
In-plant effectivity – documentation/design change

G233-00008 CODE: DF CS: K
FEBRUARY-74 – PROBLEM 1: Parts list specifies wrong part number for Items #34 and #40.
CORRECTION 1: Item #34 should be a DEC 4011, #15-11102, item #40 should be #22 wire, #91-07350.
CORRECTION 2: Make correction and clarification changes to prints.
PROBLEM 3: Non-hermetically sealed capacitors, solid tantalum electrolytics, are affected by our board cleaning process and can become shorted.
CORRECTION 3: Use only hermetically sealed capacitors, solid tantalum electrolytics, on this module. Non-hermetically sealed capacitors are identified by a red positive end.
In-plant effectivity – immediate for 4011 change; phase-in wire change. Phase-in print change; new capacitors on all new builds as of 2/18/74.
Field effectivity – replace capacitors on G233's when they are returned to the Depots for repair. Capacitor replacement will be performed at the Depot level only.
(Time To Install And Test .5 Hour.) (Kit Contents – NF1200 – FCO/Prints)

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G785

Power Connector Module

PROCESSOR TYPE PDP-8/L

G785-00001 CODE: D CS: A

MAY-69 - PROBLEM: Power Fail problems in BA08. +5 was decaying faster in the BA08 because of less loading than the PDP-8/L.
CORRECTION: There has been a temporary fix in all BA08'S; this ECO is the final design updating.
In-plant effectivity -Rework all G785's.

G785-C0002 CODE: F CS: B

JUN-71 - PROBLEM: The -15 volt regulator does not provide enough current to the M715, preventing full speed adjustment at 300 characters per second.
CORRECTION: Change resistors R9, thru R13 from 3K 1/4 watt 5% to 1.69K 1/2 watt 1%.
In-plant effectivity -03 rework immediately.
Field effectivity -Rework all G785's as required.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $ 1.50 , DEC Labor $ 13.00) (Kit Contents -FCO And Parts)

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G793

PDP-8/I Switch Connector

PROCESSOR TYPE PDP-8

G793-B0001 CODE: F CS: A

JAN-70 - PROBLEM: Hot spots on the G793 are caused by the location of this board next to the inhibit resistors and also poor air circulation around these modules.
CORRECTION: Relay out the board and spread out the resistors so there will be more space between them for better heat dissipation.
In-plant effectivity -Phase-in when new board is available.
Field effectivity -Exchange G793's as required.
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

G793-B0002 CODE: F CS: B

MAR-70 - PROBLEM: Circuit power requirements incorrect.
CORRECTION: Change resistors to bring power down.
In-plant effectivity -Rework all G793's
Field effectivity -Rework all G793's.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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EC DEC-O-LOG Engineering Change Order Log

G805

Regulator Module for Negative 8 Memory

PROCESSOR TYPE PDP-8

G805-00001 CODE: M

MAR-70 - PROBLEM: Screws which mount the power transistor to its heat sink protrude beyond the edge plane of the heat sink. When the module is installed in an MM8-IA, a serious possibility exists that the screws could short against the chassis.
CORRECTION: Replace the 5/8 inch mounting screw with one 9/16 inch long, #90-07793.
In-plant effectivity -03 rework immediately

G805-B0002 CODE: F CS: H

JUN-70 - PROBLEM: Trimpot of G826 revision "K " is shorting the -30 volt etch of G805.
CORRECTION: Add insulated standoffs to G805 board on #2 side.
In-plant effectivity -Rework all G805's
Field effectivity -Rework all G805's.
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

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Engineering Change Order Log
DEC-O-LOG

G853

Unit Select & Timing Track Sensing Module

PROCESSOR TYPE PDP-8, PDP-9, DECsystem-10, and PDP-15

G853-B0001 CODE: F CS: A

AUG-70 - PROBLEM: The PDP-10 group reported operating problems in relation to remote selection of DECtape units. Investigation showed that under worst-case conditions the G853 would not work.

CORRECTION: Change resistor R2 from 470 ohms to 680 ohms. Change resistor R1 from 1K to 1.1K ohms. Change resistor R5 from 120 ohms to 180 ohms. Replace resistor R4 with a 10V Zener diode, DEC part #1100125.

In-plant effectivity -Phase-in

Field effectivity -Rework all G853's when symptoms are present.

(Time To Install And Test .8 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

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E C DEC-O-LOG Engineering Change Order Log

G861

Solid State Transmitter Module

PROCESSOR TYPE PDP-8 AND 11 FAMILIES

G861-00001 CODE: D CS: A
MAR-70 - PROBLEM: Etch on one side runs too close to metal component.
CORRECTION: Change etch.
In-plant effectivity -Phase-in

G861-00002 CODE: D CS: B
MAY-71 - PROBLEM: Inadequate lightning protection for module.
CORRECTION: Relayout board to include two (2) gas filled surge voltage protectors.

NOTE: For existing systems, (DC08-CS), modules are to be replaced only at customer request.
In-plant effectivity -01 phase-in

G861-B0003 CODE: F CS: C
MAR-72 - PROBLEM: G861 modules, etch revision "C ", have wrong number of cores in each transformer.
CORRECTION: Add one (1) core in four (4) places on each G861.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all G861's, etch revision "C "
(Time To Install And Test 2.0 Hours)
(Kit Contents -FCO/Prints And Parts)

G861-D0004 CODE: F CS: D
MAY-74 - PROBLEM: It is possible for the cores of T1 or T4 to move, thus shorting two adjacent etch pads. Damage to the board and/or other circuits is possible.
CORRECTION: Install nylon flat washer #90-06707 between bottom core and etch board in four places.
In-plant effectivity -Rework all in-plant by June 21, 1974
Field effectivity -Rework etch revision "A " "B ", and "C " G861's when symptoms are present. There is no CS documentation for reworked etch revision "A " or "B " boards.
(Time To Install And Test .5 Hour.) (Kit Contents -PF1259 -FCO/Prints And Parts)

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ECO DEC-O-LOG Engineering Change Order Log

G862

Solid State
Receiver Module

PROCESSOR TYPE PDP-8

G862-00001 CODE: P CS: A
APR-70 - CORRECTION: Part numbers on drawing A-PL-G862-0-0 are corrected by this ECO.
In-plant effectivity -06 documentation change only.

G862-00002 CODE: D CS: B
JUN-70 - PROBLEM: Board not to production standards.
CORRECTION: Relayout to production standards.
In-plant effectivity -Phase-in

G862-00003 CODE: D CS: C
JUL-70 - PROBLEM: The .05 Mfd disc capacitors don't meet 3/8 inch height requirement.
CORRECTION: Change capacitors to .01 Mfd disc capacitors.
In-plant effectivity -02 phase-in

G862-B0004 CODE: F CS: D
SEP-70 - PROBLEM: Jumpers are in the wrong place.
CORRECTION: Move the two jumpers from the upper pair of holes to the lower pair.
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all existing modules.
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

G862-00005 CODE: D CS: E
MAY-71 - PROBLEM: Inadequate lightning protection for module.
CORRECTION: Relayout board to include two gas filled surge voltage protectors.

NOTE 1: For existing systems, DC08-CS, modules are to be replaced only at request of customer. NOTE 2: This FCO must be installed in conjunction with ECO G862-00006.
In-plant effectivity -01 phase-in

G862-00006 CODE: D
JUN-71 - PROBLEM: This is a supplement to ECO G862-00005; it is not necessary to replace the .01 Ufd capacitors.
CORRECTION: Do not delete four .01 Ufd 100 volt capacitors; do not add two .02 Ufd 50V capacitors.
In-plant effectivity -01 phase-in

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E C DEC-O-LOG Engineering Change Order Log

G0870

MASTER SLICE CONTROL

PROCESSOR TYPE ALL EXCEPT PDP-14

G0870-00001 **CODE: D** **CS: B** **ETCH: C**
JULY-73 – PROBLEM: Component hole spacing for diodes D1, D2, D3, and D4 is incorrect.
CORRECTION: Relayout etch to new revision "C" to correct hole spacing.
In-plant effectivity – phase-in of new etch about October 15th.

G0870-C0002 **CODE: F** **CS: C** **ETCH: D**
MARCH-74 – PROBLEM: Missing etch between diode D1 and resistor R6 on etch revision "C" boards causes unreliable operation under margins.
CORRECTIONS: Add missing etch to artwork. Rework existing boards by adding a jumper wire between D1 and R6.
In-plant effectivity – rework all etch revision "C" boards.
Field effectivity – rework all etch revision "C" G0870's. In TU20's with FCO TU20-B0022 or in TU30's with FCO TU30-B0024.
(Time to Install and Test .5 hour.) (Kit Contents – NF1235 – FCO/prints)

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E C DEC-O-LOG Engineering Change Order Log

G900

Photocell Amplifier Module

PROCESSOR TYPE Family of 8

G900-B0001 CODE: F CS: F
NOV-71 - PROBLEM: Bias resistor R23 (10K) will not allow sufficient gain on G900.
CORRECTION: Change R23 to 15K.
In-plant effectivity -03 rework immediately
Field effectivity -All G900
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

G900-00002 CODE: P CS: H
DEC-71 - PROBLEM: Circuit schematic calls for R3 to be 15K ohms, physical calls for R3 to be 10K.
CORRECTION: Change the Assembly Hole drawing to make R3 equal 15K.
In-plant effectivity -Documentation change only

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E C DEC-O-LOG Engineering Change Order Log

G938

RK05 Head Position Servo Preamplifier

PROCESSOR TYPE PDP-8 Family and PDP-11 Family

G938-00001 CODE: D CS: E ETCH: F
JAN-72 - PROBLEM 1: Final design of the RK05 positioner requires a change in position servo loop gain to reduce head position settling time and provide optimum system operation.
CORRECTION 1: Increase the position servo loop gain by changing the values of resistors R20 and R23.
PROBLEM 2: Position transducer output offset voltages require circuit compensation.
CORRECTION 2: Derive count pulses from a portion of the circuit unaffected by offset and add level shift diodes to the limit signals.

NOTE: See correction supplement ECO G938-0001A.
In-plant effectivity -03 rework immediately

G938-0001A CODE: D
JAN-72 - PROBLEM: ECO G938-00001 failed to note the addition of resistor R23, 75K, 1/4 watt, 5%.
CORRECTION: Add resistor R23.
In-plant effectivity -03 rework immediately

G938-00002 CODE: D CS: F ETCH: H
JAN-72 - PROBLEM 1: Documentation error connected the **SERVO POSITION** input to **COUNT PULSE FWD** .
CORRECTION 1: Connect resistor R23 to E6 pin 6 not E5 pin 8.
PROBLEM 2: Two different ground symbols are shown.
CORRECTION 2: Correct documentation.
PROBLEM 3: Four resistors were found to be unnecessary.
CORRECTION 3: Delete resistors R12, R34, R68 and R82.
PROBLEM 4: The wrong color handle was called-out in the Parts List.
CORRECTION 4: Use green handle.
PROBLEM 5: Capacitors C2 thru C5 are too close together.
CORRECTION 5: Increase lead spacing to accomodate capacitors 0.23 diameter by 0.50 long.
In-plant effectivity -02 phase-in

G938-00003 CODE: D CS: H ETCH: J
APR-72 - PROBLEM: Some units exhibit marginal tolerance to high temperature testing as shown by failure to position properly. This is caused mainly by a reduction in positioner damping which is caused by a reduction in sine and cosine transducer signals.
CORRECTION: Add a thermistor to the tachometer output to compensate for high temperature by automatically increasing the positioner damping.
In-plant effectivity -03 rework immediately

G938-00004 CODE: D CS: J
OCT-72 - PROBLEM: The velocity adjustment potentiometer, VA , is near the end of its travel on some modules. This prevents the servo adjustment of 3.2 msec from being obtained in some RK05 systems.
CORRECTION: Increase the value of the fixed resistor, R75, which is in series with the VA potentiometer, R76, from 18.2K to 19.6K ohms.
In-plant effectivity -03 rework immediately

G938-C0005 CODE: F CS: K ETCH: K
DEC-72 - PROBLEM: Some modules produce an excessive amount of overshoot, 1 volt or greater on pin A05-AML, on position settling. This causes a **SEEK INCOMPLETE** on maximum seeks when the system starts from a cold start on some systems. There are rework instructions in this FCO which include a test to determine if a system needs this FCO.
CORRECTION: Make the tachometer gain fixed so that constant damping is evident from unit to unit and remove the temperature compensating thermistor that is over compensating. Replace the diode limiters, which are temperature sensitive, with Zener clippers.

NOTE: See correction supplement FCO G938-C005A.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all G938's in RK05's with 1 volt or greater of overshoot.
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

G938-C005A CODE: F
JAN-73 - PROBLEM: The BREAK-IN/EFFECTIVITY date for FCO G938-C0005 cannot be met by production.
CORRECTION: Change the BREAK-IN/EFFECTIVITY date from February 1, 1973 to March 1, 1973.
In-plant effectivity -Changed as noted above.
Field effectivity -Unchanged

H724-00018 CODE: D

SEP-72 - PROBLEM: Part number 90-08856, 250V 15A 50 Hz Duplex Receptacle is not UL approved. Also, there is no way to keep these in stockrooms, where, because of high unit cost, they should be signed out.
CORRECTION: Change #90-08856 to #12-11204.
In-plant effectivity -02 -Phase-in -Move from "90 " class stockroom to "12 " class stockroom.

H724-00019 CODE: D

FEB-73 - PROBLEM: Purchasing wants to obsolete one of two power cord sets that differ only in color.
CORRECTION: Use grey cord set instead of black.
In-plant effectivity -02 phase-in

H724-00020 CODE: P

MAR-73 - CORRECTION: Add part number 70-09286 for cable in heat sink housing and update prints accordingly.
In-plant effectivity -06 documentation change only

H724-C0021 CODE: F

MAY-73 - PROBLEM 1: Fuse holder sometimes covers silk screen.
CORRECTION 1: Change silk screen.
PROBLEM 2: The +5V fuse holder gets excessively hot when the +5V power supply line is loaded to maximum, thereby causing the fuse to derate to a current value lower than the load current.
CORRECTION 2: A new fuse holder, Littlefuse #342-025AL, gray, DEC #12-11348, will replace the +5V fuse holder we now use, black, DEC #90-07212.
PROBLEM 3: Part numbers for 1/8A interlock fuse do not agree on the Circuit Schematic and Parts List.
CORRECTION 3: Change Item #48 to read: "90-08527 Fuse, 0.125A 125V 3AG Slow Blow " .
CORRECTION 4: Correct discrepancies between Circuit Schematic and Parts List and the original Parts List.

NOTE: Both FCO's H724-E0014 and H724-C0021 require power supply disassembly and can conveniently be installed together.
Quick Check -Original black fuse holder replaced with a gray one.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all H724's when +5V fuse holder runs hot, generally only systems with two Omnibuses.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

IDAC

Industrial Data Acquisition and Control

PROCESSOR TYPE PDP-8 & 11 Families

IDAC-00001 **CODE: P**
AUGUST-71 – PROBLEM: Various IDAC configurations require the use of UDC-8, AFC-8, and AFC-11 configuration drawings.
CORRECTION: Replace UDC-8, AFC-8, and AFC-11 configuration drawings with IDAC Arrangement drawing, D-AR-IDAC-0-0.
In-plant effectivity – documentation change only

IDAC-00002 **CODE: P** **ML: A**
APRIL-72 – PROBLEM: IDAC Arrangement drawings do not reflect the change of the H721 power supplies to H740-D's.
CORRECTION: Update IDAC Arrangement drawing D-AR-IDAC-0-0.
In-plant effectivity – update drawings immediately – documentation change only

IDAC-00003 **CODE: D**
MAY-72 – PROBLEM: H721 Power Supplies in IDAC systems are too expensive and do not have power fail capabilities.
CORRECTION: Use H740-D Power Supplies in IDAC systems instead of H721's as per the IDAC arrangement ECO's IDAC-00002 and H964-00007.
In-plant effectivity – build all new AFC8, UDC8, AFC11, and UDC11 systems as per above ECO's effective May 8, 1972.

IDAC-C0004 **CODE: F** **ML: B**
MARCH-74 – PROBLEM: Due to new high current modules, the +5 volt power distribution is inadequate.
CORRECTION: Power distribution losses are being reduced by FCO DD02-C0005. However, additional wiring is required in the IDAC system.

NOTE: In the field, this FCO must be installed in conjunction with FCO's DD01D-C0007 and DD02-C0005. An H740-D Power Supply may be ordered separately if required.
In-plant effectivity – retrofit all units in house. This ECO must be installed in conjunction with FCO's DD01D-C0007 and DD02-C0005.
Field effectivity – retrofit all UDC Files if power problems are present.
(Time To Install And Test 4.0 Hours.) (Documentation $5.00, Parts None)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – NF1223 – FCO/Prints)

IDAC-C004A **CODE: F**
FEBRUARY-74 – PROBLEM: ADD/DELETE sheets missing from FCO IDAC-C0004.
CORRECTION: The eight ADD/DELETE sheets are included in this supplement.
In-plant effectivity – unchanged
Field effectivity – unchanged

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ECO DEC-O-LOG Engineering Change Order Log

IDC8

INDUSTRIAL DATA ACQUISITION SYSTEM

PROCESSOR TYPE PDP-8/E FAMILY

IDC8-00001 CODE: D
APRIL-73 – PROBLEM: Wiring, cable routing, and minor mechanical changes were made to the prototype system.
CORRECTION: Change Unit Assembly drawing to comply with prototype system.
In-plant effectivity -- all systems will be built according to the corrected print.

IDC8-00002 CODE: D DD: A
OCTOBER-73 – PROBLEM: IPG has adopted new color schemes; prints must be updated.
CORRECTION: Correct drawings to show new logos, consoles, side panels, and Arrangement drawing. Also correct miscellaneous drawing errors.
In-plant effectivity – Documentation/design change

IDC8-00003 CODE: P
FEBRUARY-74 – PROBLEM: Part number description is in error.
CORRECTION: Change Item 34, description, from H952-AA to H952-AC.
In-plant effectivity – Documentation change only

IDC8-C0004 CODE: F DD: B
APRIL-74 – PROBLEM: Voltage drop on M851 module, due to large currents of ADU01, causes false operation on I/O modules because of low +5V line voltage.
CORRECTION: Rewire +5V and ground power lines. A G772 was installed in the DD02 system unit to assist in correcting the problem. Refer to FCO DD02-C0005.

NOTE: This FCO must be installed in conjunction with FCO's DD01D-C0007 and DD02-C0005.
In-plant effectivity – This ECO must be installed in all future IDC8-A and IDC8-C systems.
Field effectivity – Retrofit all IDC8's if power problems are present.
(Time to Install and Test 4.0 hours.) (Kit Contents – PF1231 – FCO/prints and parts)

LA30-00088 CODE: M ML: AN
SEPTEMBER-73 – CORRECTION 1: Delete Note #1 and associated dimensions from drawing D-IA-7409848-0-0. It is not necessary to mask and paint because we can silk screen over textured paint.
CORRECTION 2: Increase material thickness to 0.063 inch for the #55-09946 switch bracket.
In-plant effectivity – phase-in by October 1

LA30-089 CODE: M ML: AP
NOVEMBER-73 – PROBLEM 1: Packaging instructions are needed for the LA30 cover to improve the yield rate of covers from vendors to us and from our paint shop to our production area.
CORRECTION 1: Add new packaging instructions for in-plant, inter-plant and vendor packaging to LA30 cover.
PROBLEM 2: Cracking in thin section of cover causes high rejection rate; inserts are pulling out of cover in normal use.
CORRECTION 2: Add 1/8 inch of material to the thin area; change insert to improve strength capabilities; add new process of manufacturing and variation.
In-plant effectivity – phase-in November 30, 1973

LA30-00090 CODE: F ML: AR
NOVEMBER-73 – PROBLEM: Earlier versions of the LK01 keyboard may be unreliable; the current version is both costly to build and to repair.
CORRECTION: Replace #54-09945 LK01 keyboard with #54-10541 LK01-R keyboard. In the field, keyboards at etch revision "E" and earlier are directly replaceable with etch revision "F" and "G" keyboards.
In-plant effectivity – phase-in commencing November 19, 1973 and by March 31, 1974 all keyboards will be LK01-R.
Field effectivity – Retrofit, as required, all LA30's with etch revision "E" and earlier keyboards.
(Time to Install and Test 1.0 hour.) (Documentation $5.00, parts $370.60)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – PF1180 – FCO/prints and parts)

LA30-C0091 CODE: F ML: AS
FEBRUARY-74 – PROBLEM: Noise picked up on the interlock line in the wiring harness is causing LA30 operation failures.
CORRECTION: Add a 0.01 UFD filter capacitor, #70-09786, between the interlock line, A16-R2, and ground, A16-C2, to filter out noise spikes.
In-plant effectivity – Commencing 2-16-74
Field effectivity – Retrofit all LA30's when symptoms are present (Time to Install and Test 1.5 hours.) (Kit Contents – PF1212 – FCO/prints and parts)

LA30-00092 CODE: P ML: AT
FEBRUARY-74 – CORRECTION: Add Packing Instructions and Purchase Specifications to the Parts List, Drawing Index and Unit Assembly drawing.
In-plant effectivity – documentation change only

LA30-00093 CODE: P ML: AU
MARCH-74 – PROBLEM: Paper shortage and greatly increased costs make it difficult to ship 3200 sheets of paper per printer.
CORRECTION: Update Accessory List to require 800 sheets of paper for each printer.
In-plant effectivity – phase-in to commence April 8, 1974, Westfield.

LA30-00094 CODE: D ML: AV WL: L
MARCH-74 – PROBLEM: Implementation of the LA30 "DURA HEAD". The latest print head solenoids are referenced to +10V as opposed to the present head which uses ground.
CORRECTION: Modify the LA30 power harness and LA30 wired assembly. This requires removing three #18 black wires, GND, and adding one #14 green wire, +10V, to the LA30 power harness. It also requires adding two #18 green wires to the wired assembly for +10V reference distribution. The new head is part #70-09488.

NOTE: All orders from the field for replacement heads, even if the original head part number 70-07273 is specified, will be filled by shipment of this new "DURA HEAD", #70-09488.
In-plant effectivity – Westfield, immediately. Ireland, use up existing kits. New kits, with this ECO installed, will be available from Westfield no later than May 1, 1974.

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ECO DEC-O-LOG Engineering Change Order Log

Lab-8/E

Advanced PDP-8/E Lab System

PROCESSOR TYPE PDP-8/E

LAB8E-00001 CODE: M
MAY-71 - CORRECTION: Updates the silk screen for the I/O panel.
In-plant effectivity -03 rework immediately

LAB8E-00002 CODE: P
MAY-71 - CORRECTION: Corrects prints for the AM8-EC , the AM8-ED , and the DK8-EF.
In-plant effectivity -Documentation change only

LAB8E-00003 CODE: M
JUN-71 - CORRECTION: Changes a mechanical dimension tolerance.
In-plant effectivity -01 phase-in

LAB8E-00004 CODE: M
JUN-71 - CORRECTION: Changes tolerances on the weld studs.
In-plant effectivity -01 phase-in

LAB8E-00005 CODE: M
JUN-71 - CORRECTION: Changes a mechanical dimenstion tolerance.
In-plant effectivity -01 phase-in

LAB8E-00006 CODE: M
JUL-71 - CORRECTION: Adds D holes to the clock panel.
In-plant effectivity -06 phase-in

LAB8E-00007 CODE: D ML: B
AUG-71 - PROBLEM 1: LAB8-E options on the PDP8-E do not have a convenient high quality power supply to use.
CORRECTION 1: Define the H945 without the high quality power supply. Define the use of the door mount and the PDP8-E mounted high quality power supply.
PROBLEM 2: High quality power supply in the H945 is too long to mount in the PDP8-E.
CORRECTION 2: Shorten the high quality power supply overall length.
PROBLEM 3: Door mount power supply assembly redundant to existing and easier to build unit.
CORRECTION 3: Redefine the door mount high quality power supply to use existing sub-assembly.
PROBLEM 4: LAB8E-05 with added AM8-EC has added unusable panel.
CORRECTION 4: Define use of the AD8-EA to replace the AD8-ES when AM8-EC is added.
PROBLEM 5: Module utilization list does not show power connections to modules.
CORRECTION 5: Add power connection to modules.
PROBLEM 6: Power supply bracket thickness makes octal socket hard to insert.
CORRECTION 6: Reduce metal thickness of bracket.

NOTE: This ECO is to be installed in conjunction with ECO 8E-00039.
In-plant effectivity -01 phase-in

LAB8E-00008 CODE: P ML: D
OCT-71 - CORRECTION: Orders the use of UL approved power cords.
In-plant effectivity -Documentation change only

LAB8E-00009 CODE: P ML: C
OCT-71 - CORRECTION: Changes the module utilization drawing to reflect the true order of the modules.
In-plant effectivity -Documentation change only

LAB8E-00010 CODE: M ML: E
NOV-71 - CORRECTION: Adds insulating grommets and holes for the power supply adjustment.
In-plant effectivity -Rework immediately

LAB8E-00011 CODE: P ML: F
NOV-71 - PROBLEM 1: An option cabinet is needed to be specified for the LAB8-E.
CORRECTION 1: Specify an H961-CA cabinet and include in the LAB8-E drawing index and the parts list.
PROBLEM 2: Wrong power cord is called out on the precision analog power supply assembly.
CORRECTION 2: Change the power cord part number.
In-plant effectivity -Documentation change only

LAB8E-00012 CODE: P
JAN-72 - PROBLEM: Revision 0 of 70-08477 , which is the higher assembly of the 70-08482 , was inactivated by ECO LAB8E-00007. Assembly 70-08482 is still on file as an active subassembly.
CORRECTION: Inactivate all drawings pertaining to the 70-08482 power supply assembly. Scrap any models that might exist of this unit.
In-plant effectivity -Documentation change only

LAB8E-00013 CODE: P ML: H
JAN-72 - CORRECTION: Updates the master drawing list and the parts list.
In-plant effectivity -Documentation change only

LAB8E-D0014 CODE: F
APR-72 - PROBLEM 1: The floating end of the shield used on the input lead to the AD8-EA and the AM8-EA can become a source of memory frequency pick-up during system test and installation.
CORRECTION 1: Ground the shield at the signal source end for better performance. The difference in chassis potential should be minimized by ground strapping the unit being measured to the computer to avoid ground loops. Ship a 5 foot length of shielded cable with the AD8-EA and the AD8-ES to facilitate this. Do not mark up prints in production to reflect this change
PROBLEM 2: The VC8-E engineering specification erroneously specifies placing the M869 polarity switch in the -Position when installing a Tektronix RM503 oscilloscope.
CORRECTION 2: The Tektronix RM503 requires the switch in the +position. Correct the specification.
In-plant effectivity -02 phase-in
Field effectivity -All LAB8-E print sets
(This FCO Is No Charge To Customer (Kit Contents -FCO/Prints

LAB8/E-D0015 CODE: F
JUN-72 - PROBLEM: Line fuse sometimes blows on power up surge.
CORRECTION: Replace 3/4 amp fast blow with 1 amp slow blow fuse.

NOTE 1: Replace decal if available , otherwise correct old decal. NOTE 2: The symptom is that upon power up , the 3/4 amp fuse on power supply assembly 70-08477-0-0 blows.
In-plant effectivity -03 rework immediately
Field effectivity -All LAB8/E as required
(Time To Install And Test .5 Hour. (This FCO Is No Charge To Customer (Kit Contents -FCO/Prints And Parts

LINC8-00001 CODE: D
SEPTEMBER-68 – CORRECTION: Add 6 inch variation of 7405554 Cable, W034 to W034, for use with PDP-9/L.
In-plant effectivity – phase-in

LINC8-00002 CODE: P
DECEMBER-68 – PROBLEM: Incorrect connector called out for LINC-8 Data Terminal Panel. These are provided as customer convenience and production has built from model.
CORRECTION: Correct drawings A-PL-7005168-0-0 and E-AD-7005168-0-0 accordingly.
In-plant effectivity – documentation change only

LINC8-C0003 CODE: F ML: B
MAY-72 – PROBLEM: WORD COUNT OVERFLOW, WCO is not sent out on the bus during an increment break when overflow occurs. This becomes a problem when operating a floating point processor, FPP12, on a LINC-8.
CORRECTION: Add an S111 in slot J21 of the processor; this will supply the logic necessary to provide WCO during a WORD COUNT or an INCREMENT BREAK cycle. The add/delete's are as follows:
DELETE E10S to J05S and E10S to E07M; ADD E07M to J05S, E08V to J21K, D31L to J21L, J21P to J21N, J21N to J21D, E10M to J21E, J21J to J21H, and J21H to E10S.
In-plant effectivity – retrofit as required for FPP12 or FPP12-A.
Field effectivity – retrofit when an add-on FPP12 or FPP12-A is ordered.
(Time to Install and Test 1.5 hours.) (Kit Contents – FCO/prints and parts)

LINC8-C0004 CODE: F ML: F WL: P
APRIL-74 – PROBLEM 1: LINC8-L external break devices cannot address extended memory.
CORRECTION 1: Add gating to allow external EA 1-3 to access processor Extend Address lines.
PROBLEM 2: Systems with more than 8K of memory have poor intermemory margins.
CORRECTION 2: Change GMA gating to give addressing more settling time.
PROBLEM 3: LINC Tape Control unable to accept marginal LINC tape mechanical variations.
CORRECTION 3: Change LINC tape gating for better margins.
CORRECTION 4: Correct drawing errors and update prints.

NOTE: The following modules are added by this FCO: an S203 in slot MJ33; one each S123 in slots MC37, MD38, MD39, ME38, ME39, MF37, MF38, and MF39; an R113 in slot LH05; one each S107 in slots LB19 and MH12; an S111 in slot MJ18; an S202 in slot MH28; an S602 in slot MJ24, the add/delete's are as follows:
DELETE LB19D to LJ36N, LE02D to LE03U, LE02E to LE03N, LE02H to LE03H; ADD LA13D to LB19K, LA13E to LB19H, LA13H to LB19E, LB19J to LH05M, LB19F to LH05J, LB19D to LH05E, LH05H to LH05D, LH05L to LH05H, LH05D to LJ36N, LE03U to LH05N, LE02D to LE03U, LE03N to LH05K, LE02E to LE03N, LE03H to LH05F, and LE02H to LE03H. These add/delete's are to be done only if the 7605427's interface is not in the system. If the 7605427 is present, the wiring changes will have been made and the R113 in slot LH05 and the S107 in slot LB19 will have been installed. The DELETE LB19D to LJ36N is to be made only if FCO LINC8L-C0006 has been installed.
In-plant effectivity – none
Field effectivity – retrofit all LINC8's with external break devices and extended memory. This FCO parallels, in part, previous 7605427 interfacing.
(Time to Install and Test 1.0 hour.) (Documentation $5.00, parts $376.00)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – PF1240 – FCO/prints and parts)

LINC8-C0005 CODE: F
APRIL-74 – PROBLEM: DW8-E is incompatible with LINC-8.
CORRECTION: Change LINC-8 break input gating.

NOTE: This ECO is optional; no in-plant documents will change.
In-plant effectivity – retrofit immediately
Field effectivity – Retrofit all LINC-8's with DW8-E, RK8-F, and no FPP12.
(Time to Install and Test 8.0 hours.) (Documentation $5.00, parts $62.80)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – PF1248 – FCO/prints and parts)

LINC8-D0006 CODE: F ML: H
MAY-74 – PROBLEM 1: Console switch bounce causes multiple increments of the PC register.
CORRECTION 1: Turn off manual timing chain after first switch contact. An S202 module is added in slot PH34 and a 6.8 MFD capacitor, #10-05306, is added between pins PH32H, minus, and PH32J, plus. The add/delete's are as follows:
DELETE PH32C to PJ32C, PJ32C to PJ32S, PH34C to PJ34C, PA35F to PA35P, PB35C to PC35C, PA35C to PA35F, and PA35P to PB35C;
ADD PH32F to PJ32C, PH32C to PH32F, PJ32C to PJ32S, PH34L to PJ34C, PH34C to PH34L, PA35F to PB35C, PB35C to PC35C, PH32J to PH32K, PH32E to PD32E, PH34F to PH32M, PH34K to PD31E, and PH34J to PA35P.
PROBLEM 2: Prints in error.
CORRECTION 2: Correct prints.
In-plant Effectivity – Retrofit all LINC-8's.
Field Effectivity – Retrofit all LINC-8's.
(Time to Install and Test 0.5 Hour.) (Documentation $5.00, Parts $28.55)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents –PF1299 – FCO/Prints and Parts)

LINC8-D006A CODE: F
JUNE-74 – PROBLEM: ECO LINC8-00006 incorrectly indicates that a 6.8 MFD capacitor, 10-05306 is to be installed.
CORRECTION: The capacitor should be connected between pins PH32H, minus, and PH32J, plus.
In-plant Effectivity – unchanged
Field Effectivity – unchanged.

LINC8M-E0007 CODE: F WL: J

JAN-73 - PROBLEM 1: **MEMORY STROBE ENABLE** is not settled when the W300 delay pulse fires for **STROBE** .
CORRECTION 1: Use the delay of the B360 before looking at **MEMORY STROBE ENABLE** .
PROBLEM 2: Noise on read/write lines.
CORRECTION 2: Add a 4.7 ohm resistor to reduce noise.
PROBLEM 3: W300's are noise sensitive.
CORRECTION 3: Add 3.3K ohms to +10V to reduce sensitivity.
PROBLEM 4: Noise and loading of **MEM START** pulse by **READ** 1 circuit.
CORRECTION 4: Isolate **MEM START** from READ .
In-plant effectivity -03 retrofit
Field effectivity -Retrofit all LINC-8's.
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $. 60 , DEC Labor $ 45.00) (Kit Contents -FCO/Prints And Parts)

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EC DEC-O-LOG Engineering Change Order Log

LK01

KEYBOARD

PROCESSOR TYPE ALL

LK01-D0001 CODE: F CS: B
APR-72 - CORRECTION 1: Delete the existing rom number and add the correct number.
CORRECTION 2: Corrects parts list to show correct quantities.
CORRECTION 3: Change a timing capacitor to eliminate a timing problem on the 8/E interface which sometimes produces double characters.

NOTE: See supplement FCO LK01-0001A.
In-plant effectivity -03 rework immediately
Field effectivity -All LK01 as required
(Time To Install And Test .1 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) supplement FCO LK01-0001A will also be included in the kit

LK01-0001A CODE: F
APR-72 - CORRECTION: Corrects errors on FCO LK01-D0001 ; corrects the rom part number on the parts list and changes the drawing sheet number on drawing D-CS-5409917-0-1.
In-plant effectivity -Documentation change only
Field effectivity -Unchanged

LK01-00002 CODE: P
APR-72 - PROBLEM: LK01 schematic number does not agree with LK01 documentation.
CORRECTION: Change the circuit schematic number to conform to documentation.
In-plant effectivity -Documentation change only

LK01-00003 CODE: P
MAY-72 - CORRECTION: Correct the print revision , the part number , and add the correct number of windings.
In-plant effectivity -Documentation change only

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LPC8-B

Interface to Photon 713-200

PROCESSOR TYPE PDP-8 Family

LPC8B-B0001 CODE: F DD: A WL: A

MAY-73 - PROBLEM: Device codes 64 and 67 conflict with existing options.

CORRECTION: Change device codes 64 and 67 to 34 and 35. An M623 Bus Driver module is added in slot A05.

In-plant effectivity -03 retrofit immediately

Field effectivity -Retrofit all LPC8-B's

(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

LP01-00014 CODE: P ML: H
OCT-72 - PROBLEM: Documentation not adequate for shipping software.
CORRECTION: Obsolete Software List and add Accessory List to the LP01 print set.
In-plant effectivity -06 -Documentation change

LP01-C0015 CODE: F
SEP-73 - PROBLEM: To prevent erroneous zone changes.
CORRECTION: Add Data Products Field Change kit #6328 which implements Data Products ECO's 18367, 18412, and 18478. The reworking involves wiring changes to the 212801-2 back panel: DELETE A005 25 1 to A009 21 1, signal **CONT** ; ADD A004 37 1 to A009 21 1, signal **PFCM** . The 212530-1 circuit card, in slot 4 in the card cage assembly, is to be reworked as follows: Cut etch from Z12 pin 9 to Z16 pin 1. Add jumper from Z12 pin 9 to Z18 pin 6 using 30 AWG wire. Add jumper from Z17 pin 2 to connector pin 37 using 30 AWG wire.
In-plant effectivity -None
Field effectivity -Retrofit LP01's at next PM ; serial numbers affected are: 001 thru 1304, 1306 thru 1435, 1438, 1439, 1441 thru 1459, 1461, 1463 thru 1506, 1508 thru 1511, and 1513 thru 1516.
(Time To Install And Test 1.0 Hour.) (Kit Contents -NF1134 - FCO/Prints)

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LP02

Data Products
Line Printer

PROCESSOR TYPE All

LP02-A0001 CODE: F
JUN-71 - PROBLEM: This is a DEC distribution of a vendor FCO : Data Products #6286. If the +22V supply fails, a fuse blows for example, a current leakage path is created which turns on the hammer driver circuits to 100% duty cycle which causes overheating of the hammer drivers.
CORRECTION: Add a circuit which senses the +12 volt line condition ; +12V is derived from +22V. If either the +12V or the +22V line fails, the leakage current from +28V is clamped to ground. Kit #214278-2 is supplied by Data Products.
In-plant effectivity -Retrofit immediately
Field effectivity -Retrofit all LP02's
(Time To Install And Test 2.0 Hours.) (Kit Contents --FCO/Prints And Parts)

LP02-00002 CODE: D
JUN-71 - PROBLEM: The Automatic Top of Form function, as designed into the Data Products printer, is correct only for paper whose folds are eleven inches apart. In many of our installations, the forms used are not eleven inches long and therefore, the Automatic Top of Form is initiated at an undesirable position on the paper.
CORRECTION: Disable the Automatic Top of Form.
In-plant effectivity -Phase-in

LP02-C0003 CODE: DF
NOV-71 - PROBLEM: There is no means of holding the printer top glass up for service.
CORRECTION: Install Data Products FCO #6173.
In-plant effectivity -Retrofit immediately
Field effectivity -Retrofit serial numbers 2002,2011,2013, 2015,AND 2019
(Time To Install And Test .5 Hour.) (Kit Contents --FCO Only And Parts)

LP02-00004 CODE: D
APR-72 - PROBLEM: A paper receptacle is to be included on all LP02 Line Printers.
CORRECTION: Add necessary drawings to include paper receptacle.
In-plant effectivity -Phase-in to all LP02's after April 30, 1972

LP02-0004A CODE: M
MAY-72 - PROBLEM: Break-in/effectivity incorrect on ECO LP02-00004.
CORRECTION: Correct break-in/effectivity to read "when available ".
In-plant effectivity -02 phase-in

LP02-00005 CODE: P
OCT-72 - CORRECTION: Add Accessory List A-AL-LP02-0-1 to the LP02 drawings.
In-plant effectivity -Documentation change only

LP02-A0006 CODE: F
AUG-73 - PROBLEM: This is a DEC distribution of a vendor FCO : Data Products EO 19443, kit #6348.
CORRECTION: It eliminates a personnel hazard by adding a guard over the pick off bar, which will act as a cutter if not covered.
In-plant effectivity -03 -Retrofit immediately, August 6, 1973. Retrofit only those printers listed by vendor serial number.
Field effectivity -Retrofit all units as itemized in the vendor FCO.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

LP02-D0007 CODE: F
SEP-73 - PROBLEM: This is a DEC distribution of a vendor FCO ; Data Products FCO #6334. A timing problem in the AT-18 module can cause the second of two identical, consecutive characters, not to print.
CORRECTION: Install Data Products Field Change Order #6334. The rework procedure for the #214560-1 card, AT-18, in slot A20, is as follows: On the circuit side of the board, cut etch between Z9-10 and P1-6 at the Z9-10 end. On the component side of the board, add jumper from Z13-2 to P1-6 and from Z13-1 to Z13-10.
In-plant effectivity -Retrofit immediately
Field effectivity -Retrofit LP02's as required and as specified by the listing of affected serial numbers which is included in the ECO.
(Time To Install And Test 1.0 Hour.) (Kit Contents -PF1077 - FCO/Prints And Parts)

LP02-A0008 CODE: F
MARCH-74 – PROBLEM: Excessive hammer current has resulted in destruction of many hammers. This is a potential "fire hazard" should the burning hammers ignite the paper.
CORRECTION: Install Data Products kit #231108-1 into all units that were shipped without this feature. The purpose of the kit is to detect erroneous hammer drive current which results in a malfunction in a hammer or hammer drive circuit. In event of failure, the printer power is interrupted.
In-plant effectivity – retrofit all units that do not have hammer current sensing kits.
Field effectivity – retrofit all LP02's
(Time to Install and Test 1.5 hours.) (Kit Contents – PF1219 – FCO/prints and parts)

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LP05

DATA PRODUCTS
2230 LINE PRINTER

PROCESSOR TYPE 8 FAMILY, 11, 12, 15

LP05-C0001 **CODE: F**

AUGUST-74 – PROBLEM: This is a DEC distribution of a vendor FCO: Improve stability in hammer bank actuator. Without this FCO, hammer bank instability may be evident; the bank will oscillate after moving left or right.

CORRECTION: Install data products FCO kit #6392 in LP05's with the following serial numbers: C0039, C0097, C0178, C0179, C0357, C0358, C0359, C0360, C0361, C0362, C0364, C0365, C0366, C0367, C0368, C0369, C0370, C0371, C0372, C0373, C0374, C0375, C0376, C0504, C0505, C0506, C0507, C0508, C0509, C0510, C0511, C0512, C0513, C0514, C0515, C0516, C0517, C0518.

QUICK-CHECK: Aluminum clamp on hammer bank coil.

In-plant effectivity – Retrofit according to serial number list above.

Field effectivity – Retrofit LP05's in accordance with listing of serial numbers affected.

(Time To Install And Test .5 Hour.) (Kit Contents – PF1308 – FCO/Prints and Parts)

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Engineering Change Order Log
DEC-O-LOG

LP08

Line Printer and Control

PROCESSOR TYPE PDP-8/L, PDP-8/I, and PDP-12

LP08-00001 CODE: P
JAN-70 - CORRECTION: Correct dimensions on mechanical drawings.
In-plant effectivity -06 documentation change only

LP08-00002 CODE: P
JAN-70 - PROBLEM: Male and female connectors for plug not specified; crimping tool not specified.
CORRECTION: Male connector labeled; part numbers of crimping tools specified on drawing D-IA-700606-0-0.
In-plant effectivity -06 documentation change only

LP08-00003 CODE: M
FEB-70 - CORRECTION 1: Change leveler because present leveler does not do the job.
CORRECTION 2: Change two "A " holes in items 3 and 4 from .375 Diameter to .406 Diameter on drawing E-IA-7407811-0-0.
In-plant effectivity -Phase-in 2-5-70

LP08-00004 CODE: M
FEB-70 - PROBLEM: The paper guide drops into top cover too far.
CORRECTION: Add spacer to paper guide.

NOTE: This ECO is cancelled by ECO LP08-00006.
In-plant effectivity -All LP08's

LP08-00005 CODE: D WL: A
FEB-70 - PROBLEM: BMB ' S for M102 not wired correctly or shown on print correctly.
CORRECTION: Change drawing D-BS-LP08-N-01 and Wire List.

NOTE: This ECO creates LP08-FB ML revision "B ".
In-plant effectivity -All LP08's #1 thru #39 and future

LP08-00006 CODE: P
FEB-70 - CORRECTION: Cancels ECO LP08-00004.
In-plant effectivity -Cancelled

LP08-00007 CODE: M
MAR-70 - CORRECTION: Call-out correct number of holes in drawing D-MD-7407814-0-0.
In-plant effectivity -All future LP08's

LP08-00008 CODE: M
MAR-70 - CORRECTION 1: Add correct dimensions for lower hinge.
CORRECTION 2: Correct part number for item #17.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC , and -HD ML revisions "A " .
In-plant effectivity -All future LP08's

LP08-00009 CODE: M
MAR-70 - PROBLEM 1: Hardware holding line printer to frame is not called-out.
CORRECTION 1: Add section view to drawing. Call for screws and kep-nuts.
PROBLEM 2: LP08 terminology on Parts List incorrect.
CORRECTION 2: Correct LP08 terminology on Parts List.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "B ".
In-plant effectivity -All future LP08's

LP08-00010 CODE: P
MAR-70 - CORRECTION 1: Change kep-nut part number to correct part number on Parts List.
CORRECTION 2: Remove the word "thk " from note #1 on the FRAME TO SKID print. Correct item #2 on FRAME TO SKID print.
In-plant effectivity -Print change only

LP08-00011 CODE: M
MAR-70 - PROBLEM: Short horizontal support for LP08 paper guide, item #3 on print, has incorrect length.
CORRECTION: Change to correct length on drawing D-IA-7407840-0-0.
In-plant effectivity -All LP08's

LP08-00012 CODE: P
APR-70 - PROBLEM: Side #1 and side #2 of item #1, Data Products interface cable, are reversed on print.
CORRECTION: Correct print as necessary.
In-plant effectivity -06 documentation change only

LP08-00013 CODE: M
APR-70 - PROBLEM: 1/4 x 20 kep-nuts securing LP08 printer frame to skid become loose when polyethylene skid cushioning deforms.
CORRECTION: Replace 1/4 x 20 kep-nots with 1/4 x 20 nylok self locking nuts
In-plant effectivity -Phase-in immediately

LP08-00014 CODE: D WL: B
APR-70 - PROBLEM 1: Elongate strobe to meet Data Products specifications.
CORRECTION 1: Demand line is now used to terminate strobe time.
CORRECTION 2: Data lines terminated at line printer end.

NOTE 1: See correction supplement ECO LP08-00017. NOTE 2: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "D ".
In-plant effectivity -All LP08's #1 thru #55 and future.

LP08-00015 CODE: M
MAY-70 - PROBLEM: Box of paper will not fit into frame.
CORRECTION: Lower paper holder.
In-plant effectivity -All future LP08's

LP08-00016 CODE: D
MAY-70 - PROBLEM: Present interface cable lacking interlock signal wires.
CORRECTION: Add two interconnections for interlock.
In-plant effectivity -Phase-in as of 5-13-70

LP08-00017 CODE: D WL: C
MAY-70 - PROBLEM: Wrong side of character flag gated for skip per ECO LP08-00014.
CORRECTION: Change gating as shown on revised Block Schematic drawing D-BS-LP08-N-01.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "E ".
In-plant effectivity -All LP08's #1 thru #86 and future

LP08-00018 CODE: P
MAY-70 - PROBLEM: PDP-8 line printer and pedestal can be used by other product lines but PDP-8 documentation needs to be changed in order to accomplish this.
CORRECTION: New option (LP01) being generated in drafting so PDP-8 type line printer and pedestal will be adaptable to other product lines. Update LP08 print set to include this new option.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "F ".
In-plant effectivity -06 documentation change only

LP08-00019 CODE: P
JUN-70 - PROBLEM: Drawing which shows assembly of LP08 frame to shipping skid not included on LP08 Master Drawing List.
CORRECTION: Add Assembly Drawing D-AD-7505037-0-0 and Parts List A-PL-7505037-0-0, the drawings which are affected.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "H ".
In-plant effectivity -Documentation change previously implemented

LP08-00020 CODE: P
JUL-70 - CORRECTION 1: Corrects the Master Drawing Lists for LP08-FB, LP08-FC, LP08-HB, and LP08-HC, which have wrong negative and/or positive designations.
CORRECTION 2: Corrects the LP01 call-out on the LP08 Parts List.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "J ".
In-plant effectivity -Documentation change only

LP08-00021 CODE: P WL: D
OCT-70 - CORRECTION 1: Corrects errors on drawings D-BS-LP08-N-01 and D-BS-LP08-P-01.
CORRECTION 2: Corrects variations on Master Drawing Lists to agree with Option Designation List and Assembly Drawing.
CORRECTION 3: Adds Test Procedure and Software Kitting List to print set.
CORRECTION 4: Resistor changed on drawing D-AD-7006716-0-0.
CORRECTION 5: Corrects errors on Wire Lists.
CORRECTION 6: Corrects errors on Acceptance Criteria A-SP-LP08-0-3.

NOTE: This ECO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "K ".
In-plant effectivity -06 documentation change only

LP08-B0022 CODE: DF WL: E
DEC-70 - CORRECTION 1: Add 132 column versions of the LP08, -JA thru -KD , to the LP08 print set.
CORRECTION 2: Corrects inputs B04H1 and B04J1 which are reversed. This permits operation with the M102 in a negative system.
CORRECTION 3: Corrects Winchester part number on cable print.

NOTE: This FCO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "L "; also creates LP08-JA, -JB, -JC, -JD, -KA, -KB, -KC, and -KD ML revisions "0 ".
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit LP08-FC's #10, #11, #16, #17, #21, #25 and #27; LP08-FD's #13, #14, #19, and #20; LP08-HC's #10 and #11.
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

LP08-E0023 CODE: F WL: F
JAN-71 - PROBLEM: If printer power is "off " while computer is "on ", interrupts are generated because **READY** from printer floats.
CORRECTION: Disable interrupts from LP08 by having **POWER CLEAR** disable interrupts instead of enabling them.

NOTE: This FCO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "M "; also creates LP08-JA, -JB, -JC, -JD, -KA, -KB, -KC, and -KD ML revisions "A " .
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all LP08's
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 15.00) (Kit Contents -FCO/Prints)

LP08-B0024 CODE: F WL: H
JAN-71 - PROBLEM: Inputs B05E2 and B05K2 are not tied to +3 as shown on the Circuit Schematic.
CORRECTION: Tie B05E2 and B05K2 to +3 at B06A1.

NOTE 1: Operational symptom; failure of an LPC instruction. This FCO may have been effectively implemented in production; if a wire is connected B05K2 to B04H1 it should be removed and replaced as indicated.
NOTE 2: This FCO creates LP08-FA, -FB, -FC, -FD, -HA, -HB, -HC, and -HD ML revisions "N "; also creates LP08-JA, -JB, -JC, -JD, -KA, -KB, -KC, and -KD ML revisions "B ".
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all LP08's
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

LP08-B0025 CODE: F
MAY-71 - PROBLEM 1: **DEMAND** and **READY** lines float when printer power is off, causing an erroneous skip.
CORRECTION 1: Clamp **DEMAND** and **READY** lines.
PROBLEM 2: Engineering Specification does not include 132 column versions.
CORRECTION 2: Add LP08-J and -K versions.
PROBLEM 3: Test Procedure doesn't include 132 column versions.
CORRECTION 3: Add 132 column versions to Test Procedure.
PROBLEM 4: Variation type Master Drawing List required.
CORRECTION 4: Obsolete sixteen existing Master Drawing Lists and replace with LP08-0 Master Drawing List.
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all LP08's
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $ 3.70 , DEC Labor $ 15.00) (Kit Contents -FCO/Prints And Parts)

LP08-00026 CODE: P ML: A
NOV-71 - PROBLEM 1: No variation on NAME PLATE print #7406135 for terra cotta logo.
CORRECTION 1: Add "dash one " version to name plate.
CORRECTION 2: Change LP08 Parts List to call-out "dash one " version of name plate.
In-plant effectivity -06 documentation change only

LP08-00027 CODE: D ML: B WL: J
MAR-72 - PROBLEM: No vertical format control for LP08 line printers.
CORRECTION: Change interface to output paper control signal.
In-plant effectivity -03 rework

LP08-00028 CODE: P
MAR-72 - PROBLEM: Item #3 on the 7407812 front door Parts List is incorrect.
CORRECTION: Change item #3 to: Foam 3/8 x 3/8 #9008274.
In-plant effectivity -06 documentation change only

LP08-00029 CODE: M
MAR-72 - PROBLEM: Paper catch #7407815, item #3, not a stock item; there are no holes for painting.
CORRECTION: Change item #3 to 3/8 x 3/8 foam and add two holes.
In-plant effectivity -02 phase-in

LP08-00030 CODE: P ML: C
JUN-72 - PROBLEM 1: No Accessory List in print set.
CORRECTION 1: Add Accessory List to customer print set.
PROBLEM 2: H716 Power Supply print no longer needed as shipping software.
CORRECTION 2: Correct Acceptance Procedure.
In-plant effectivity -Documentation change only

LP08-D0031 CODE: F ML: D WL: K
SEP-72 - PROBLEM: Losing data bits (BAC ' S) intermittently due to insufficient **OPTION SEL H** time in negative bus LP08'S; incorrect characters are printed.
CORRECTION: Remove the signal **OPTION SEL H** from the BAC/BMB receiver card and enable the leg with +3V.
In-plant effectivity -03 rework
Field effectivity -Retrofit all LP08's as required, especially on PDP-8
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit r contents -FCO/Prints)

LP08-00032 CODE: D
DEC-72 - PROBLEM: High noise level existing in the LP08 line printer cable, #70-08755.
CORRECTION: Twenty-four conductor cable #70-08755 is to be assembled from components described in this ECO.
In-plant effectivity -All existing cables should be scrapped by March 16, 1973.

LP08-B0033 CODE: F ML: E WL: L
FEB-73 - PROBLEM 1: Bit 05 must be set to select channel 1 following a MODE instruction. No other channels have this restriction
CORRECTION 1: Allow 001 to select channel 1 if already in VFU MODE .
PROBLEM 2: Empties paper supply if a channel greater than 7 is selected.
CORRECTION 2: Force MSB of channel select bits to ground if in VFU MODE and data bit 07 is zero.
CORRECTION 3: Add mention of LP08-LA, -LB, -LC , and -LD on appropriate prints.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all LP08's with vertical format control.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

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Engineering Change Order Log
DEC-O-LOG

LT73

IBM 735 SELECTRIC INTERFACE

PROCESSOR TYPE 8 FAMILY

LT73-00001 CODE: D ML: A WL: A
NOV-71 - PROBLEM: The present LT73 is designed to be used only with two magnet ribbon shift and energize to lock IBM Selectric options. Some customers want one magnet shift and/or energize to unlock options.
CORRECTION: Add an M908 jumper board in slot B14 to allow the LT73 to be used with any combination of lock and ribbon shift options.
In-plant effectivity -Rework immediately

LT73-00002 CODE: D ML: B
MAR-73 - PROBLEM: Design improvements needed to satisfy customer requirements.
CORRECTION: Create new variation and add design improvements to existing print set.
In-plant effectivity -Phase-in

LT73-00003 CODE: D ML: C
OCT-73 - PROBLEM 1: Production of cable inefficient because cable is in two parts.
CORRECTION 1: Combine two parts of cable, #70-08539 and #70-08540, into one cable, #70-09522.
CORRECTION 2: Correct drawing errors.
In-plant effectivity -New cables will be used when stock of old cables in exhausted.

LT73-D0004 CODE: DF ML: D
MAY-74 - PROBLEM 1: Ordering of replacements for "W960 ", Power Fail Relay Board, located in B20, is very difficult due to improper documentation.
CORRECTION 1: Replace "W960 " handle with magenta handle marked P/F, POWER FAIL and stenciled with part number 70-09879 on back of handle. Add Assembly Drawing E-IA-7009879-0-0. The "W960 " is now identified as #70-09879.
CORRECTION 2: Correct pin assignment on cable drawing, D-IA-7009522-0-0.
In-plant effectivity -Retrofit immediately
Field effectivity -FCO distribution to Regional Offices for information purposes; customer print sets may be updated as required.
(Time To Install And Test N/A) (Kit Contents -NF1251 -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

M517

6 Circuit Bus Converter

PROCESSOR TYPE 8 Family

M517-B0001 CODE: F CS: A

MAY-71 - PROBLEM 1: Ground noise at pin "V " enabling level causes loss of data when a DW08-A is used with a DM04.
CORRECTION 1: Remove capacitors C2 thru C7.
PROBLEM 2: Typographical error on the Circuit Schematic: Pin letter "V " is shown twice; the "C, T, U, V GND " terminal is incorrectly labeled.
CORRECTION 2: Remove "V " from terminal "C, T, U, V GND " ; "C, T, U GND " is correct.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M517's in DW08-A's used on PDP-8/E or if symptoms are present.
(Time To Install And Test .8 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 25.00) (Kit Contents -FCO/Prints)

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EC DEC-O-LOG Engineering Change Order Log

M633

Negative Bus Module

PROCESSOR TYPE Family of 8

M633-00001 CODE: D CS: C

JAN-71 - PROBLEM: Documentation does not allow for manufacturing this etch board with griplets.
CORRECTION: Change associated documentation to allow for griplets.
In-plant effectivity -01 phase-in

M633-C0002 CODE: F CS: D

JUN-72 - PROBLEM: DEC 3639B is being overworked when driving a DM01 because the VECO of 6 volts is exceeded by driving 1.5K to -15V.
CORRECTION: Change Q1 thru Q12 to DEC 6534B; they have a VECO of 40.
In-plant effectivity -All M633 beginning august 1, 1972
Field effectivity -Rework all M633 used to drive a DM01
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

M750

Line I/O Control Module

PROCESSOR TYPE PDP-8

M750-00001 CODE: D CS: A
MAR-69 - PROBLEM: Test points needed to facilitate auto test of M750.
CORRECTION: Bring points "A " and "B " to available pins.
In-plant effectivity -02 phase-in

M750-00002 CODE: D
MAR-69 - PROBLEM: Resistors R1 and R2 are of too high a value to hold E3 in the correct state when input is left open.
CORRECTION: Change R1 and R2 from 1.5K to 390 ohms.
In-plant effectivity -03 rework immediately

M750-B0003 CODE: F CS: C
NOV-70 - PROBLEM: Improper pin utilization: Pin N2 is being used as a test point. In the DC08 system, pin N2 is used as a data input junction. An indication of an unmodified M750 in a system running a diagnostic is an IOT TTI error, or LSW errors will be experienced. Usually LSW expected 3060 octal while the actual LSW will be 4---octal.
CORRECTION: Eliminate conflicting usage of pin N2 by cutting etch on all boards in the field; rework all in-plant boards by cutting the etch; use up unassembled boards by cutting the etch to N2 and installing a split lug as a test point.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M750's
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

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Engineering Change Order Log
DEC-O-LOG

M837

Memory Line Share Extension Module

PROCESSOR TYPE PDP-8/E [KM8-E]

M837-C0003 CODE: F
OCT-71 - PROBLEM: Unable to field retrofit logic modifications of M837 (etch revision "B ", CS revision "B ") implemented in-plant by ECO M837-00001. ECO M837-00001 is not available for field distribution; all details required for field implementation are included in this FCO.
CORRECTION: Provide field retrofit instructions.
In-plant effectivity -N/A
Field effectivity -Rework M837's, CS revision "B " and earlier when used with time shared PDP-8/E.
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

M837-C0004 CODE: F CS: E
FEBRUARY-74 – PROBLEM: When accessing memory in a Data Field other than the program Instruction Field at the time POWER OK goes false, sometimes the Data Field location is transferred to the same location in the Instruction Field.
CORRECTION: Change the DF ENABLE flip-flop direct clear from INITIALIZE to POWER NOT OK – RUN NOT – TS1. The rework procedure is as follows: For etch "D", CS "D" and earlier, cut etch at E17 Pin 13. Add wire from E17 Pin 13 to E13 Pin 1. FCO M837-B0002 must be installed on etch "C", CS "C".
In-plant effectivity – rework all modules in-plant by May 1, 1974.
Field effectivity – rework all M837's when symptoms are present.
(Time To Install And Test .5 Hour.) (Kit Contents – NF1208 – FCO/Prints)

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ECO DEC-O-LOG Engineering Change Order Log

M839

Synchronous Modem Interface

PROCESSOR TYPE PDP-8/E, PDP-8/F, and PDP-8/M

M839-A0001 CODE: DF CS: H ETCH: J
NOV-71 - PROBLEM 1: Intermittent race condition when using modem timing, causing intermittent hang condition in one access address.
CORRECTION 1: Correct race by using **RESET ACESS ADD INCR** signal to clock **ACC ADD CONTROL** flip-flop, E57, E57 pin 11 to E31 pin 11. Add **INITIALIZE** to E52 pin 13.
PROBLEM 2: Signal names not on prints.
CORRECTION 2: Add signal names as indicated.
PROBLEM 3: Board not to production standards.
CORRECTION 3: Relayout etch to new revision "J ." to bring up to production standards for Production Release.

NOTE 1: This FCO must be installed in conjunction with FCO M866-A0003.

NOTE 2: See continuation supplement FCO M839-A001A.
In-plant effectivity -03 rework immediately.
Field effectivity -Rework all M839's in DP8-EA.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO Only) Supplement FCO M839-A001A will also be included in the kit.

M839-A001A CODE: DF
JAN-72 - PROBLEM 1: Data Break logic can malfunction, terminating a transmit cycle too soon.
CORRECTION 1: Change READ/WRITE flip-flop from RS to CD .
PROBLEM 2: IDLE MODE logic does not work properly.
CORRECTION 2: Logically AND the **COUNT RESET** signal with **TOGO TRUE** signal to clock the **TGO** flip-flop.
PROBLEM 3: Print has signal name errors.
CORRECTION 3: Add signal name.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

M839-B0002 CODE: DF CS: J ETCH: K
MAR-72 - PROBLEM 1: Bus errors caused **CLEAR TO SEND** to occur asynchronously to **TX CLOCK** .
CORRECTION 1: Gate **CLEAR TO SEND** and **REQUEST TO SEND OR IDLE** to occur on the trailing edge of the transmit clock pulse.
CORRECTION 2: Upgrades the readability of the Assembly Hole drawing.

NOTE: See continuation supplement FCO M839-B002A.
In-plant effectivity -03 rework immediately
Field effectivity -Rework M839's in DP8-E
(Time To Install And Test 2.0 Hours) (Kit Contents -F185 FCO/Prints) Correction supplement FCO M839-B002A and MAINDEC 08-DHDPA-A will also be included in the kit.

M839-B002A CODE: DF
APR-72 - PROBLEM : M839 Circuit Schematic is wrong. Problem is on Note 2 of E-CS-M839-0-1, page 1: 6 bit character jumper notation is incorrect.
CORRECTION: Delete "C8 " from 6 bit character note and add "B9 ".
In-plant effectivity -Unchanged
Field effectivity -Unchanged

M839-00003 CODE: P CS: K
JUL-72 - CORRECTION: Correct Item 33 on Parts List.
In-plant effectivity -06 documentation change only

M839-C0004 CODE: DF CS: L ETCH: L
OCT-72 - PROBLEM 1: **INITIALIZE** at power-up causes a space to the line which is unacceptable by EIA.
CORRECTION 1: Change **INITIALIZE** pulse to SEND DATA flip-flop so that an **INITIALIZE** pulse will set rather than clear the SEND DATA flip-flop.
PROBLEM 2: Improve product by adding the capability to select the number of character recognition locations (0, 2, and 4) and to have the 65XX IOT sets.
CORRECTION 2: Add split lugs and resistors to allow selection of number of character recognition locations.
In-plant effectivity -Rework all M839's beginning 10-9-72.
Field effectivity -Rework all M839's, Correction #1 as required
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints) MAINDEC 08-DHDPA-B will also be included in the kit.

M839-C0005 CODE: F CS: M
APR-73 - PROBLEM: A race condition exists when running full duplex. Indications of the race condition reported so far are: 1: Received data disappearing, being AND ed with **TX DATA** and stored with **TX DATA** during memory write cycle. 2: User program may indicate bad line, excessive **NACKS** , when running full duplex.
CORRECTION: Synchronize the receiver DMA control to inhibit receiver break requests while a TRANSMIT DATA BREAK/DMA cycle is in progress. This correction is necessary to meet specifications.
In-plant effectivity -03 -Rework immediately
Field effectivity -Rework all M839's on all units running full duplex.
(Time To Install And Test 1.5 Hours.) (Kit Contents -F745 FCO/Prints And Parts)

M839-00006 CODE: P CS: N
AUG-73 - PROBLEM: When etch layout was changed, capacitor C27 was removed; it is still shown on the Circuit Schematic and in the Parts List.
CORRECTION: Remove C27 from Parts List and Circuit Schematic.
In-plant effectivity -06 -Documentation change only

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E C DEC-O-LOG Engineering Change Order Log

M840

Reader/Punch Control

PROCESSOR TYPE PDP-8/E

M840-00001 CODE: D CS: F
FEB-71 - PROBLEM 1: Adjusting final speed potentiometer adversely affects acceleration timing.
CORRECTION 1: Rearrange circuit so potentiometer setting does not change acceleration timing.
PROBLEM 2: Critical thresholds on **PUNCH SYNC** schmitt trigger.
CORRECTION 2: Change two resistor values.
CORRECTION 3: Relayout board including all changes and eliminating jumpers.

NOTE: Supplement ECO M840-00002 cancels the layout of new etch revision "H " which is ordered by this ECO.
In-plant effectivity -03 rework immediately

M840-00002 CODE: D
FEB-71 - CORRECTION: Modifies ECO M840-00001 ; cancels the creation of etch revision "H ". Orders circuit changes to eliminate noise sensitivity of **PUNCH SYNC** and intermittent reader feed.
In-plant effectivity -Rework immediately

M840-00003 CODE: D
MAY-71 - CORRECTION: Orders creation of the etch board revision "H " to bring the M840 up to production standards.

NOTE: This ECO was cancelled by ECO M840-00004.
In-plant effectivity -Phase-in

M840-C0004 CODE: F CS: H
JUN-71 - PROBLEM 1: ECO M840-00003 was written causing Circuit Schematic revision conflicts.
CORRECTION 1: Cancel ECO M840-00003.
PROBLEM 2: Reader stalls erratically.
CORRECTION 2: Limit current into capacitor C59 with a 75 ohm resistor in series.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M840's if symptoms are present
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO And Parts)

M840-00005 CODE: D CS: J ETCH: H
JUN-71 - PROBLEM: Jumpers and retrofit components on board; design errors around **INITIALIZE** logic.
CORRECTION: Relayout board, including retrofitted components, to new etch revision "H "; do not rework existing boards.
In-plant effectivity -01 phase-in

M840-00006 CODE: D CS: K
JUL-71 - PROBLEM: MC4015 IC undesirable because of purchasing problems.
CORRECTION: Replace MC4015 with 8271 IC in four places.

NOTE: Reference ECO's M840-00007 and M840-00008 which are supplemental to this ECO.
In-plant effectivity -02 phase-in

M840-00007 CODE: D ETCH: J
AUG-71 - PROBLEM 1: ECO M840-00006 should have ordered relayout of etch.
CORRECTION 1: Relayout etch because IC 4015 is no longer available; an IC 8271 will fit.
PROBLEM 2: Break-in code incorrect.
CORRECTION 2: Change break-in code for ECO M840-00006 from 02 to 01.

NOTE 1: This ECO is supplemental to ECO M840-00006.

NOTE 2: See continuation supplement ECO M840-00008.
In-plant effectivity -01 phase-in

M840-00008 CODE: D
SEP-71 - PROBLEM: When the computer is first turned on, it is possible to read one character, thus setting the **READER FLAG** , even though there is no tape in the reader.
CORRECTION: Change gating to reset **READER FLAG** flip-flop with **POWER NOT OK LOW** .

NOTE: This ECO is supplemental to ECO's M840-00006 and M840-00007.
In-plant effectivity -01 phase-in

M840-C0009 CODE: F CS: L ETCH: K
JUN-72 - PROBLEM: On M840 etch revision "J ", Circuit Schematic revision "K ", the punch feed switch will not work.
CORRECTION: Remove etch from E13 pin 3 to R46 which is a 10K, 1/4 watt resistor
In-plant effectivity -03 rework immediately
Field effectivity -Rework M840's etch revision "J ", CS revision "K " only
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints)

M840-C0010 CODE: F CS: M
SEP-72 - PROBLEM: **PUNCH BUSY** delay is wrong, causing bit/s to be dropped while punching.
CORRECTION: Increase delay time to 12 msec by removing resistor R39, 12K 1/4 watt 5%.
In-plant effectivity -Rework M840's etch revision "K ", CS revision "K " or "L ".
Field effectivity -Rework M840's, etch revision "K " at CS revision "K " or "L ".
(Time To Install And Test .7 Hour.) (Kit Contents -FCO/Prints)

M840-C0011 CODE: F CS: N
OCT-72 - PROBLEM: Reader randomly stops due to loss of **READER FLAG** . Problem is aggravated by using Field Service loop tape with "built-in " skew.
CORRECTION: Change R/C network on **READER DATA STROBE** signal to cure race condition.

NOTE: Under normal circumstances, symptoms become very random. The problem will occur more frequently when using tapes that have some skew between the Feed Hole and Data Holes; when the Feed Holes have become elongated, for example.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M840's shipped before 10/30/72
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

M840-00012 CODE: D CS: H1
JAN-73 - PROBLEM: A large number of M840's at CS revision "H " have shown up in Production and these boards will not work properly. Etch revision "F ", CS revision "H " cannot be shipped.
CORRECTION: Create CS revision "H1 " to document these boards which may be used following modification as defined in this ECO. Resistor R29 is changed to 100 ohms and capacitor C55 is changed to 2200 pfd.
In-plant effectivity -03 rework all M840's, etch revision "F ", CS revision "H ", on or before February 5, 1973.

M840-B0013 CODE: F CS: P
FEB-73 - PROBLEM: When using Bootstrap Loader, MI8-E, with reader, program dumped into core will not run; program hangs on reader flag.
CORRECTION: Remove **POWER OK** from the R/S flip-flop. The rework procedure is as follows: Cut etch on side 2 at pin BV2. Jumper E35 pin 4 to pin 5. Use feed-thrus for those two pins near E29.

NOTE: All M840's reworked in the field must have FCO M840-C0009, M840-C0010, and M840-C0011 installed before this FCO is installed. An M8330 is to be used when this FCO is implemented. The M833, if present, should be replaced.
In-plant effectivity -03 * -Rework all CS revision "N " boards for February shipments to customers.
Field effectivity -Rework all M840's, CS revisions "K ", "L ", "M ", or "N ", in systems with an MI8-E option.
(Time To Install And Test .5 Hour.) (Kit Contents -F771 -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

M840

READER/PUNCH CONTROL

PROCESSOR TYPE PDP-8/E

M840-00014 CODE: F CS: R

APRIL-74 – PROBLEM: Resistor R28 is connected to a +3 volt run, but should be connected to +5 volts; +3V noise immunity is poor.

CORRECTION: Connect R28 to +5 volts. The rework procedure is as follows: Looking at Side 1 of the board, follow etch from E12 pin 1 to the point where R28 and R40 are joined. At this point make an etch cut between the two resistors to separate R28 from R40. Run a #30 wire from the end of R28, in step 1, left to the +5 volt lead of C17.

In-plant effectivity – This ECO is required only on CS revision "J" or later, etch "H" or later. All modules in-plant as of June 1, 1974 must have this rework.

Field effectivity – rework M840's when poor noise immunity is the suspected cause of Reader/Punch failure.

(Time to Install and Test .5 hour.) (Kit Contents – NF1249 – FCO/prints.)

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EC DEC-O-LOG Engineering Change Order Log

M841

Line Printer Control

PROCESSOR TYPE PDP-8/E

M841-00001 CODE: D CS: D ETCH: E
JAN-71 - PROBLEM: If printer power is "off " while computer is "on ", the signal **READY** floats, causing interrupts.
CORRECTION: Clear INTERRUPT ENABLE with INITIALIZE .
In-plant effectivity -Create new etch board

M841-00002 CODE: P CS: E
MAR-71 - PROBLEM: Three pins on Winchester connector are called out incorrectly on drawing E-CS-M841-0-1.
CORRECTION: Correct pins as follows: Change C to E, and E to C.
In-plant effectivity -Documentation change only

M841-00003 CODE: D CS: F ETCH: F
MAY-71 - PROBLEM 1: When printer power is "off ", the signals **DEMAND** and **READY** float, causing false skips.
CORRECTION 1: Relayout etch board to include clamps on **DEMAND** and **READY** .
PROBLEM 2: Omnibus conformity not maintained.
CORRECTION 2: Relayout to achieve conformity.
In-plant effectivity -Create new etch board

M841-00004 CODE: D CS: H ETCH: H
JUL-71 - PROBLEM 1: The STROBE flip-flop is set at the wrong time and causes the line printer to error.
CORRECTION 1: Relayout the etch board to set STROBE at the trailing edge of IOT 4 or 6.
CORRECTION 2: Renumber IC's so that the first IC is E1.
In-plant effectivity -Create new revision etch board

M841-00005 CODE: P CS: J
OCT-71 - CORRECTION: Corrects numbering of parts on the cover sheet of the Circuit Schematic.
In-plant effectivity -Print correction only

M841-D0006 CODE: F CS: K
AUG-73 - PROBLEM: The open collector gates, 7401's, that drive the eight data lines to the printer, are sinking 50 ma. The 7401 IC is specified to sink only 16 ma per gate. Symptoms could be garbled characters and/or marginal operation.
CORRECTION: Replace two 7401 IC's with two 8881 ic's; for etch revision "F " and earlier, replace E3 and E12 with 8881'S; for etch revision "H " and later, replace E5 and E14 with 8881's.
In-plant effectivity -03 * rework all boards in house. Install ECO at Depot Repair. Field retrofit if symptoms exist or are suspected.
Field effectivity -Rework all M841's when symptoms are present
(Time To Install And Test .5 Hour.) (Kit Contents -F1023 -FCO/Prints And Parts)

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DEC-O-LOG Engineering Change Order Log

M842

XY8-E Plotter Control

PROCESSOR TYPE PDP-8/E, 8/F, 8/M

M842-00001 CODE: P CS: B
NOV-70 - PROBLEM: Incorrect parts ordered on Parts List.
CORRECTION: Change from #90-06732, GS4-7 eyelet, to #90-06750, GS4-11 eyelet.
In-plant effectivity -06 documentation change only

M842-00002 CODE: P CS: C
MAR-71 - PROBLEM: Print calls out IC 380 and IC 314 pin 7 equals +5V.
CORRECTION: Print should read IC 380 and IC 314 pin 8 equals +5V.
In-plant effectivity -06 documentation change only

M842-00003 CODE: D CS: D
MAR-71 - PROBLEM 1: The 5 msec delay can vary up to 30% which could cause timing problems.
CORRECTION 1: Change the value of resistor R45 from 8.2K to 10K ohms to increase the delay to 7.5 msec.
PROBLEM 2: Print errors.
CORRECTION 2: 70 msec and 4 msec delays should be called out as 72.7 and 3.3 msec respectively.
In-plant effectivity -03 rework immediately

M842-A0004 CODE: DF CS: E
APR-71 - PROBLEM: The 72 msec delay is being false triggered by a race condition.
CORRECTION: Rework boards as follows: Etch cuts: E1 pin 2, side 2; E1 pin 4, side 1; E3 pin 1, side 2; E3 pin 2, side 1; E3 pin 4, side 2; E3 pin 5, side 2; E4 pin 1, side 2; E4 pin 3, side 1; E10 pin 1, side 2; E10 pin 2, side 2; E10 pin 4, side 2; and E10 pin 5, side 2. Add jumpers E1 pin 2 to E4 pin 6, E1 pin 3 to R44, E3 pin 1 to E6 pin 2, E3 pin 2 to E12 pin 12; E3 pin 11 to E4 pin 4, E4 pin 1 to E6 pin 8, E6 pin 1 to pad in etch line to E10 pin 6, E6 pin 3 to pad in etch line to E5 pin 14, E6 pin 4 to E10 pin 4, E6 pin 10 to E10 pin 5, E6 pin 11 to E17 pin 3, E10 pin 1 to pad in etch line to E5 pin 13, and E10 pin 2 to E16 pin 2.

NOTE: This FCO creates XY8-E, -EA and -EB ML revisions "A ".
In-plant effectivity -04 rework immediately
Field effectivity -Rework all M842's, CS revision "D " and earlier, etch revision "B ".
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints)

M842-00005 CODE: D CS: F ETCH: C
MAY-71 - PROBLEM: Design errors on board. 70 msec single-shot erroneously triggers instead of 5 msec single-shot. This makes certain execution times longer than necessary.
CORRECTION: Relayout board to new etch revision "C ".

NOTE 1: This ECO is cancelled by ECO M842-00007.

NOTE 2: This ECO creates XY8-E, -EA , and -EB ML revision "B ".
In-plant effectivity -03 rework immediately

M842-00006 CODE: D CS: H ETCH: D
JUN-71 - PROBLEM 1: 1 ufd 20V capacitor, #10-04811, is no longer purchased.
CORRECTION 1: Replace it with #10-01776, 1 ufd 35V.
PROBLEM 2: Design error on IOT decoder.
CORRECTION 2: Gate SELECT level with TP3 for relayout only, do not retrofit.
In-plant effectivity -01 phase-in

M842-00007 CODE: D
FEB-72 - PROBLEM: ECO M842-00005 is incorrect and should not be retrofitted on boards.
CORRECTION: Do not retrofit any boards per ECO M842-00005.

NOTE: ECO M842-00006 calls for relayout that brings the CS revision to "H " and the etch revision to "D ". That corrects the problem indicated on ECO M842-00005 and will replace the CS revision "E " board. There will be no CS revision "F " boards.
In-plant effectivity -03 remove from all CS revision "F " boards.

M842-D0008 CODE: F CS: J ETCH: E
APR-72 - PROBLEM: M842 does not allow for plotters having different step rates.
CORRECTION: Remove fixed resistor R45, 10K, 1/4 watt, 5%, and replace with a 20K ohm potentiometer.
In-plant effectivity -Exchange M842 in plotters that step faster than 200 steps per second.
Field effectivity -Rework M842's at customer request
(Time To Install And Test 1.0 Hour) (Kit Contents -FCO/Prints And Parts)

M842-B0009 CODE: F CS: K
APR-73 - CORRECTION 1: Update drawing E-CS-M842-0-1 to correct documentation error.
PROBLEM 2: Race condition exists between **PEN UP** and **PEN DOWN** flags.
CORRECTION 2: Rework M842's as follows: Cut etch between E6 pin 8 and E4 pin 1, between E3 pin 3 and E4 pin 2, between E4 pin 6 and E1 pin 2, and between E7 pins 3 and 4 and R44. Maintain etch connection between E7 pins 3 and 4. Add wires from E18 pin 4 to E18 pin 5, from E18 pin 5 to E6 pin 8, from E18 pin 3 to E3 pin 3, from E18 pin 6 to E18 pin 13, from E18 pin 13 to E6 pin 1, from E6 pin 2 to E1 pin 2, from E1 pin 8 to E18 pin 1, from E18 pin 1 to E18 pin 2, from E18 pin 2 to E7 pins 3 and 4, from E4 pin 1 to E4 pin 2, and from E4 pin 2 to E18 pin 12.
In-plant effectivity -03 * -Rework immediately
Field effectivity -Rework all M842's
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts None) The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents - FCO/Prints)

M842-00007 **CODE: D**

FEB-72 - PROBLEM: ECO M842-00005 is incorrect and should not be retrofitted on boards.
CORRECTION: Do not retrofit any boards per ECO M842-00005.

NOTE: ECO M842-00006 calls for relayout and brings the CS revision to "H " and the etch revision to "D ". That corrects the problem on ECO M842-00005 and will replace the CS revision "E " board. There will be no CS revision "F " boards.
In-plant effectivity -03 remove from all CS revision "F " boards.

M842-D0008 **CODE: F CS: J**

APR-72 - PROBLEM: M842 does not allow for plotters having different step rates.
CORRECTION: Remove fixed resistor R45, 10K, 1/4 watt, 5%, and replace with a 20K ohm potentiometer.
In-plant effectivity -Exchange M842 in plotters that step faster than 200 steps per second.
Field effectivity -Rework at customer request
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

M843

GDI Card Reader Control

PROCESSOR TYPE PDP-8/E

M843-B0001 CODE: F CS: D

OCT-71 - PROBLEM: If the program is started before the card reader is started, the card reader will not advance a card, even though it is giving a **READY** signal.

CORRECTION: The cause has been found to be the **TRANSITION** flip-flop, which in the set condition, disables the **READ** flip-flop. It is necessary that the **READ** flip-flop be disabled when the **READY/ON LINE** lead goes down, but use of the **TRANSITION** flip-flop disables the **READ** flip-flop both when **READY/ON-LINE** goes up and when it goes down. The actual state of **READY/ON-LINE** should be used instead. Delete etch at E35 pin 9. Add a jumper from E35 pin 9 to E40 pins 11 and 14.

In-plant effectivity -03 rework immediately

Field effectivity -Rework all M843's in PDP-8/E

(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

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EC DEC-O-LOG Engineering Change Order Log

M848

Power Fail and Auto Restart Module

PROCESSOR TYPE PDP-8/E

M848-00003 CODE: P CS: E
JUN-71 - CORRECTION: Add instructions for installing board in the field.
In-plant effectivity -06 documentation change only

M848-C0004 CODE: F CS: F
OCT-71 - PROBLEM: Power fail will not work with the new timing board, M8330, because of the long **INITILIZE** signal from the M8330.
CORRECTION: Lenghten the 300 msec delay out to 1000 msec by changing capacitor C32 from 3.9 uf to 68 uf, 15 volt.
In-plant effectivity -Rework beginning october 1
Field effectivity -Rework all M848
(Time To Install And Test -1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

M848-C0005 CODE: F CS: H
DEC-72 - PROBLEM: Random failures occur when running Test 4 of the Power Fail diagnostic. The failures appear most often as the error halt in location 434. Customer software may exhibit interrupt service routine problems.
CORRECTION: Hold **POWER LOW FLAG** set instead of clocking the flip-flop high. Retrofit instructions: 1) two etch cuts at E10 pin 10, one on side #1 and one on side #2; 2) one etch cut at E10 pin 11, side #2; 3) jumper E10 pin 11 to E10 pin 7; 4) jumper E10 pin 10 to E1 pin 4; and 5) jumper E9 pin 13 to E10 pin 1.
In-plant effectivity -03 rework immedately
Field effectivity -All M840's, CS revision "F " and earlier
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M848-00006 CODE: D CS: J
JAN-72 - PROBLEM: M848 module will not work with the PDP-8/M computer.
CORRECTION: Add a 3.83K 1/8W 1% resistor in series with R16 which is a 3.48K 1/8W 1% resistor. Add 2 split lugs with a jumper wire between the lugs in parallel with the 3.83K resistor. Delete four 20 UFD capacitors and one 10K resistor.

NOTE 1: For PDP-8/M, CS revision "J " is required, retrofit immediately. For PDP-8/E, CS revision "J " is not required, phase-in NOTE 2: Reference ECO M848-00007 and M848-C0008.
In-plant effectivity -See note 1

M848-00007 CODE: D CS: K
JAN-72 - PROBLEM: When the 20 uf capacitors are removed when installing ECO M848-00006, the power fail thresholds become too low in the PDP-8/E or PDP-8/M.
CORRECTION: Change R16 from a 3.48K 1/8W 1% resistor to a 3.65K 1/8W 1% resistor.

NOTE: Reference ECO M848-00008
In-plant effectivity -03 rework immediately

M848-C0008 CODE: DF
FEB-72 - PROBLEM: ECO M848-00006 and M848-00007 do not cover field effectivity.
CORRECTION: In the field, the M848 at CS revision "H " or earlier must be exchanged for an M848 CS revision "J " or later. ECO M848-00006 and M848-00007 must be done together, in-plant.
In-plant effectivity -Unchanged
Field effectivity -Exchange all M848, CS revision "H " or earlier
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

M848-C0009 CODE: F CS: L
MAR-72 - PROBLEM: If the restart subroutine is too long, it is possible not to recognize a new power failure because **INTERRUPT ENABLE** is off.
CORRECTION: Retrofit the module to add a gate.

NOTE: Reference ECO M848-00011.
In-plant effectivity -02 phase-in
Field effectivity -Rework all M848's in PDP-8/E and PDP-8/M as required (Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints) MAINDEC 8E-D0KC-1 will also be included in the kit.

M848-D0010 CODE: F CS: M
MAR-72 - PROBLEM: The two comparators and voltage reference may become marginal under worst-case component tolerances.
CORRECTION: Change resistor values as indicated.
In-plant effectivity -Rework immediately
Field effectivity -Rework all M848 if higher thresholds are needed
(Time To Install And Test -1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

M848-00011 CODE: D
MAY-72 - PROBLEM: Break-in instructions on ECO M848-C0009 creates confusion about module revision letters.
CORRECTION: Changes in-plant break-in from "code 02 phase-in, field change only " to "03 rework all boards ".
In-plant effectivity -Rework all M848's after may 15, 1972

M848-C0012 CODE: F CS: N
JUN-72 - CORRECTION 1: Corrects documentation errors.
PROBLEM 2: Fast power on/off causes the **RUN** flip-flop to be set while **INITIALIZE** is still timing out.
CORRECTION 2: Set up **KC** flip-flop with output from E1 pin 6.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M848's if symptoms are present
(Time To Install And Test .8 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints) MAINDEC 08-DHKPA-A will also be included in the kit.

M848-C0013 CODE: F CS: P
AUG-72 - PROBLEM: It is possible for the Power Fail option to issue a restart as the line voltage varies between the line thresholds of 105 VAC and 95 VAC.
CORRECTION: Install a **DIR** flip-flop and remove retrofit jumpers E13 pin 2 to pin 3, E13 pin 2 to E7 pin 6 and E13 pin 1 to E13 pin 12.

NOTE: The jumpers removed ay this FCO were installed by FCO M848-C0009. This FCO is to be implemented in all KP8/E's that are producing an unwanted restart.
In-plant effectivity -03 retrofit immediately
Field effectivity -Rework all M848's in KP8/E as required.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

PROCESSOR TYPE PDP-8/E

M848-C0014 CODE: F CS: R

NOV-72 - PROBLEM: When Power Fail option is used in processors without the Programmer's Console, Power Fail may not restart at the right memory location.
CORRECTION: Add three jumpers to assert **IND I L** on the omnibus at LOAD ADDRESS enable time; these jumpers are E13 pin 1 to CU2, E13 pin 2 to E13 pin 12 and E13 pin 3 to E13 pin 11.

NOTE: No reworking of the module is to be done in the field; this FCO is to be implemented by exchanging the existing M848 module for a new CS revision "R " M848, or one which has been reworked in-plant to that level.
In-plant effectivity -03 -Rework beginning 11/26/73
Field effectivity -Exchange all M848's used in PDP-8/E, PDP-8/M, or PDP-8/F.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

M848-D0015 CODE: F CS: R1

AUG-73 - PROBLEM: Power Fail thresholds cannot be held to close enough tolerances due to component tolerances and HFE of the 3009B transistors.
CORRECTION: Rework the module with two 100 ohm potentiometers and DEC 6531B transistors. The reworking is to be done in the DEC Depots only; field implementation of this FCO will require module exchange. The parts kit for this FCO will consist of one M848 module, DEC Depot reworked to CS revision "R1 " or a new board, etch revision "E ", CS revision "S ".

NOTE: See continuation supplement FCO M848-C015A.
In-plant effectivity -Rework in Field Service Depots only. Do not retrofit in Production. Shippable CS revision is "R " until further notice.
Field effectivity -Exchange M848's at sites with a history of Power Fail problems; use DEC Depot reworked board at CS revision "R1 " or new board at CS revision "S ", etch "E ".
(Time To Install And Test .5 Hour.) (Kit Contents -F1031 -FCO/Prints And Parts)

M848-D015A CODE: F

SEP-73 - CORRECTION: Adds rework procedure for M848-D0015.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

M848-00016 CODE: D CS: S ETCH: E

SEP-73 - PROBLEM: Present board requires too much rework as a result of ECO's.
CORRECTION: Phase-in new etch revision "E ".
In-plant effectivity -Board Shop: Do not etch any more revision "D " M848's. Puerto Rico: New boards must be in all November machines. Westminster: New boards must be in all December machines and after.

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Engineering Change Order Log
DEC-O-LOG

M860

Real Time Clock Module

PROCESSOR TYPE PDP-8/E

M860-00001 **CODE: D** **CS: E** **ETCH: E**
JUL-71 - PROBLEM: Error in layout of etched board and it is not to production standards.
CORRECTION: Rework: Cut etch on side 2, add two jumpers on side 1. Relayout to correct etch problem and bring it up to production standard.

NOTE: Module is at **LIMITED RELEASE** status.
In-plant effectivity -03 rework immediately

M860-B0002 **CODE: F** **CS: F** **ETCH: F**
JAN-72 - PROBLEM 1: Possibility of erroneous Clock Counter reading exists when running mode 03 at high rates with Schmitt Triggers.
CORRECTION 1: Enable Schmitt Trigger data transfers with **CNT BUSY H** instead of inhibiting with **B COUNT H** .
PROBLEM 2: Clock Counter counts on negative edge; **B COUNT H** delays this edge for 300 nsec.
CORRECTION 2: Connect Counter to **B COUNT L** ; this does not alter circuit operation.

NOTE: This FCO must be installed in conjunction with FCO M518-B0002.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M860's used in DK8-ES in the field or in DK8-EP's that use the Schmitt Trigger circuitry of the M518.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

M860-D0003 **CODE: DF** **CS: H**
MAR-72 - PROBLEM 1: System fails on very long busses.
CORRECTION 1: Change capacitor C61 from 47 pfd to 470 pfd.
PROBLEM 2: **BUS STROBE** timing is marginal (9601 tolerances .
CORRECTION 2: Change capacitor C60 from 56 pfd to 82 pfd.

NOTE 1: This is a worst-case condition problem and systems in the field that are working should not be changed unless a **BUS STROBE** pulse is missed. NOTE 2: Symptom: When executng instruction 6133 or 6137, the processor hangs up in TS3.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M860's as required.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

M866-00005 CODE: P CS: L
APR-72 - CORRECTION: Corrects the M866 Parts List.

In-plant effectivity -06 documentation change only

M866-D0006 CODE: DF CS: M ETCH: L
JUN-72 - PROBLEM: Maintenance clock slew rate too low for proper operation with BC05C cable. Symptom: No clocks present when running diagnostic.
CORRECTION: Widen pulse width of maintenance clock by changing from TP4 to TP1 to clear the RS flip-flop used to generate maintenance clock pulses.
In-plant effectivity -03 rework immediately
Field effectivity -Install if maintenance clock fails
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M866-C0007 CODE: DF CS: N ETCH: M
OCT-72 - PROBLEM 1: M866, used with BC05C cable, connected to a Bell 201 modem with a contact closure option, can malfunction.
CORRECTION 1: Remove ground etch from all Berg pins except A, B, UU and VV .
PROBLEM 2: Improve product by adding an R/C clock for use as an Interprocessor Buffer.
CORRECTION 2: Add gates, capacitor, resistor and split lugs to allow clock to run slower or faster.

NOTE: Field implementation of this FCO will involve replacement of the existing M866 with a new one, M866 etch revision "M ", CS revision "N ".
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M866's in DP8-E with Bell 201 modems which use the contact closure option.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) MAINDEC 08-DHDPA-B will also be included in the kit.

M866-D0008 CODE: DF CS: P
OCT-72 - PROBLEM: RECEIVE DATA circuit can malfunction when DP8-E is interfaced directly to a DF11 Wide Band Driver. The leakage current through transistor Q18 is too high to allow it to turn off.
CORRECTION: Change resistor R30 from 220 ohms to 2.7K ohms, 1/4 watt, 5%; remove resistor R82.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M866's when DP8-E is used as an interprocessor buffer between a PDP-8/E and a PDP-11.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

M868

DECtape Control Module

PROCESSOR TYPE PDP-8/E

M868-00001 CODE: D CS: D
SEP-71 - PROBLEM: Power-down was causing glitches on **T/M** , **WD EN** , and **S/G** , thus destroying the time and mark tracks and moving tape.
CORRECTION: Add **T/M ENAB** , **WD ENAB** , and **S/G** with **PWR OK** to keep those signals disabled during power-down.
In-plant effectivity -03 rework immediately

M868-00002 CODE: D CS: E
SEP-71 - PROBLEM: When power is turned off in the PDP-8/E, it takes a while for the power to go off in the TU56 (the H716 is turned off by the 854 power control . As the input voltage to the 7417 starts to decay, the 7417 still has enough VCC to allow it to switch low. This low output is the enable level for **T/M ENAB** , **WD ENAB** , and **GO** . Thus the tape on the selected drive starts to move and the time, mark, and data tracks are destroyed.
CORRECTION: Relayout to change the 7417, E46, for the above lines (' con all halt **IS CHANGED SO THE 7417, E25, CAN BE DELETED] TO A 7401, WHICH, WHEN ADDED WITH** pwr ok , holds the signals high until all power has decayed in both the TU56 and the PDP-8/E.
In-plant effectivity -Phase-in

M868-D0003 CODE: F CS: F
MAR-72 - PROBLEM: It is possible for the MD lines to glitch when changing. This glitch may produce a **SDLD** command and clear the **TIME ERROR** conditions at an unwanted time.
CORRECTION: Add **TP3** to **SDLC** to clear **TIME ERROR** .

NOTE 1: Supplement FCO M868-0003A makes this ECO field effect and provides the required graphics.
NOTE 2: See continuation FCO M868-D0004.
In-plant effectivity -Documentation change only
Field effectivity -All M868's as required
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints) supplement FCO M868-0003A will also be included in the kit.

M868-D003A CODE: F
MAR-72 - PROBLEM: FCO M868-D0003 did not note that field service is affected. It should have done so.
CORRECTION: This FCO is a supplement to FCO M868-D0003 to make available the print changes required in the field.
In-plant effectivity -Unchanged
Field effectivity -All M868 as required

M868-D0004 CODE: DF CS: H
MAR-72 - PROBLEM: This is a continuation of FCO M868-D0003 which added **TP3** to **SDLC** to clear **TIME ERROR** . In doing so it is not possible to clear **TIME ERROR** and set **WRITE** on the same **SDLC** instruction.
CORRECTION: Disable the **CLEAR R/W** line during an **SDLC** so **R/W** can be set while **TIME ERROR** is being cleared.

NOTE: This FCO must be installed in conjunction with FCO M868-D0003 and M868-D003A.
In-plant effectivity -Rework immediately
Field effectivity -All M868's as required
(Time To Install And Test 1.5 Hours) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M868-C0005 CODE: F CS: J
SEP-72 - PROBLEM 1: **UP TO SPEED** delay is too long; it misses the 3 block turn around specification.
CORRECTION 1: Cjamge the **UP TO SPEED** dealy to nominal 120 msec. (110 to 140) by changing the values of resistor R17 and capacitor C36.
PROBLEM 2: Two IC's are labeled or draw incorrectly.
CORRECTION 2: Correct IC E28 (pins 9, 10 and 14) from 5380 to 5384. Remove low signal circle from E20 pin 2.
In-plant effectivity -03 rework as of 9-29-72
Field effectivity -Rework all M868's in TD8/E as required
(Time To Install And Test 1.2 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts) MAINDEC 8E-D3AB (with mcn 8E-D3AB and below) will also be included in the kit.

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E C DEC-O-LOG Engineering Change Order Log

M880

256 Word ROM

PROCESSOR TYPE PDP-8/E

M880-00001 CODE: P CS: B
NOV-71 - CORRECTION: Corrects the Parts List.
In-plant effectivity -06 documentation change only

M880-A0002 CODE: F CS: C
FEB-72 - PROBLEM: Skew between high and low going EMA lines causes ROM to be falsely selected.
CORRECTION: Enable **ROM ADDRESS L** with return rather than TP4.

In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all M880's
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M880-00003 CODE: P CS: D
APR-72 - CORRECTION: Update drawing E-CS-M880-0-1 to include transistor Q16 which is not labeled.
In-plant effectivity -06 documentation change only

M880-00004 CODE: D CS: E
MAY-72 - PROBLEM: Screw for stud ball is too long.
CORRECTION: Change screws to 6-32 x 3/16 binding head and add #6 internal tooth lockwashers.
In-plant effectivity -03 rework immediately

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E C DEC-O-LOG Engineering Change Order Log

M882

DK8-EA Real Time Clock Module

PROCESSOR TYPE PDP-8/E [DK8-EA]

M882-C0002 CODE: F CS: D ETCH: E
JAN-72 - PROBLEM: Option winding on PDP-8/M is 56 VCT instead of 28 VCT as is the PDP-8/E.
CORRECTION: Change resistors R12, R13 and R14 to 2K 1/2 watt 5%.

NOTE: Supplement M882-C002A orders field retrofit effectivity of this FCO.
In-plant effectivity -03 rework immediately
Field effectivity -Rework M882 etch revision "D " and earlier
(Time To Install And Test 1.0 Hour) (Kit Contents -FCO/Prints And Parts) supplement M882-C002A will also be included in the kit.

M882-C002A CODE: F
FEB-72 - PROBLEM: The **BREAK-IN-EFFECTIVITY** block on FCO M882-C0002 did not include the field action required.
CORRECTION: Orders field retrofit effectivity.
In-plant effectivity -Unchanged
Field effectivity -See above

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ECO DEC-O-LOG Engineering Change Order Log

M884

Synchronous Line Unit Parity Module

PROCESSOR TYPE PDP-8/E

M884-00001 CODE: D CS: E

OCT-71 - PROBLEM 1: DP8-EP (redundancy check) generates and checks only odd parity.
CORRECTION 1: Add split lugs on M884 allowing selection of E1 pin 10 to E32 pin 2 and 1 or E20 pin 8 to E32 pin 1 and 2 (odd parity using E1, even parity not using E1 .
PROBLEM 2: DP8-EP option designation is cause of confusion. Print does not identify **BOX** functions.
CORRECTION 2: Change option designation to KG8-EA (VRC, LRC, CRC, GENER and CHECK). Even parity will not be supported by diagnostics. Add **BOX** functions as designated.

In-plant effectivity -01 phase-in

M884-D0002 CODE: DF CS: F

JUN-72 - PROBLEM 1: Only one M884 module may be installed per PDP8/E system with KG8-E option.
CORRECTION 1: Install split lugs to allow IOT code selection.
PROBLEM 2: M884 circuit schematic, page 1, incomplete.
CORRECTION 2: Make M884 circuit schematic reflect layout of IC's.
In-plant effectivity -02 phase-in
Field effectivity -Retrofit only at customer request
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints) maindec 08-DHKGA will also be included in the kit.

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Engineering Change Order Log
DEC-O-LOG

M885

Point Plotting Scope Control

PROCESSOR TYPE PDP-8/E

M885-00001 CODE: D CS: C
JUL-71 - PROBLEM: High quality -15 volts connected to logic -15 volts.
CORRECTION: Cut pin B2 on A , B, c; route -15V around pad on D as indicated on physical. Do not relayout the board.
In-plant effectivity -03 rework immediatey

M885-00002 CODE: D CS: D
NOV-71 - CORRECTION 1: Corrects minor errors on the circuit schematic.
PROBLEM 2: Limited release modules have jumpers and etch cuts due to ECO M885-00001.
CORRECTION 2: Relayout, eliminating etch cuts and jumpers.
In-plant effectivity -Rework immediately

M885-00003 CODE: P CS: E
MAY-72 - PROBLEM 1: Parts list was mistakenly altered on ECO M885-00002. ECO did not specify any parts changes.
CORRECTION 1: Change parts list to reflect R65 changed back to 47 ohms from 470 ohms. Note: This affects model only -No revision D circuit schematic modules produced as yet.
PROBLEM 2: New part number for R29 and R116, 500 ohm 62PR potentiometer.
CORRECTION 2: Change item #71 from 13-09411 to 13-09150-08.
In-plant effectivity -06 documentation change only

M885-D0004 CODE: F CS: F
JUN-72 - PROBLEM 1: No connections on berg connector J1 for **COL RED L , ERASE L , WRITE THROUGH L , NON-STORE L** , and **ERASE INTERNAL L** .
CORRECTION 1: Add wiring to Berg connector.
PROBLEM 2: X and Y analog output can go to either plus or minus 14V when either the plus or minus HQ supply fails; this can cause a fuse to be blown in the VR14 or VR20.
CORRECTION 2: Add back-to-back zener diodes.

NOTE: This FCO applies to all VC-8/E options with VR20 two color display, 611 storage display, 613 scope, and all VC-8/E options with blown fuse problems in VR14. This FCO prevents the VC-8/E from blowing a fuse in the VR14 when either the plus or minus HQ power supply fails. In addition this FCO, when used with M869 etch revision D, adds the capability of using a VR20 two color display, 611 storage scope, or 613 scope.
In-plant effectivity -02 phase-in as of september 1, 1972
Field effectivity -See note above
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

M993

RK8-E Control Cable Module

PROCESSOR TYPE PDP-8/E

M993-00001 CODE: P CS: A
NOV-72 - PROBLEM: Error in Circuit Schematic title block; the RK8-E designation reads only "RK8 ".
CORRECTION: Change the "RK8 " to "RK8-E " in the title block.
In-plant effectivity -06 documentation change only

M993-00002 CODE: D CS: B
MAR-73 - PROBLEM: An ECO to the RK05 logic has made the RK8-E cable end incompatible.
CORRECTION: Cut etch on finger AU1 of the M993 to separate it from ground.
In-plant effectivity -02 phase-in

M993-C0003 CODE: F CS: C ETCH: B
MAR-73 - PROBLEM: DC POWER LOW to RK05 Disk Drive, from RK8-E, does not keep the RK05 heads in the retracted position.
CORRECTION: Add a circuit to the M993 to ensure that the DC POWER LOW signal to the RK05 goes below +0.9 VDC.

NOTE: This FCO must be installed in conjunction with FCO M7106-C0004.
In-plant effectivity -03 * retrofit all in-plant as of 3-26-73.
Field effectivity -Exchange #70-09026 Cable when symptoms are present.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

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EC DEC-O-LOG Engineering Change Order Log

M7007

VT20-B/FK11
CONTROL

PROCESSOR TYPE TYPESET 8, 10, 11

M7007-A0001 CODE: F CS: C

MAY-74 - PROBLEM: Shiftlock key on ASCII keyboard intermittently generates random characters on the display.

CORRECTION: Add DEC 6380 line receiver to strobe line BH1. This adds noise rejection and eliminates the problem. The rework procedure is as follows: Cut etch at E9 pin 2. Add wire from E8 pin 9 to BH1. Add wire from E8 pin 9 to E8 pin 10. Add wire from E8 pin 10 to the 470 ohm resistor lead which is inserted in the drilled hole to the right of E8 pin 10. Add wire from E8 pin 14 to E3 pin 1. Add wire from E3 pin 1 to E3 pin 2. Add wire from E3 pin 3 to E9 pin 2. Solder the other leg of the 470 ohm resistor to +5 etch.

In-plant effectivity -Rework all M7007's in-plant by July 1, 1974

Field effectivity -Rework all etch revision "C " M7007's from CS revision "B " to "C ".

(Time To Install And Test 1.5 Hours.) (Kit Contents -PF1270 - FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

M7104

RK8-E Control

PROCESSOR TYPE PDP-8/E

M7104-00001 CODE: D CS: B
OCT-72 - PROBLEM 1: Time delay required on 6 **RK2 L** .
CORRECTION 1: Add delay line and terminators in handle area and delete resistor R15 and capacitor C57.
PROBLEM 2: Model does not have jumpers to decode device IOT.
CORRECTION 2: Add wires to device code selector for 674.
In-plant effectivity -03 rework immediately

M7104-C0002 CODE: F CS: C
FEB-73 - PROBLEM 1: A marginal timing condition exists between the MODE CONTROL and the **CLK** for DATA BUFFER 4 .
CORRECTION 1: Add slow-down network to the MODE CONTROL, DB CONT 4 . The R/C network already exists on the boards; four etch cuts and the addition of four wires are required.
CORRECTION 2: Make corrections in prints.

NOTE: Symptoms of failure which indicate a need for this FCO are the RK8-E generating intermittent data errors without CRC errors.
In-plant effectivity -03 * retrofit all modules in-house.
Field effectivity -Rework all M7104's when symptoms are present.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints)

M7104-D0003 CODE: F CS: D
JUN-73 - PROBLEM: Marginal timing problem may cause extra increment to the CURRENT ADDRESS register.
CORRECTION: Add wire to JU1 of the M7104 to **SHORT TP3 H** ; this pulse will be used on the M7105. Capacitor C50 is changed from 120 pfd to 180 pfd.

NOTE: This FCO must be installed in conjunction with FCO M7105-D0002.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M7104's in RK8-E systems if the configuration includes an IOT of 67XX other than the RK8-E.
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints And Parts)

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M7105

K8-E-F Major Registers

PROCESSOR TYPE PDP-8/E

M7105-00001 CODE: D CS: B
OCT-72 - PROBLEM 1: Capacitor not required.
CORRECTION 1: Delete capacitor C38 and change the value of resistor R31 from 100 to 10 ohms.
PROBLEM 2: Priority jumpers not on model.
CORRECTION 2: Add wires to priority circuit.
In-plant effectivity -03 * -Rework all etch revision "A " and "B " M7105's

M7105-D0002 CODE: F CS: C
JUN-73 - PROBLEM: Marginal timing problem may cause extra increment to the CURRENT ADDRESS register.
CORRECTION: Cut one etch and pick up "short TP3 " from JU1 of the M7104; cut etch between E41 pin 10 and E42 pin 10, add a wire from E41 pin 10 to JU1.

NOTE 1: This FCO must be installed in conjunction with FCO M7104-D0003.

NOTE 2: The problem may be evident when running MAINDEC X8 and doing a two block transfer with the RK8-E. The Current Address Register may be incorrect, starting with the first words of the second block of words.
In-plant effectivity -03 * -Rework immediately
Field effectivity -Rework all M7105's in RK8-E systems if the configuration includes an IOT of 67XX other than the RK8-E.
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints)

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M7106

RK8-E Control

PROCESSOR TYPE PDP-8/E

M7106-00001 CODE: D CS: B
OCT-72 - PROBLEM: M7106 grounds pins used in RK05 bus system.
CORRECTION: Cut etch on M7106.
In-plant effectivity -03 rework immediately

M7106-00002 CODE: D CS: C ETCH: C
NOV-72 - PROBLEM: Eliminate wire on M7106, etch revision "B ", and plot on glass.
CORRECTION: Relayout M7106, eliminate wires and rework components. Plot on glass as M7106 (etch revision "C ") .

NOTE: See continuation supplement M7106-0002A and correction supplement ECO M7106-0002B.
In-plant effectivity -02 phase-in

M7106-0002A CODE: D
DEC-72 - PROBLEM: DC OK signal not connected to RK05 bus, causing possible data loss on power fail when computer is turned off and drives are not turned off. The system can only be in this state if the computer and drive are not interconnected with a power control.
CORRECTION: Add a diode between pin BV2 and J1-TT on the M7106, etch revision "C ".
In-plant effectivity -02 phase-in

M7106-0002B CODE: D
JAN-73 - PROBLEM: ECO M7106-00002 did not provide a rework procedure for existing boards.
CORRECTION: This supplement ECO provides a procedure.
In-plant effectivity -Rework all etch revision "B " M7106's in-plant until new M7106 at etch revision "C " is available.

M7106-C0003 CODE: DF CS: D
NOV-72 - PROBLEM: Some Texas Instrument #74161 counters do not respond to within specification narrow pulse with negative +5 volt margins. Signetics #74161's are OK as are Texas Instrument #74161's from previous batches.
CORRECTION: Widen RD CLK and RD CLK 2 by changing the values of capacitor C34 from 560 to 820 pfd and C35 from 330 to 470 pfd.

NOTE: See correction supplement FCO M7106-C003A.
In-plant effectivity -03 rework immediately
Field effectivity -Rework M7106's, CS revision "C " or earlier.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

M7106-C003A CODE: DF
JAN-73 - PROBLEM: Documentation errors on M7106 prints.
CORRECTION: Update prints with corrections.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

M7106-C0004 CODE: F CS: E
MAR-73 - PROBLEM: DC POWER LOW from the RK8-E to the RK05 Disk Drive does not keep the RK05 heads in the retracted position.
CORRECTION: Remove the diode from JITT and replace it with a jumper.

NOTE: This FCO must be installed in conjunction with FCO M993-C0003.
In-plant effectivity -03 * -Rework all in-house as of 3-26-73
Field effectivity -Rework all M7106's when symptoms are present.
(Time To Install And Test .8 Hour.) (Kit Contents -FCO/Prints)

M7106-D0005 CODE: F CS: F
MAY-73 - PROBLEM: READ DLY 1 and SYNC DLY 1 can not be adjusted to specification when 74123 chips other than Texas Instruments are used.
CORRECTION: Change value of resistor R5 from 10K to 6.8K ohms and resistor R13 from 20K to 15K ohms.
In-plant effectivity -03 rework all modules which have not been accepted at Westfield. Rework all accepted modules only if problem exists.
Field effectivity -Rework all M7106's in RK8-E's when symptoms are present.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

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DEC-O-LOG Engineering Change Order Log

M7390

RT01 Asynchronous Transceiver Module

PROCESSOR TYPE All

M7390-C0001 CODE: DF CS: C

OCT-71 - PROBLEM: When turning the RT01 on, the UART, MOS LSI chip, is not reset. This may cause the M7390 not to function.
CORRECTION: Add a reset circuit to clear all flip-flops in the UART. This circuit provides a 60 msec reset pulse on pin Z1 of the UART chip. Do not relayout the board. A later ECO will have the full corrections.

NOTE: This FCO must be installed in conjunction with FCO RT01-C0005.
In-plant effectivity -03 rework immediately
Field effectivity -Rework M7390's in RT01 #101
(Time To Install And Test .5 Hours)
(Kit Contents -FCO And Parts)

M7390-E0002 CODE: DF CS: D ETCH: D

DEC-71 - PROBLEM 1: The UART, E13, presently used, has been modified so that the external pull-up and pull-down resistors and Zener diode, IN751A, are not required.
CORRECTION 1: All pull-up and pull-down resistors on E13 are removed. The Zener diode is removed and pin 3 of E13 is grounded.
PROBLEM 2: A flip-flop, E14, is needed to give a frequency of 2.4 KHz for use in a 150 baud unit.
CORRECTION 2: Add a flip-flop, E14, to give a frequency of 2.4 KHz.
PROBLEM 3: A new reset circuit is needed for increased drive capability.
CORRECTION 3: A new reset circuit is being added for more unit loads. The reset circuit consists of Q1, R5, R6, R7, D9, C20, and pin BP2 is called **RESET . XR DLY** , which was on pin BP2, consisting of R67 and C19, was deleted.
PROBLEM 4: R1 and R2 are pull-up resistors for use in a wired **OR** system.
CORRECTION 4: R1 and R2 are added to E10 pin 12 and E10 pin 2.
PROBLEM 5: The **EOC** signal from the UART, E13, is delayed by as much as one transmitter clock period after **DATA STROBE** , DS . This can cause multiple interrupts in a computer which is monitoring the **EOC** flag.
CORRECTION 5: Add a TTL flip-flop which is set by **DATA STROBE** and reset by **EOC** , from the UART, E13.
PROBLEM 6: C18 and R62 decrease response time so that operation at rates greater than 300 baud is not possible.
CORRECTION 6: Change C18 to a 0.005 ufd capacitor and R62 to a 10K ohm resistor to allow higher baud rates.
CORRECTION 7: Other changes consist of R66 changed to R3, R62 changed to R4, **XR DLY** changed to **RESET** pin BP2, and C13 changed to C21.

NOTE 1: This module revision requires a corresponding wire wrap change when the module is used in the RT01 data terminal. The necessary wire wrap changes are described in FCO RT01-E0007. RT01's currently in the field with M7390 CS revision "B " modules should be updated with the M7390 CS revision "D " when the RT01 is returned for routine service at a depot.

NOTE 2: This FCO is to be installed in conjunction with FCO's RT01-C0005 and RT01-E0007.

NOTE 3: See continuation supplement FCO M7390-E002A.
In-plant effectivity -02 phase-in
Field effectivity -In depot only, only at customer request
(Time To Install And Test .3 Hour)
(Kit Contents -FCO/Prints And Parts)

M7390-E002A CODE: DF

APR-72 - PROBLEM: The part OCI-91, Item #46, has a metal case. This case is now unsuitable because of the revision "D " etch change. The case is likely to short against the etch.
CORRECTION: Replace OCI-91 with TIL-111 which eliminates possible shorts to the etch.
In-plant effectivity -02 phase-in
Field effectivity -Unchanged

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M7715

LA30 Linefeed Control

PROCESSOR TYPE All

M7715-00001 **CODE: D** **CS: C**
APRIL-71 – PROBLEM: Capacitor C8 discharge slope not fast enough.
CORRECTION: Change the value of resistor R7 from 47 ohms to 27 ohms.

NOTE: See continuation supplement ECO M7715-00002.
In-plant effectivity – rework immediately

M7715-00002 **CODE: D**
JUNE-71 – PROBLEM: LINE FEED FUNCTION pulse too long.
CORRECTION: Change resistor R5 to 422K ohms plus or minus 1% to make pulse equal to or less than 33 msec. This ECO is supplemental to ECO M7715-00001.
In-plant effectivity – rework immediately.

M7715-00003 **CODE: D** **CS: D**
DECEMBER-73 – PROBLEM: Unijunction relaxation oscillator output frequency is too low, the time between pulses is too long.
CORRECTION: Change the value of resistor R5 from 422K to 330K ohms.
In-plant effectivity – rework only those modules which do not pass the timing specification; use for all new production in Puerto Rico.

M7715-0003A **CODE: D** **CS: D1**
FEBRUARY-74 – PROBLEM: Unijunction relaxation oscillator output frequency is too low; time between pulses is erratic. ECO M7715-00003 will not work because the unijunction is still too low on output frequency.
CORRECTION: Change R5 from a 330K ohm resistor to a 62PR100K potentiometer. Change capacitor C8 from 0.033 UFD to 0.33 UFD.
In-plant effectivity – parts available January 28; start reworking in Westfield immediately.

M7715-C0004 **CODE: F** **CS: E**
JANUARY-74 – PROBLEM: Unijunction relaxation oscillator output frequency is too low; the time between pulses is erratic. Failure symptoms include missed line feeds and hanging up during line feed operations.
CORRECTION: Change resistor R5 from 330K 1/4W, 5% to a 62PR100K #13-09150-14 potentiometer; change capacitor C8 from 0.033 UFD to 0.33 UFD, #10-05328. Change IC E5 from #19-05575 to #19-11637.
In-plant effectivity – parts available January 28, start reworking in Westfield immediately.
Field effectivity – rework M7715's in LA30's when symptoms are present.
(Time To Install And Test 1.5 Hours.) (Kit Contents – PF1139 – FCO/Prints and Parts)

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DEC-O-LOG Engineering Change Order Log

M8300

KK8-E Major Registers

PROCESSOR TYPE PDP-8/E Family

M8300-00001 **CODE: D** **CS: A** **ETCH: B**
JAN-71 - CORRECTION: Relayout board to new etch revision "B " to meet production standards; update prints.
In-plant effectivity -Phase-in

M8300-00002 **CODE: D** **CS: B**
JAN-71 - PROBLEM: IC's labeled wrong on drawing E-CS-M8300-0-1.
CORRECTION: Make corrections as follows: Change E17 to E5, change E7 to E15, change E12 to E10, change E1 to E9, and change E2 to E14.
In-plant effectivity -Documentation change only

M8300-00003 **CODE: P** **CS: C**
APR-73 - PROBLEM: There is a documentation error on the M8300 Circuit Schematic the representation of the logic on the input to MQ does not agree with the IC manufacturer's given pin numbers for the 8271 chip.
CORRECTION: Remove those inverter sections of E17, E39, and E54 which have pin 13 for input, and all output connections to that inverter.
In-plant effectivity -Documentation change only

M8300-D0004 **CODE: F** **CS: D**
OCT-73 - PROBLEM: Under certain conditions, MB bits 8 through 11 can be picked up, either one bit at a time or in any combination. The known conditions at this time are: The M8300 mounted up on extenders; The +5 volt supply adjusted above approximately 4.95V ; Excessive noise on the bus introduced by customer or DEC interfaces; A noise sensitive 8271 IC at location E50 on the M8300. It must be noted that not all computers will show this problem. The minimum conditions required are the noise sensitive 8271 IC and one or more of the other listed conditions.
CORRECTION: Add two jumpers to ground: From the feed-thru at DT2 to E59 pin 8, and from the feed-thru at DF1 to the feed-thru below and to the left of E50 pin 8, which runs to E50 pin 8.
In-plant effectivity -Rework all M8300's in-plant as of 11/15/73.
Field effectivity -Rework all M8300's if symptoms are present.
(Time To Install And Test .5 Hour.) (Kit Contents -NF1083 -FCO/Prints)

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M8320

Bus Loads for PDP-8/E

PROCESSOR TYPE PDP-8/E

M8320-C0001 CODE: F CS: B ETCH: C
DEC-71 - PROBLEM: ZONKER MD DIR causes spike during F-TP2 ; this can cause the CPMB to go to the MD lines in error.
CORRECTION: Gate TP2 against FETCH to trigger the ZONKER .
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8320's CS Revision "A " and earlier; mandatory when M8330 is installed.
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO And Parts)

M8320-00002 CODE: D CS: C ETCH: D
APR-72 - PROBLEM: Diodes in +3 volt strings warm up and may burn board.
CORRECTION: Relayout board to increase distance between diodes for better heat dissipation.
In-plant effectivity -02 phase-in

M8320-D0003 CODE: F CS: D
JUL-73 - PROBLEM: On machines with three or four omnibus and heavy loading of the Data Bus, the Data Bus cannot recover fast enough following TS3 of an I/O cycle to allow Break Priorities to be determined. Also, Operate group instructions are marginal. The problem may be observed where twelve or more devices use the Data Bus.
CORRECTION: Decrease the twelve Data Bus pull-up resistors from 1.5K to 1K.
In-plant effectivity -03 * -All machines with expander box shipped after August 1, 1973.
Field effectivity -Rework all M8320's in PDP-8/E, 8/F, and 8/M with 3 or 4 omnibus and heavy loading of the Data Bus.
(Time To Install And Test 1.5 Hours.) (Kit Contents -F901 FCO/Prints And Parts)

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M8321

TM8-E Output Control

PROCESSOR TYPE PDP-8/E

M8321-00001 CODE: D CS: B ETCH: C
OCT-72 - CORRECTION: Relayout etch board to new revision "C " to eliminate wires on existing boards.

NOTE: See correction supplement ECO M8321-0001A.
In-plant effectivity -02, phase-in

M8321-0001A CODE: D
OCT-72 - CORRECTION 1: Correct signal names.
PROBLEM 2: ECO M8321-00001 indicated a field effect.
CORRECTION 2: Delete field involvement.
In-plant effectivity -Unchanged

M8321-00002 CODE: P CS: C
MAR-73 - PROBLEM 1: On print D-AH-M8321-0-5, diodes D1 thru D4 are drawn backwards.
CORRECTION 1: Reverse diodes on drawing.
PROBLEM 2: Note 3 of Circuit Schematic missing on Assembly Hole drawing.
CORRECTION 2: Show Note 3 on Assembly Hole drawing.
In-plant effectivity -06 documentation change only

M8321-00003 CODE: P CS: D
MAR-73 - CORRECTION: Correct print errors on M8321 Circuit Schematic.
In-plant effectivity -06 documentation change only

M8321-B0004 CODE: F CS: E
MAY-73 - PROBLEM: Wrong termination on signal line, **CLEAR ALL** .
CORRECTION: Change value of resistor R7 from 220 to 1K ohms.
In-plant effectivity -03 * -Rework all M8321's in-plant as of May 29, 1973.
Field effectivity -Rework all M8321's
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

M8321-B0005 CODE: F CS: F
JUN-73 - PROBLEM: Race condition exists between setting and resetting MPXA flip-flop.
CORRECTION: Remove set earlier. The rework instructions are as follows: Cut etch, side 1, between E23 pin 1 and E23 pin 2; Cut etch, side 1, between E23 pin 2 and E22 pin 4, near E23; Add jumper E22 pin 4 to E23 pin 1; Add jumper E23 pin 2 to E20 pin 11.
In-plant effectivity -03 * -Rework all M8321's as of June 27, 1973.
Field effectivity -Rework all M8321's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

M8321-00006 CODE: D CS: H
JUL-73 - PROBLEM 1: M8321 etch revision "C " documentation was inactivated erroneously.
CORRECTION 1: Activate drawings.
PROBLEM 2: M8321 etch board needs two jumpers added and two etch cuts.
CORRECTION 2: Add three jumpers and two etch cuts as defined by FCO's M8321-B0004 and M8321-B0005.
In-plant effectivity -03 * -Rework all etch revision "C " boards as specified in FCO's M8321-B0004 and M8321-B0006.

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M8322

TM8-E Control And Break

PROCESSOR TYPE PDP-8/E

M8322-00001 CODE: D CS: C ETCH: D
OCT-72 - CORRECTION: Relayout board to new etch revision "D " to eliminate wires on existing boards.

NOTE: See correction supplement ECO M8322-0001A.
In-plant effectivity -02 phase-in

M8322-0001A CODE: D
OCT-72 - CORRECTION 1: Correct signal names.
PROBLEM 2: ECO M8322-00001 indicated a field effect.
CORRECTION 2: Delete field involvement.
In-plant effectivity -06 documentation change

M8322-C0002 CODE: F CS: D
MAR-73 - CORRECTION 1: Correct errors on the M8322 Circuit Schematic.
CORRECTION 2: Eliminate **BAD TAPE** signals.
PROBLEM 3: **EOT** not functioning correctly.
CORRECTION 3: Change gating of **EOT** signals.

NOTE 1: See correction supplement FCO M8322-B0003.

NOTE 2: This FCO must be installed in conjunction with FCO's M8323-C0004 and M8327-C0002.

NOTE 3: The rework procedure for etch revision "B " or "C " is as follows: Cut etch at E7 pin 2, side 2; Cut etch at first feed-thru coming from E7 pin 1, side 2; Cut etch at first feed-thru coming from FJ1 on side 2. Remove jumpers FL1 to E21 pin 12, E21 pin 13 to first feed-thru coming from E19 pin 11, E21 pin 2 to feed-thru below C32, E10 pin 3 to E7 pin 3, and E10 pin 4 to feed-thru coming from E23 pin 12. Add wire jumpers E21 pin 1 to feed-thru coming from E30 pin 9, E21 pin 13 to feed-thru coming from E23 pin 12, E12 pin 12 to E10 pin 4, E36 pin 4 to E10 pin 3, E36 pin 5 to feed-thru coming from FJ1, and E36 pin 6 to E8 pin 6. For etch revision "C " only: Cut etch on both sides of C30 on side 1 of board. This is a feed-thru coming from AA2. Add wire from negative side of C30 to feed-thru coming from AF1.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8322's
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints)

M8322-C0003 CODE: F CS: E
APR-73 - PROBLEM 1: Mistake in FCO M8322-C0002 Retrofit Instructions.
CORRECTION 1: Correct as follows: Delete from FCO M8322-C0002: "Add wire E12 pin 12 to E10 pin 4. Add to FCO M8322-C0002: Add wire E21 pin 12 to E10 pin 4 " .
CORRECTION 2: Add wire which is missing on **EOT** gating. Retrofit Instructions: Cut etch E10 pin 2 side 2. Add wire E10 pin 2 to first feed-thru coming from E19 pin 2.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8322's when symptoms are present.
(Time To Install And Test 1.0 Hour.) (Kit Contents --FCO/Prints)

M8322-B0004 CODE: F CS: F
MAY-73 - PROBLEM: Wrong termination on **CLEAR ALL** signal line.
CORRECTION: Correct termination as described in the following rework instructions: Cut etch, side 2 between resistors R1 and R11; drill hole above finger DA2; replace R1 with a 1.5K ohm resistor; install jumper from DA2 to the top of R1; install two 664 diodes as shown on drawing included in the FCO.
In-plant effectivity -03 * -Retrofit all units in house and in field as of May 29, 1973.
Field effectivity -Rework all M8322's.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

M8322-00005 CODE: D CS: H ETCH: E
JUL-73 - PROBLEM: M8322 etch revision "D " documentation was inactivated erroneously.
CORRECTION: Reactiviate drawings. Relayout board to new etch revision "E ".
In-plant effectivity -02 phase-in

M8322-B0006 CODE: F CS: J
AUG-73 - PROBLEM: Write strobes in the gap on nine channel drives.
CORRECTION: Clear **CWDR** on trailing edge of **GO** . The rework includes two etch cuts and the addition of two jumpers, one of which goes from E20 pin 5 to the first feed-thru coming from JK2.

NOTE: The problem is apparent when running Control Test, Part II , Test 26.
In-plant effectivity -03 -Rework immediately
Field effectivity -Rework all M8322's
(Time To Install And Test .5 Hour.) (Kit Contents -F937 FCO/Prints)

M8322-B0007 CODE: F CS: K
NOV-73 - PROBLEM: **ILLEGAL FUNCTION** is reported if the following conditions are true: Switching drives, At BOT on one drive, and Doing space reverse on a second drive. The error is identified by EOF NOT EXPECTED or EOF NOT FOUND , using Random Exerciser.
CORRECTION: Allow drives to change at any TP4 if RWS is true; Gate **SP REV AND BOT** with signal active. The rework procedure is as follows: Cut copper, side 2, between feed-thru coming from E27 pin 2 and E8 pin 8. Add jumper from feed-thru coming from E27 pin 2 to feed-thru coming from E25 pin 2. This feed-thru is located to right of E27. Add jumper from feed-thru coming from E8 pin 5 to finger FL1.

NOTE: This ECO must be installed in conjunction with FCO M8323-B0007.
In-plant effectivity -All multiple drive TM8-E's must be retrofitted immediately. All single drive units must have this ECO by 11/15/73.
Field effectivity -Rework all M8322's in all multiple drive systems immediately; in all single drive systems, as soon as possible.
(Time To Install And Test 1.0 Hour.) (Kit Contents -NF1084 - FCO/Prints)

M8322-C0008 CODE: F CS: L
FEBRUARY-74 – PROBLEM: Overloaded signal **CB-3 CLR STATUS L** sometimes does not clear STATUS registers.
CORRECTION: Change value of resistor R2 from 220 to 470 ohms; R2 is located above E15 Pins 8 thru 14.
In-plant effectivity – rework M8322's in-plant immediately
Field effectivity – rework all M8322's when symptoms are present or at next PM
(Time To Install And Test 1.0 Hour) (Kit Contents – PF1203 – FCO/Prints and Parts)

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E C DEC-O-LOG Engineering Change Order Log

M8323

TM8-E Transport Status Control

PROCESSOR TYPE PDP-8/E

M8323-00001 CODE: D CS: B ETCH: C
OCT-72 - CORRECTION: Relayout etch board to new revision "C " to eliminate wires on existing boards.

NOTE: See correction supplement ECO M8323-0001A and continuation supplement ECO M8323-0001B.
In-plant effectivity -02 phase-in

M8323-0001A CODE: D
OCT-72 - PROBLEM 1: ECO M8323-00001 indicated field effectivity.
CORRECTION 1: Delete field involvement; ECO M8323-00001 is in for in-plant implementation only.
CORRECTION 2: Correct signal names on drawing D-CS-M8323-0-1.
In-plant effectivity -06 documentation change

M8323-0001B CODE: D
NOV-72 - PROBLEM: CRC ERROR flip-flop being set intermittently by **CRCE** line.
CORRECTION: Change clock from **CRCSL** to **BRDS H** in order to move away from changing **CRCE** line.
In-plant effectivity -02 phase-in

M8323-B0002 CODE: DF CS: C ETCH: D
DEC-72 - PROBLEM 1: Assembly Hole drawing does not conform to note 3 of sheet 2 of drawing D-CS-M8323. Cable not grounded.
CORRECTION 1: Add grounds as per note 3 on sheet 2 and also add grounds on L, N , and NN on connector J1.
PROBLEM 2: Noise on cable.
CORRECTION 2: Change terminators R8 through R19 and R22 through R34 from 150 ohms to 120 ohms. Also change R40 through R64 from 270 ohms to 220 ohms. Delete R20 from Parts List.
PROBLEM 3: **CRC ERROR** being cleared by **RDS** at **LRC** time.
CORRECTION 3: AND **RDS** to **CRCS** .
PROBLEM 4: **SET PULSE** is issued during settle down in CONTINUOUS MODE .
CORRECTION 4: Only leading edge of **SDWN L** to issue **SET PULSE** if in CONTINUOUS MODE .
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8323's
(Time To Install And Test 4.0 Hours.) (Kit Contents -FCO/Prints And Parts)

M8323-00003 CODE: P CS: D
MAR-73 - CORRECTION: Correct documentation for ECO M8323-00002 retrofit.
In-plant effectivity -06 documentation change only

M8323-C0004 CODE: F CS: E
MAR-73 - CORRECTION 1: Correct documentation errors on Circuit Schematic.
PROBLEM 2: **SET** pulse is too wide.
CORRECTION 2: Change resistor R38 from 18K to 10K ohms and capacitor C41 from 1000 pfd to 270 pfd.
PROBLEM 3: LRC ERROR not being set.
CORRECTION 3: Change LRC ERROR flip-flop strobe timing.
PROBLEM 4: **BAD TAPE** signal causes erroneous interrupts.
CORRECTION 4: Eliminate **BAD TAPE** signal.

NOTE: This FCO must be installed in conjunction with FCO's M8322-C0002 and M8327-C0002.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8323's
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints And Parts)

M8323-B0005 CODE: F CS: F
APR-73 - PROBLEM: IC E8 may oscillate.
CORRECTION: Change capacitor C40 from 1000 pfd, #10-00042, to 0.047 ufd, #10-09678, and resistor R37 from 100K, #13-00534, to 20K ohms, #13-02391.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8323's when symptoms are present
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

M8323-00006 CODE: D CS: H ETCH: E
JUL-73 - PROBLEM 1: M8323 etch revision "D " documentation was inactivated erroneously.
CORRECTION 1: Reactivate drawings.
PROBLEM 2: Etched board has excessive wire and one hole not drilled.
CORRECTION 2: Relayout to new etch revision "E ".
In-plant effectivity -02 phase-in

M8323-B0007 CODE: F CS: J
NOV-73 - PROBLEM: **ILLEGAL FUNCTION** is reported if the following conditions are true: Switching drives, At BOT on one drive, and Doing space reverse on a second drive. The error is identified by EOF NOT EXPECTED or EOF NOT FOUND , using Random Exerciser.
CORRECTION: Allow drives to change at any TP4 if RWS is true; Gate **SP REV AND BOT** with signal active. The rework procedure is as follows: For etch revision "B " only, remove jumper E28 pin 3 to feed-thru. For etch revision "B " and "E ", add jumper E28 pin 3 to finger FL1. For etch revision "E " only, cut etch side 1 below finger FL1 and on side 1 at E28 pin 3.

NOTE: See continuation supplement FCO M8323-B007A.
In-plant effectivity -All multiple drive TM8-E's must be retrofitted immediately. All single drive units must have this ECO by November 15, 1973.
Field effectivity -Rework all M8323's in all multiple drive systems immediately; in all single drive systems, as soon as possible.
(Time To Install And Test 1.0 Hour.) (Kit Contents -NF1084 - FCO/Prints)

M8323-B007A CODE: F
FEB-74 - CORRECTION: This is a correction to FCO M8323-B0007; the following etch cut was omitted: On etch revision "E " only, cut etch on side 1 at E28 pin 3.
In-plant effectivity -Additional rework specified for etch revision "E " boards
Field effectivity -Additional rework specified for etch revision "E " boards

M8323-C0008 CODE: F CS: K

FEBRUARY-74 – PROBLEM 1: Overloaded signal **SC-1 CLR STATUS L** sometimes does not clear STATUS registers.

CORRECTION 1: Change value of resistor R6 from 150 to 470 ohms.

PROBLEM 2: Race condition exists on resetting the FM flip-flop.

CORRECTION 2: The rework procedure is as follows: For etch revision "B", remove wire from E35 Pin 4 to feed-thru. Add wire from E35 Pin 4 to feed-thru from finger FC1. Change R6 to 470 ohms. For etch revision "E", cut etch, side 1, at feed-thru coming from E35 Pin 4. Add wire from feed-thru coming from E35 Pin 4 to feed-thru coming from finger FC1. Change R6 to 470 ohms.

In-plant effectivity – rework the in-house units immediately

Field effectivity – rework all M8323's when symptoms are present or at next PM.

(Time To Install And Test 1.0 Hour.) (Kit Contents – PF1204 – FCO/Prints and Parts)

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Engineering Change Order Log
DEC-O-LOG

M8326

Interprocessor Buffer Module

PROCESSOR TYPE PDP-8/E

M8326-00001 CODE: D CS: C
JUN-71 - PROBLEM 1: Wrong signal sent out on cable.
CORRECTION 1: Send IOT 4, TP3 out on cable.
PROBLEM 2: Poor noise margins on input buffer due to method of termination.
CORRECTION 2: Replace twelve diodes with twelve 6.8K resistors and connect to -15V. Replace 8881 IC's with 97401 IC's.
In-plant effectivity -03 rework immediately

M8326-00002 CODE: D CS: D
JUL-71 - PROBLEM 1: Wrong signal sent out on cable.
CORRECTION 1: Send out IOP4, TP3 on cable.
PROBLEM 2: Poor noise margins.
CORRECTION 2: Replace diodes D664 with 6.8K resistors and connect to the -15V. Replace 8881 IC's with 97401 IC's
In-plant effectivity -01 phase-in

M8326-00003 CODE: D CS: E
AUG-71 - PROBLEM: As an interprocessor buffer, the option presents objectionable programming restrictions in some applications.
CORRECTION: Relayout etch to add a **DONE** flip-flop set by the trailing edge of IOT 65X2 and cleared by IOT 65X7 and TP3.
In-plant effectivity -01 phase-in

M8326-C0004 CODE: F
FEB-72 - PROBLEM: As an interprocessor buffer, the option presents objectionable programming restrictions in some applications. ECO M8326-00003 corrected this problem but did not allow for etch rev C or D to be retrofitted.
CORRECTION: Retrofit to add a **DONE** flip-flop, set by the trailing edge of IOT 65X2 and cleared by IOT 65X7 and TP3. Add split lugs so the option may use the **DONE** flip-flop, or not.

NOTE: Only in-plant or depot retrofitted boards should be installed at customer site.
In-plant effectivity -Rework immediately all etch rev **C & D** in stock
Field effectivity -All M8326 CS rev **C & D**
This FCO creates CS revisions **C1** and **D1** . (Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents - FCO/Prints And Parts)

M8326-B0005 CODE: F
MAY-72 - PROBLEM: FCO M8326-C0004 failed to include the modification to IOT 65X2 so the **DONE** flip-flop could be set at **TP3** and IOT 65X2.
CORRECTION: Add nand gate and split lugs to allow for operation with or without the **DONE** flip-flop.
In-plant effectivity -Rework immediately
Field effectivity -All M8326 modules, CS rev **C1** and **D1**
This FCO creates CS revisions **C2** and **D2** . (Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents - FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

M8327

TM8-E Registers

PROCESSOR TYPE PDP-8/E

M8327-00001 CODE: D CS: B ETCH: C
OCT-72 - CORRECTION: Relayout the etched board to new revision "C " to eliminate wires on existing boards.
In-plant effectivity -02 phase-in

M8327-C0002 CODE: F CS: C
MAR-73 - CORRECTION 1: Correct Circuit Schematic documentation error.
PROBLEM 2: **BAD TAPE** signal causes erroneous interrupts.
CORRECTION 2: Elimination of **BAD TAPE** signal.

NOTE 1: This FCO must be installed in conjunction with FCO's M8322-C0002 and M8323-C0004.

NOTE 2: This FCO corrects an intermittent error caused by the time relation between LRC CHARACTER and the generation of **BAD TAPE** . It will generally be noticed when running in CONTINUOUS MODE .
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8327's
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints)

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M8328

Buffer Memory Clamp Loads, Switches and Indicator

PROCESSOR TYPE PDP-8/E

M8328-00001 CODE: P CS: B
JUL-71 - CORRECTION: Quantities of holes, resistors and eyelets corrected on parts list.
In-plant effectivity -06 documentation change only

M8328-A0002 CODE: F CS: C
NOV-71 - PROBLEM: The 1.5K resistors in the IF and DF switch circuits are only 1/4 watt; they overdissipate if a short occurs in the logic.
CORRECTION: Increase their rating to 1/2 watt.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8328
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO And Parts)

M8328-C0003 CODE: DF CS: D
JAN-72 - PROBLEM: ROM in BM8-L system causes upper memory fields to fail.
CORRECTION: Connect **ROM ADDR L** line to +15V pre-change circuit.
In-plant effectivity -02 phase-in
Field effectivity -Rework M8328 when ROM is added to BM8-L (as required)
(Time To Install And Test 2.0 Hours) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

M8329

LC8-E Parallel Interface Module

PROCESSOR TYPE PDP-8/E

M8329-B0001 CODE: F CS: B
NOV-71 - PROBLEM 1: When running LA30 printer in single step, only one character can be printed as PDP-8/E stops with **TS1** true. This exceeds maximum allowed print strobe duration.
CORRECTION 1: Remove **TS1** from print strobe gate; add **TS2** .
CORRECTION 2: Corrects print errors.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all M8329's CS revision "A " and earlier
(Time To Install And Test 1.0 Hour) (Kit Contents -FCO Only)

M8329-00002 CODE: D CS: C ETCH: D
FEB-72 - PROBLEM: M8329 is required to control either LA30-P or Centronics 101 Lineprinter.
CORRECTION: Change print strobe logic to allow for slower loading time of the 101.

NOTE: See supplement ECO M8329-0002A which cancels this ECO.
In-plant effectivity -02 phase-in

M8329-0002A CODE: D
MAR-72 - PROBLEM: ECO M8329-00002 is totally wrong.
CORRECTION: Ignore ECO M8329-00002 totally.
In-plant effectivity -Cancelled

M8329-C0003 CODE: F CS: C
APR-72 - PROBLEM: When a **TRANSMIT IOT 6XX1** is issued, a spike on **TRANSMIT IOT 6XX0** causes the transmit flag to be erroneously set.
CORRECTION: Change the enabling signal, **I/O PAUSE** , on md bits 8, 10 and 11 to be IOT device codes, transmit or receive.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all M8329's as required
(Time To Install And Test 1.0 Hour) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

M8330

KK8-E Timing Generator

PROCESSOR TYPE PDP-8/E

M8330-C0001 CODE: F CS: B ETCH: C
DEC-71 - PROBLEM 1: Logic change required for KE8-E EAE's using M8340 etch board revision "F " or later.
CORRECTION 1: Add logic to allow KE8/E to restart CP without generating BUS STROBE .
CORRECTION 2: Corrects drawings.

NOTE: See supplement FCO's M8330-C001A and M8330-C001B.
In-plant effectivity -02 phase-in
Field effectivity -See supplement FCO M8330-C001A
(Time To Install And Test 1.0 Hour.)
(Kit Contents -FCO/Prints And Parts) Supplements M8330-C001A and M8330-C001B will also be included in the kit

M8330-C001A CODE: F
MAY-72 - PROBLEM: CS revision "A ", etch revision "B " and earlier are not compatible with new EAE. Disposition code on ECO M8330-C0001 is not complete.
CORRECTION: Update board to obtain compatibility.
In-plant effectivity -Retrofit only revision "B " boards in EAE systems for May 1972 shipment; all etch revision "B " boards June and later.
Field effectivity -Rework all M8330 etch revision "B " and earlier

M8330-C001B CODE: F
JUN-72 - PROBLEM: Break-in point not realistic on ECO M8330-C001A.
CORRECTION: Change break-in point.
In-plant effectivity -Retrofit only etch revision "B " boards in EAE systems for June 1972 shipment; all etch revision "B " boards July and after.
Field effectivity -Unchanged

M8330-00002 CODE: P CS: C
OCT-72 - CORRECTION: Corrects errors on Circuit Schematic.
In-plant effectivity -06 documentation change only

M8330-00003 CODE: D CS: D
JAN-73 - PROBLEM 1: EAE clock has marginal output.
CORRECTION 1: Drive EAE clock, JU1, with E07 pin 8.
PROBLEM 2: Signals need pull-ups.
CORRECTION 2: Add 1K pull-ups to E17 pins 4 and 6.

NOTE: See correction supplement M8330-0003A.
In-plant effectivity -03 retrofit all systems with EAE options for February 1973 shipments. ECO must be installed in all boards for March 1, 1973 shipments.

M8330-0003A CODE: D
FEB-73 - PROBLEM: ECO M8330-00003 retrofit instructions call out incorrect etch cut.
CORRECTION: Repair incorrect etch cut by adding a jumper from E12 pin 12 to feed-thru between E16 and E17. Cut etch, Side 2, at E17 pin 12 not E12.
In-plant effectivity -03 rework immediately; must be in issues by March 15, 1973.

M8330-00004 CODE: D CS: E ETCH: D
SEPTEMBER-73 – PROBLEM: The slow MOS memories, like the MR8-F PROM systems, require the machine timing to stop, **STALL**, while their access time is reached.
CORRECTION: Add the **STALL** signal to the M8330 to stop the timing chain at the end of TS1.

NOTE: This ECO changes all references to the M8347 back to M8330, CS revision "E", etch revision "D". There is a new print set that will replace the M8330 set. No retrofit can be done. The M8347 is now obsolete.
In-plant effectivity – as of April 1, 1974, all M8330's shipped must be CS revision "E".

M8330-00005 CODE: D CS: F ETCH: E
SEPTEMBER-73 – PROBLEM: The 8330 etch revision "D" board has etch too close to the edge of the board and there are three feed-thru holes too close to the top fingers.
CORRECTION: Relayout the etch to new revision "E"; there are no circuit changes.
In-plant effectivity – As of April 1, 1974, all M8330's to be shipped must be CS revision "F", etch revision "E".

M8330-00006 CODE: DF CS: H
FEBRUARY-74 – PROBLEM: The PROM Memory MR8-F requires an M8330 at etch revision "D" or later. Other processors can use either the old or new timing boards.
CORRECTION: Put a sticker on the handle of all etch revision "D" or later M8330's to ensure that any replacement is the correct revision for that processor.
In-plant effectivity – attach stickers immediately
Field effectivity – Attach stickers to all etch revision "D" M8330's. (Time to Install and Test .1 hour.) (Kit Contents – PF1194 – FCO/prints and parts)

M8330-C0007 CODE: DF CS: J
FEBRUARY-74 – PROBLEM: The time allotted to pull MODE CONTROL, pin 9, on two of the 74194's, during a STALL, is too short. If STALL comes too early or late, it will cause the timing chain to get out of sync.
CORRECTION: Instead of just pulling MODE CONTROL on those two 74194's, this FCO stops the clock that goes to all the 74194's.
In-plant effectivity – rework all etch revision "D" and "E" boards immediately
Field effectivity – rework etch revision "D" and "E" M8330's only when MR8-F option is installed.
(Time to Install and Test 1.0 hour.) (Kit Contents – PF1195 – FCO/prints and parts)

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E C DEC-O-LOG Engineering Change Order Log

M8330

KK8-E TIMING GENERATOR

PROCESSOR TYPE PDP-8/E

M8330-D0008 **CODE: F** **CS: K**

MARCH-74 – PROBLEM: The pulse syncs controlling the Mode Control on the 74194 Shift Registers may be slow switching. This may cause the Mode Control to change when the clock line is not high and may inhibit shifting with consequent loss of one or both bits in the timing chain.

CORRECTION: Change the 74H74's to 74S74's in locations E21, E30, and E40.

In-plant effectivity – rework where problem exists. Implement in all modules as soon as parts are available.

Field effectivity – rework M8330's in the field when symptoms are present. Rework in Depots when modules are returned from the field. Only M8330's at etch "E" and later, KM8-F, are affected.

(Time to Install and Test .5 hour.) (Kit Contents – PF1230 – FCO/prints and parts)

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EC DEC-O-LOG Engineering Change Order Log

M8331

TA8 Cassette Interface

PROCESSOR TYPE PDP-8/E, PDP-8/F, PDP-8/M

M8331-00001 CODE: D CS: B
SEP-72 - PROBLEM: Terminating resistors on line drivers cause data errors due to excessive noise.
CORRECTION: Remove terminators from drivers.

NOTE: These terminators will reappear on the M7760, CS revision "C ", at the TU60.
In-plant effectivity -03 * -Retrofit all boards in house as of 9//11/72

M8331-00002 CODE: P CS: C
JAN-73 - PROBLEM: Module cannot be Production Released because the quantity of 180 ohm resistors is incorrect on the Parts List.
CORRECTION: Change quantity from 19 to 18.
In-plant effectivity -06 documentation change only

M8331-B0003 CODE: F CS: D
MAY-73 - PROBLEM 1: If a REWIND command is immediately followed by SKIP ON READY IOT , the skip will occur erroneously due to circuit delays in the TU60. The problem shows up with CAPS 8 Bootstrap Loader.
CORRECTION 1: Remove rewind status level from gating. The rework instructions are as follows: 1: Etch cut, E8 pin 5, side one, two places. 2: Etch cut on run from E18 pin 9, side 2, after feed-thru near E19. 3: Jumper E9 pin 4 to feed-thru, below E8, at etch run to E8, pin 5. 4: Jumper E8 pin 5 to feed-thru above E14, at etch run to E14, pin 8. 5: Jumper from feed-thru, above E18, at E18, pin 9 run , to feed-thru, above E9, at E8 pin 6 run.
CORRECTION 2: Correct miscellaneous print errors.
In-plant effectivity -03 * -Rework as of May 15, 1973.
Field effectivity -Rework all M8331's in all TA8-E's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

M8331-B0004 CODE: F CS: E
JUN-73 - PROBLEM: When the TA8 Cassette and VT8-E Display are run together with DEC X8 program, the program crashes. Crash is usually a 7402 instruction, location zero, field where Cassette program lives. Data being enabled by M8331 up to TP4 when priorities are tested by DMA devices on omnibus.
CORRECTION: Disable data onto DATA LINES of omnibus at end of I/O pause.
In-plant effectivity -03 * -Rework all boards as of June 20, 1973.
Field effectivity -Rework all M8331's in all TA8 systems.
(Time To Install And Test 1.5 Hours.) (Kit Contents -FCO/Prints)

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Engineering Change Order Log
DEC-O-LOG

M8336

VT8-E Frequency Divider

PROCESSOR TYPE PDP-8/E

M8336-00001 CODE: D CS: C
FEB-73 - PROBLEM 1: When connected for 50 Hz operation, the displayed data is offset upwards by one row in alpha and two lines in graphic mode.
CORRECTION 1: Add three etch cuts and three wires.
PROBLEM 2: E23 pin 6 left floating.
CORRECTION 2: Add wire to +3V.
PROBLEM 3: Printer IOT's 4 and 6 clear the AC.
CORRECTION 3: Add one etch cut between E35 pins 11 and 12; add one wire between E35 pin 12 and E31 pin 2.
In-plant effectivity -03 rework all boards as of March 1, 1973; do not ship any units without this ECO installed.

M8336-B0002 CODE: F CS: D
MAR-73 - PROBLEM 1: DEC IC 74193 unreliable when used as cascaded frequency divider.
CORRECTION 1: Incorporate IC DEC 74161 into new layout.
PROBLEM 2: Excessive wires and etch cuts required on present etch board.
CORRECTION 2: Relayout board to new etch revision "B ".

NOTE 1: See correction supplement M8336-B002A.

NOTE 2: This FCO ordered creation of a new revision "B " etch board; instead, the new etch will be "C " as noted in supplement FCO M8336-B002A.
In-plant effectivity -Use etch revision "B " board on VK8-E's after June 1, 1973. Revision "B " etch must be used on VT8-E after May 1, 1973.
Field effectivity -Exchange all waivered M8336's, etch revision "B ", or earlier.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

M8336-B002A CODE: F ETCH: C
MAR-73 - PROBLEM: FCO M8336-B0002 states that the new revision for the etch is "B ", but revision "B " layout is not acceptable because of previous release.
CORRECTION: Change 5010071 on FCO M8336-B0002 to new revision "C ".
In-plant effectivity -Unchanged except that etch revision reference becomes "C "
Field effectivity -Unchanged except that etch revision reference becomes "C ".

M8336-00003 CODE: D CS: E ETCH: D
MAY-73 - PROBLEM 1: Spacing problems exist on etch board.
CORRECTION 1: Revise etch board to 1: Provide correct spacing for capacitor C59, 2: Move etch from under crystal V1, 3: Remove ground from pin CU2, connect CT2 to ground run, and 4: Replace wire with etch if possible.
CORRECTION 2: Correct documentation errors on M8336 Circuit Schematic.
In-plant effectivity -Use up present stock and then break-in new board.

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E C DEC-O-LOG Engineering Change Order Log

M8337

VT8-E Line Buffer

PROCESSOR TYPE PDP-8/E

M8337-C0001 CODE: DF CS: B
MAR-73 - PROBLEM 1: If a cursor appears at the sixty-third or sixty-fourth position of a line, a portion of the cursor may be seen to the left of the first position of the line.
CORRECTION 1: Retrofit board.
PROBLEM 2: Wrong eyelet called out on Parts List.
CORRECTION 2: Correct Parts List.
CORRECTION 3: Correct documentation errors.

NOTE: IC E27, a 7474, must be removed, disposed of, and a new IC installed in the implementation of this FCO.
In-plant effectivity -03 * retrofit all modules in-plant immediately.
Field effectivity -Rework all M8337's in VT8-E if symptoms are present.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts None) The DEC on-site labor charge will be the time required to install and test this FCO at the then current hourly rate. (Kit Contents - FCO/Prints And Parts)

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ECO DEC-O-LOG Engineering Change Order Log

M8340

KE8-E, EAE INSTRUCTION DECODER

PROCESSOR TYPE PDP-8/E

M8340-00001 CODE: D CS: D
JULY-71 – PROBLEM 1: E04 Pins 10 and 11 interchanged.
CORRECTION 1: Delete etch from E04 Pin 11; reconnect etch to E04 Pin 10.
PROBLEM 2: E30 Pins 10 and 13 interchanged.
CORRECTION 2: Delete existing etch connections on E30 Pins 10 and 13 and reconnect etch to E30 Pins 10 and 13 exactly opposite from original.
PROBLEM 3: Data bus inputs, **DATA 08** thru **DATA 11** are 180 degrees misplaced.
CORRECTION 3: DELETE DR1 to E32 Pin 9, DS1 to E32 Pin 11, DU1 to E32 Pin 7, and DV1 to E32 Pin 5. ADD DR1 to E32 Pin 5, DS1 to E32 Pin 7, DU1 to E32 Pin 11, and DV1 to E32 Pin 9.
PROBLEM 4: IC's are not numbered.
CORRECTION 4: Add etched numbers to layout wherever possible.
PROBLEM 5: Handle holes improperly located.
CORRECTION 5: Relocate handle holes to correct positions

NOTE 1: See continuation supplement ECO's M8340-00002 and M8340-00003.

NOTE 2: ECO M8340-00003 cancels the relayout to new etch revision "E" which is ordered by this ECO.
In-plant effectivity – 03 rework immediately.

M8340-00002 CODE: D
JULY-71 – PROBLEM: Timing considerations involving the signal **MD DIRECTION** on single Omnibus systems, inhibit step counter bits 3 and 4 from being loaded with the SCL instruction, STEP COUNTER LOAD FROM MEMORY.
CORRECTION: DELETE etch connection E20 Pin 07; ADD HF2 to E20 Pin 07.

NOTE: This ECO is a supplement to ECO M8340-00001.
In-plant effectivity – 04 rework immediately

M8340-00003 CODE: P
NOVEMBER-71 – PROBLEM: ECO's M8340-00001 and M8340-00002 ordered relayout of etch #50-09603 to revision "E". Since the board is still at a Limited Release level we do not wish to do this.
CORRECTION: Cancel relayout of etch and revise Module History to show that etch is remaining at revision "D"; rework is to continue as ordered by previous ECO's.
In-plant effectivity – 06 documentation change only

M8340-00004 CODE: D CS: E ETCH: E
NOVEMBER-71 – PROBLEM: Module does not meet production specifications, IC DEC380, input buffer to instruction register, may cause an erroneous EAE instruction to be decoded on a four Omnibus system, due to high threshold value on DEC380 input, and slow charge time on the bus.
CORRECTION: Create new etch revision "E" and reconfigure EAE instruction register.
In-plant effectivity – 01 phase-in

M8340-C0005 CODE: F CS: F
MARCH-72 – PROBLEM: IC E4, a 7476 JK flip-flop, is not edge triggered and may cause an illegal mode swap.
CORRECTION: Replace IC E4 with a pin compatible, edge triggered JK flip-flop 74H106, DEC #19-10408.
In-plant effectivity – rework immediately
Field effectivity – rework M8340's in KE8-E's if symptoms are present
(Time To Install And Test 1.0 Hour) (Kit Contents – FCO/Prints and Parts)

M8340-00006 CODE: D
MAY-72 – PROBLEM: M8340 etch revision "D" and earlier are not compatible with the M8341 etch revision "D" now being shipped.
CORRECTION: Stop building and shipment of all M8340 revision "D" and earlier; ship only M8340 etch revision "E", CS revision "D".

NOTE: See continuation supplement M8340-0006A.
In-plant effectivity – implement immediately

M8340-0006A CODE: D
MAY-72 – PROBLEM: ECO M8340-00006 did not include some parts added to and deleted from the Parts List.
CORRECTION: Correct Parts List accordingly.
In-plant effectivity – unchanged

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E C DEC-O-LOG Engineering Change Order Log

M8341

EAE Register Control Module

PROCESSOR TYPE PDP-8/E

M8341-00001 CODE: D CS: B
JUN-71 - PROBLEM 1: M8341 etch revision "B ": E14 pin 1 has been mistakenly connected to its associated ground run. E14 pin 13 was connected to +5 volts in error.
CORRECTION 1: Disconnect ground from E14 pin 1; disconnect +5 volts from E14 pin 13.
PROBLEM 2: M8341 etch revision "B ": E17 pin 9 must be connected to connector HF2 to make use of the ACS instruction.
CORRECTION 2: Connect jumper wire from E17 pin 9 to connector HF2.
In-plant effectivity -04 rework

M8341-A0002 CODE: F CS: C
SEP-71 - PROBLEM: IC E18 pins 1 and 3 are interchanged, which prevents the AC from being cleared during a new NORMALIZE instruction when AC and MQ = 40000000.
CORRECTION: Delete connections to E18 pin 3 and E18 pin 1; reconnect exactly opposite from original.
In-plant effectivity -04 rework
Field effectivity -Rework all M8341's CS revision "B " and earlier.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

M8341-00003 CODE: D CS: D
NOV-71 - PROBLEM 1: Noise and signal cross talk affect AC and MQ LOAD . The problem becomes excessive when AC and MQ LOAD travels across a BC08M-0M cable.
CORRECTION 1: Modify AC and MQ LOAD .
PROBLEM 2: The +3 volt run generated by E3 (DEC380) is not capable of supporting the loads attached to it.
CORRECTION 2: Delete etch connection on E3 (DEC380) pin 13; add E4 (DEC7404) to +3 volt run.
PROBLEM 3: No test points provided.
CORRECTION 3: Add test points on Circuit Schematic where possible.
In-plant effectivity -02 phase-in

M8341-00004 CODE: D
MAY-72 - PROBLEM: The etched board is marginal in production.
CORRECTION: Stop shipment and building of all M8341 etched board revision "C " and earlier. Ship only etched board revision "D ", Circuit Schematic revision "D ".

NOTE: See correction supplement ECO M8341-0004A.
In-plant effectivity -09 phase-in

M8341-0004A CODE: D
MAY-72 - CORRECTION: Corrects ECO M8341-00004 to include some parts added to and deleted from the Parts List.
In-plant effectivity -06 documentation change only

M8341-B0005 CODE: F CS: E
NOV-72 - PROBLEM 1: +3V run is floating.
CORRECTION 1: Add wire to connect +3V run to proper pins, E1 pin 1 to pad leading to E4 pin 4.
PROBLEM 2: Documentation Circuit Schematic is wrong.
CORRECTION 2: Relabel +3V runs on Circuit Schematic.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8341's
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

M8341

EAE Register Control Module

PROCESSOR TYPE PDP-8/E

M8341-00001 CODE: D CS: B ETCH: C
JUN-71 - PROBLEM 1: M8341 etch revision "B ": E14 pin 1 has been mistakenly connected to its associated ground run. E14 pin 13 was connected to +5 volts in error.
CORRECTION 1: Disconnect ground from E14 pin 1; disconnect +5 volts from E14 pin 13.
PROBLEM 2: M8341 etch revision "B ": E17 pin 9 must be connected to connector HF2 to make use of the ACS instruction.
CORRECTION 2: Connect jumper wire from E17 pin 9 to connector HF2.
In-plant effectivity -04 rework

M8341-A0002 CODE: F CS: C
SEP-71 - PROBLEM: IC E18 pins 1 and 3 are interchanged, which prevents the AC from being cleared during a new NORMALIZE instruction when AC and MQ '@' 40000000.
CORRECTION: Delete connections to E18 pin 3 and E18 pin 1; reconnect exactly opposite from original.
In-plant effectivity -04 rework
Field effectivity -Rework all M8341's CS revision "B " and earlier.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO Only)

M8341-00003 CODE: D CS: D ETCH: D
NOV-71 - PROBLEM 1: Noise and signal cross talk affect AC and MQ LOAD . The problem becomes excessive when AC and MQ LOAD travels across a BC08M-0M cable.
CORRECTION 1: Modify AC and MQ LOAD .
PROBLEM 2: The +3 volt run generated by E3 (DEC380) is not capable of supporting the loads attached to it.
CORRECTION 2: Delete etch connection on E3 (DEC380) pin 13; add E4 (DEC7404) to +3 volt run.
PROBLEM 3: No test points provided.
CORRECTION 3: Add test points on Circuit Schematic where possible.
In-plant effectivity -02 phase-in

M8341-00004 CODE: D
MAY-72 - PROBLEM: The etched board is marginal in production.
CORRECTION: Stop shipment and building of all M8341 etched board revision "C " and earlier. Ship only etched board revision "D ", Circuit Schematic revision "D ".

NOTE: See correction supplement ECO M8341-0004A.
In-plant effectivity -09 phase-in

M8341-0004A CODE: D
MAY-72 - CORRECTION: Corrects ECO M8341-00004 to include some parts added to and deleted from the Parts List.
In-plant effectivity -06 documentation change only

M8341-B0005 CODE: F CS: E
NOV-72 - PROBLEM 1: +3V run is floating.
CORRECTION 1: Add wire to connect +3V run to proper pins, E1 pin 1 to pad leading to E4 pin 4.
PROBLEM 2: Documentation Circuit Schematic is wrong.
CORRECTION 2: Relabel +3V runs on Circuit Schematic.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8341's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

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M8349

1K Prom

PROCESSOR TYPE PDP-8/E

M8349-00001 CODE: D CS: A1
NOV-73 - PROBLEM: There were seventy-two M8349 boards made with slow 1702A PROM chips. Instead of having a 1 usec access time, these IC's are running out to about 1.5 usec.
CORRECTION: To be able to use these seventy-two boards, the STALL and LATCH times must be increased. To do this a potentiometer must be added to each delay to adjust the delay output to: STALL 2.2 usec, LATCH 2.35 usec.
In-plant effectivity -All seventy-two boards have been reworked by Memory Checkout. These modules are identified by a dot of blue paint on the 1702A PROM chips and are the only boards to be reworked per this ECO. If any of these seventy-two boards, with two potentiometers, come back to a Field Service Depot to be repaired, they should be scrapped.

M8349-00002 CODE: D CS: B
NOV-73 - PROBLEM: The STALL and LATCH delays are hard to adjust in checkout to cover the output range from IC to IC and manufacturer to manufacturer of the 74123 delays. It is also taking too much time to put in the address decode diodes during checkout.
CORRECTION: As we now have 1 usec 1702AD PROM chips, we can shorten the access time delays. The STALL and LATCH delays are combined into one STALL , a potentiometer is added to adjust the delay; the delay is shortened to 2.2 usec, plus or minus 50 nsec; five address diodes are added for Field 7, Address.

NOTE: See correction supplement ECO M8349-0002A.
In-plant effectivity -Rework will be done until a new etch board is available on a future ECO.

M8349-0002A CODE: D
JAN-74 - PROBLEM: The STALL delay time is incorrect as defined by ECO M8349-00002.
CORRECTION: Change the STALL delay from 1.4 usec, plus or minus 50 nsec, to 2.2 usec, plus or minus 50 nsec.
In-plant effectivity -All boards will be adjusted in Memory Checkout.

M8349-D0003 CODE: DF CS: C ETCH: C
JAN-74 - PROBLEM: ECO M8349-00002 ordered rework to use up the etch revision "B " boards. There are some feed-thru holes very close to notches in the board.
CORRECTION: Relayout the board per ECO M8349-00002 with the circuit change to use all three leads of the potentiometer and fix any other etch problems.

NOTE: See continuation supplement FCO M8349-D003A.
In-plant effectivity -Do not etch any revision "B " after February 1, 1974. Break-in of new etch in production by May 1974.
Field effectivity -Rework any M8349's on which a 7384 IC failure occurs. Except for the failure of other 7384's, only E4 and E24 are to be replaced per this FCO.
(Time To Install And Test 1.0 Hour) (Kit Contents -PF1163 -FCO/Prints And Parts)

M8349-D003A CODE: DF
JAN-74 - PROBLEM: Some 7384's fail on the EMA and MA00-MA03 bus lines. Also, the 7384's are a single source device with poor deliveries. FCO M8349-D0003 was originated as a Code 02 ECO which did not order reworking of M8349's.
CORRECTION: Change 7384's to 5384's, #19-10394 or #19-09486. Change Disposition Code to 03 to allow reworking. Change also to indicate that Field Service is affected.
In-plant effectivity -As of 1/21/74, put only 5384's or 384's in boards that are being made by production and are not soldered. For boards that are soldered, change only E4 and E24.
Field effectivity -Rework M8349's

M8349-D0004 CODE: F CS: D
FEBRUARY-74 – PROBLEM: The POWER OK line is not being held down long enough to cover the longest cycle time of the processor so that RUN will be cleared. The problem occurs only when you try to restart with SW when RUN is on.
CORRECTION: Change the length of DLY 1 from 1.2 usec to 7 usec by changing the value of capacitor C65 from 150 to 1000 pfd.
In-plant effectivity – rework immediately
Field effectivity – rework M8349's when symptoms are present
(Time to Install and Test .5 hour.) (Kit Contents – PF1209 – FCO/prints and parts)

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E C DEC-O-LOG Engineering Change Order Log

M8350

KA8-E/DA14-E POSITIVE BUS INTERFACE

PROCESSOR TYPE PDP-8/E, PDP-14

M8350-00001 CODE: D CS: B

SEP-71 - PROBLEM 1: Critical timing in restart circuitry.
CORRECTION 1: Change C28 to 68 pfd.
CORRECTION 2: Add note to print indicating a jumper change to eliminate extended cycles skewing into next machine cycle.
PROBLEM 3: Width delay labeled wrong.
CORRECTION 3: Change to read "3 usec ".
In-plant effectivity -03 rework immediately

M8350-C0002 CODE: F CS: C ETCH: C

DEC-71 - PROBLEM: If separation between IOP's is extended beyond 800 nsec. it is possible that timing out will not have been completed at the following **TP2** . This can cause the **KA8-E** to restart its timing and send the machine off into random locations in memory.
CORRECTION: Retrigger the **SEP DELAY** with the **IOP2** flip-flop clearing instead of **STB** .

NOTE: This FCO should be implemented in all M8350's, CS revision "B " and earlier, if IOP separation in excess of 800 nsec is required.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8350's, CS revision B and earlier
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M8350-D0003 CODE: DF CS: D

JUN-72 - PROBLEM: Incorrect delay time on **RESTART DELAY** .
CORRECTION: Change capacitor C27 to 82 pfd.

NOTE: This FCO is applicable to long bus systems where timing may be marginal on **RESTART DELAY** .
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8350's
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

M8350-C0004 CODE: F CS: E

NOV-72 - PROBLEM 1: RESTART delay is too short, causing undefined interrupts.
CORRECTION 1: Change the value of capacitor C27 from 82 pfd to 120 pfd.
CORRECTION 2: Update Circuit Schematic.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8350's
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

M8350-B0005 CODE: F CS: F ETCH: D

MAY-74 - PROBLEM: Noise level on cables interferes with the signals **AC CLEAR BUS NOT** , **INT RQST BUS NOT** , and **SKIP BUS NOT** .
CORRECTION: Replace IC E26 with a 7414 and insert a Schmitt Trigger in series with the Skip Bus.
In-plant effectivity -All KA8-E's or DA14-E's shipped with IND . 14/30 or 14/35's must have this ECO installed. Phase-in change in Puerto Rico and Ireland.
Field effectivity -Rework M8350's, etch revisions "B " and "C " to CS revision "F " in IND 14/30 or 14/35's installed with a DA14-E interfaced to a PDP-8/E, 8/F, or 8/M.
(Time To Install And Test 2.0 Hours.) (Kit Contents -PF1261 - FCO/Prints And Parts)

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M8360

Positive Bus Data Break Interface

PROCESSOR TYPE PDP-8/E, PDP-8/F, PDP-8/M

M8360-00001 CODE: P CS: B
APR-71 - CORRECTION: Corrects documentation errors on sheets #2 and #3 of drawing E-CS-M8360-0-1, revision "A ".
In-plant effectivity -06 documentation change only

M8360-00002 CODE: P CS: C
MAY-71 - CORRECTION: Corrects documentation with respect to a missing connection, several missing pin assignments, and cover sheet errors.
In-plant effectivity -06 documentation change only

M8360-D0003 CODE: F CS: D
DEC-72 - PROBLEM 1: Pin numbers missing on Circuit Schematic.
CORRECTION 1: Add pin numbers for diode arrays.
PROBLEM 2: Etch error at E42 leaving DATA 08 without clamps to ground and +3 volts.
CORRECTION 2: Add jumper from E42 pin 12 to E42 pin 13.
In-plant effectivity -03 rework beginning December 1, 1972.
Field effectivity -Rework all M8360's in KD8/E.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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M8650

KL8-E, KL8/EA Asynchronous Data Control

PROCESSOR TYPE PDP-8/E and PDP-8/M

M8650-00001 CODE: D CS: B ETCH: C

MAY-71 - PROBLEM: In some installations, noise is picked up by the cable assembly and brought back into the transmitter section where it enables the transmitter driver transistor, causing the transmission of false signals. Resistor R12 is under-rated. Capacitor C63 causes unacceptable output distortion.
CORRECTION: Add a diode in the transmitter circuit to protect the transmitter driver transistor from outside noise. This change introduces the need for an additional resistor to prevent cable charge build-up. Addition of these components is shown on the revised Circuit Schematic and Assembly Hole drawing. Change resistor R12 to 1,5K 1/2 watt and capacitor C63 to 0.001.
In-plant effectivity -03 rework immediately

M8650-00002 CODE: D CS: C ETCH: D

DEC-71 - PROBLEM 1: Diagnostic checkout of certain options using this board requires 2400 baud, full duplex operation. Split lugs to do this are not provided.
CORRECTION 1: Add split lug G9, which connects to G1,G3,G5, or G7, and split lug G10, which connects to E13 pin 14 and E5 pin 11.
PROBLEM 2: E32, an MC1488L EIA converter, is operating at maximum ratings.
CORRECTION 2: Delete connection of +15 volt line to E32 pin 14. Add three D664 diodes between +15V and E32 pin 14. Delete connection of -15 volt line to E32 pin 1. Add three D664 diodes between -15V and E32 pin 1.
CORRECTION 3: Corrects errors in the Circuit Schematic for this module.
In-plant effectivity -02 phase-in

M8650-C0003 CODE: F CS: D

MAR-72 - PROBLEM: When a **TRANSMIT IOT 6XX1** is issued, a spike on **TRANSMIT IOT 6XX0** causes the transmit flag to be set erroneously.
CORRECTION: Replace the enabling line, **I/O PAUSE** , with ground on MD bits 9, 10, and 11.
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all M8650's if symptoms are present.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

M8650-D0004 CODE: F CS: E

NOV-72 - PROBLEM: When a transmit IOT 6XX1 is issued, a spike on the transmit IOT 6XX0 causes the TRANSMIT FLAG to be set erroneously. This occurs on systems having ten or more KL8-E's.
CORRECTION: Change the enabling signal on MD bits 9, 10, and 11 from ground to **DEVICE SELECTION** .

NOTE: See continuation supplement FCO M8650-D004A.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8650'S; mandatory in systems with ten or more KL8-E's or KL8-EA thru -EG ' S
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

M8650-D004A CODE: F

DEC-72 - PROBLEM 1: FCO M8650-D0004 neglected to remove a jumper.
CORRECTION 1: Delete jumper between E46 pin 6 and DT1 feed-thru.
PROBLEM 2: Break-in/effectivity confusing.
CORRECTION 2: Delete the words "Retrofit all in-house and field immediately " .
In-plant effectivity -Unchanged
Field effectivity -Unchanged

M8650-C0005 CODE: F CS: B1

DEC-72 - PROBLEM: ECO M8650-00002 calls for a phase-in on etch revision "B " boards. Because of a later "retrofit all " ECO, the phase-in never was implemented. Part of ECO M8650-00002 cures a race condition resulting in checksum errors on long tapes read in from the Teletype or back-to-back loop failures.
CORRECTION: Retrofit etch revision "B " and "C " boards as defined by the FCO. There are at present some etch revision "B " and "C " boards with FCO M8650-C0003 installed, which are labelled CS revision "D ", when in fact they are not CS revision "D ".

NOTE 1: This FCO must be incorporated when filling CS revision "B1 " waivers on Galway shipments.

NOTE 2: Any M8650, etch revision "B ", or "C ", giving checksum errors when reading in long binary tapes must have this FCO, plus ECO's M8650-00001, and M8650-C0003 installed. The result will be a CS revision "B1 " board.

NOTE 3: Rework Instructions: Delete etch at E11 pin 9. Connect E11 pin 9 to E4 pin 6. Delete etch at E7 pin 10, both sides. Connect E7 pin 10 to E4 pin 8. Maintain connection E3 pin 5 to E12 pin 9; this run was broken when etch was cut, both sides, at E7 pin 10.
Quick Check: Three added wires near E4.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8650's when symptoms are present.
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

M8650-YA

Asynchronous Data Control

PROCESSOR TYPE PDP-8/E and DECsystem-10

M8650YA-B0001 CODE: F CS: B
NOV-71 - PROBLEM: If the KL8-EE, -EF , or -EG is used to transmit/receive to or from another KL8-EE, -EF , or -EG or another device controlled by a crystal clock, the receiver loses synchronization with the incoming data stream, causing garbled characters.
CORRECTION: Gradual frequency drift of incoming data stream relative to receiver clock allows logic hazard to occur in receiver shift register if worst-case combination of IC's is present on the board. Ensure that E6/E10 shift register is allowed proper set-up time by reworking module as follows: Cut etch at E11 pin 9. Run jumper E11 pin 9 to E4 pin 6. Cut etch at E7 pin 10. Run jumper E7 pin 10 to E4 pin 8. Add jumper E3 pin 5 to E12 pin 9.
In-plant effectivity -Rework immediately
Field effectivity -Rework all M8650-YA's at customer request
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO Only)

M8650YA-00002 CODE: D CS: C ETCH: D
DEC-71 - PROBLEM 1: Diagnostic checkout of certain options using this board requires 2400 baud full duplex operation. Split lugs to do this are not provided.
CORRECTION 1: Add split lug G9 to connect to G1, G3, G5, and G7 and split lug G10 to connect to E13 pin 14 and E5 pin 11.
PROBLEM 2: E32, an MC 1488L EIA converter, is operating at maximum ratings.
CORRECTION 2: Delete connection of +15 volt line to E32 pin 14. Add three D664 diodes between +15 and E32 pin 14. Delete connection of -15 volt line to E32 pin 1. Add three D664 diodes between -15 and E32 pin 1.
CORRECTION 3: Corrects errors in the Circuit Schematic for this module.

NOTE: FCO M8650YA-B0001 was for retrofit only, but the changes will eventually require relayout of M8650 and M8650-YA.
In-plant effectivity -02 phase-in

M8650YA-00003 CODE: D CS: D
APR-72 - PROBLEM: When a transmit IOT 6XX1 is issued,a spike on the transmit IOT 6XX0 causes the transmit flag to be erroneously set.
CORRECTION: Change the enabling signal, I/O PAUSE , on MD bits 9, 10, and 11 to be ground.
In-plant effectivity -03 rework immediately

M8650YA-D0004 CODE: F CS: E
JUN-73 - PROBLEM: When many boards are used in a system, excessive load is placed on MD bits 9 through 11.
CORRECTION: Change the enabling signal on MD bits 9, 10, and 11 from **GROUND to DEVICE SELECTION** .
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8650-YA'S; mandatory in systems with ten or more KL8-EB through -EG .
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

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M8652

Asynchronous Data Control Module

PROCESSOR TYPE PDP-8/E

M8652-00001 CODE: P CS: B
FEB-72 - CORRECTION: Change Assembly Hole drawing to reflect present Circuit Schematic.
In-plant effectivity -06 documentation change only

M8652-0001A CODE: P
APR-72 - PROBLEM: ECO M8652-00001 has wrong disposition code.
CORRECTION: Change to disposition code 03, rework immediately.
In-plant effectivity -Changed to: 03 rework immediately

M8652-00003 CODE: D CS: C
MAY-72 - PROBLEM: The UART chip specification has changed. It is now ttl compatible.
CORRECTION: Remove the pull-up and pull-down resistors and change connection from -5V to ground.
In-plant effectivity -03 rework immediately

M8652-B0004 CODE: DF CS: D
JUN-72 - PROBLEM: Spikes on IOT's causing **TRANSMIT FLAG** to be erroneously set.
CORRECTION: Change the enabling signal, **I/O PAUSE** , on MD bits 8, 9, 10, and 11 to be ground.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all M8652's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)
MAINDEC 08-DHKLC-B will also be included in the kit.

M8652-00005 CODE: P CS: E
MAR-73 - PROBLEM: There are errors in the Parts List shown on the Circuit Schematic drawing.
CORRECTION: Change Items #24, #26, #27, and #41 as follows: Item #24: Change description from 33K to 3.3K; Item #26: Change description from 3.3K to 33K; Item #27: Change description from 10% tolerance to 5% tolerance; Item #41: Change identification from E22,E26 to E28,E26.
In-plant effectivity -06 documentation change only

M8652-D0006 CODE: F CS: F
APR-73 - CORRECTION: **BREAK IOT** is gated with TP3 to eliminate unwanted interrupts.

NOTE: Retrofit Instructions: Cut etch, E29 pin 10, side 2. Add wire from E28 pin 13 to E24 pin 10.
In-plant effectivity -03 * -All machines shipped in April 1973 must have this FCO.
Field effectivity -Rework all M8652's when symptoms are present.
(Time To Install And Test .3 Hour.) (Kit Contents -FCO/Prints)

M8652-D0007 CODE: F CS: H
MAY-73 - PROBLEM: Retrofit instructions are incorrect in FCO M8652-D0006.
CORRECTION: "Add wire from E28 pin 13 to E24 pin 10 " should read "Add wire from E28 pin 13 to E29 pin 10 " .
In-plant effectivity -06 documentation change
Field effectivity -Correct documentation for FCO M8652-D0006.
(Time To Install And Test N/A) (Kit Contents -FCO/Prints)

M8652-00008 CODE: D CS: J
JUL-73 - PROBLEM: Machine timing can hang in TS3. I/O decoder can glitch, causing **NOT LAST TRANSFER** to be enabled, but no **BUS STROBE** is generated to restart machine timing; a false run condition results.
CORRECTION: Gate NOT LAST TRANSFER flip-flop onto bus with IOT's which generate **BUS STROBE** , 6044 or 6046. The rework procedure is as follows: Cut etch between E31 pin 5 and E31 pin 6; Add wire from E31 pin 5 to feed-thru which is connected to E32 pin 1.
In-plant effectivity -03 * -Rework all M8652's shipped after July 23, 1973.

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E C DEC-O-LOG Engineering Change Order Log

NN01-A

PHA INTERFACE FOR THE FAMILY OF 8

PROCESSOR TYPE FAMILY OF 8

NN01A-00001 CODE: D ML: A WL: A

MAY-71 - PROBLEM: The ND2200 ADC's no longer hold their data bit outputs at a positive 3 volts , thus causing a mismatch without NN01-A interface.
CORRECTION: Add M002 as a pull up for each of the data bits (ADC 00 -ADC 12 .
In-plant effectivity -01 phase-in

NN01A-B0002 CODE: F ML: B WL: B

SEP-71 - PROBLEM 1: The ADC flag and the live time clock flag can both be set at the same time. This is illegal.
CORRECTION 1: Logically and **ADC FLAG [0] H** with **CONV COMP H** . This will keep the ADC from accepting another conversion complete until the previous ADC flag is cleared , thus eliminating a race condition.
PROBLEM 2: DEC does not have an internal live time clock option on the NN01-A option.
CORRECTION 2: Addition of an internal live time clock option consisting of an M401 clock and an M236 binary 12 bit up/down counter. The standard live time clock frequency will be 1000 pulses per minute. (M401 Set To 68.269 KHz)
In-plant effectivity -03 rework immediately
Field effectivity -All NN01-A
(Time To Install And Test 4.0 Hours.) (Documentation $ 5.00 , Parts $ 105.00 , DEC Labor $ 100.00) (Kit Contents -FCO/Prints And Parts)

NN01A-C0003 CODE: F ML: C WL: C

APR-72 - PROBLEM: Conversion complete from ADC generates transfer data , disallowing any program control of A/D conversion.
CORRECTION: Add an M113 module in location A14. Gate **RESET ADC H** with **ENABLE [1] H** .
In-plant effectivity -All future NN01-A
Field effectivity -All NN01-A's with Packard 960 ADC's
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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PA63

16 Channel MUX for Typesetting

PROCESSOR TYPE 8 Family

PA63-00001 CODE: D
DEC-69 - CORRECTION: Changes Silk Screen to conform to PDP-8 family format.
In-plant effectivity -All PA63's.

PA63-00002 CODE: P ML: A
MAR-70 - PROBLEM 1: Aluminum casting is expensive.
CORRECTION 1: Change to plastic bezel.
PROBLEM 2: Delete print E-MD-7406767-0-0 from Unit Assembly drawing, Parts List and Drawing Index.
CORRECTION 2: Add D-SC-1209181 in place of 7406767-0-0. Make
CORRECTIONS: D-IA-7406758-0-0 should read D-IA-7406756 and B-MD-7809816-0-0 should read B-MD-1809819-0-0 .
In-plant effectivity -06 documentation change only.

PA63-00003 CODE: M
APR-70 - PROBLEM 1: "READER DATA BUFFER " and "READER SELECT " wording is missing from the Silk Screen print.
CORRECTION 1: Change second line to include that wording.
PROBLEM 2: Size of screen does not agree with drawing D-AI-7407639 .
CORRECTION 2: Change screen to agree with the drawing.
In-plant effectivity -All PA63's .

PA63-0004 CODE: D ML: B WL: A
JUN-70 - PROBLEM 1: Wire List not up to date.
CORRECTION 1: Generate new Wire List.
PROBLEM 2: Print changes required to agree with Wire List changes.
CORRECTION 2: Update prints.
PROBLEM 3: Filter networks not shown or called-out on Unit Assembly drawing.
CORRECTION 3: Add filter network components on Unit Assembly drawing D-UA-PA63-0-0 and Parts List A-PL-PA63-0-0 .
PROBLEM 4: PUNCH MATRIX print not included in print set.
CORRECTION 4: Assign drawing number to punch matrix, -BS-PA63-0-18 , and add it to the Master Drawing List and Drawing Index.
In-plant effectivity -Retrofit PA63 #1 thru #12 and future.

PA63-00005 CODE: M ML: C
JUL-70 - PROBLEM: Plastic bezel is too flexible.
CORRECTION: Cement indicator panel and plastic bezel together.
In-plant effectivity -Retrofit all PA63's.

PA63-00006 CODE: M
SEP-70 - PROBLEM: Cost reduction by using standard panel.
CORRECTION: Call-out drawing D-MD-7408182-1-0 for item #1, blank panel.
In-plant effectivity -Phase-in

PA63-B0007 CODE: DF ML: D
NOV-70 - PROBLEM 1: Need more current on the -15V line; the H716 supply will not supply it.
CORRECTION 1: Remove -15V from H716 supply and add -15V from 799 supply to the PA63.
PROBLEM 2: Need heavier gauge wire on 30V line connecting racks "C " and "D ".
CORRECTION 2: Add 18 AWG wire from "C " rack to "D " rack.
PROBLEM 3: Orientation of NTTA and 6-8 level switches not shown (S1 and S2 .
CORRECTION 3: Add assembly view of S1 and S2.
PROBLEM 4: Engineering Specifications, Acceptance Criteria not called-out.
CORRECTION 4: Add Engineering Specifications, Acceptance Criteria, and Accessory List to PA63 Master Drawing List and Drawing Index.
PROBLEM 5: Various pieces of hardware not called-out.
CORRECTION 5: Add lockwashers, sleeving, etc where indicated.
PROBLEM 6: M710 module changed to M710-YA.
CORRECTION 6: Make " -YA " changes to all prints.
In-plant effectivity -03 rework immediatedly
Field effectivity -Retrofit all PA63.
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PA63-B0008 CODE: DF ML: E WL: B
DEC-70 - PROBLEM: When the typesetting program is scanning the sixteen reader locations it is possible not to hang up on a flag even when checking readers that are not as yet part of the system.
CORRECTION: Invert the **OUT-OF-TAPE** signal from the reader and invert the output of the **OUT-OF-TAPE** matrix. Also change all **FEEDHOLE [FH]** signal names to **OUT-OF-TAPE [OT]** .
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all PA63.
(Time To Install And Test 2.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PA63-00009 CODE: D ML: F
DEC-70 - PROBLEM 1: The MAINDEC which checks out the NTTA option of the PA63 is not called-out on the Engineering Specification or Acceptance Criteria.
CORRECTION 1: Call-out MAINDEC 08-D27A-D on Engineering Specification and Acceptance Criteria.
PROBLEM 2: Protection bracket has incorrect Silk Screen.
CORRECTION 2: Change the Silk Screen for the protection bracket.
In-plant effectivity -03 rework immediately.

PA63-00010 CODE: M ML: H
DEC-70 - PROBLEM: Sand cast aluminum bezel is too expensive.
CORRECTION: Replace with zinc die cast bezel.
In-plant effectivity -01 phase-in

PA63-A0011 CODE: F ML: J WL: C
MAR-71 - PROBLEM 1: #30 AWG -30V and -15V wiring was inadequate.
CORRECTION 1: Change #30 AWG -30V and -15V to #24 AWG -30V and -15V.
PROBLEM 2: M710 revision "E " was inadequate.
CORRECTION 2: Replace M710 revision "E " with M710 etch revision "F " and CS revision "H " or later. Remove K303.
PROBLEM 3: DEC H716 and D799 power supplies and grounding were inadequate.
CORRECTION 3: Replace power supplies with DEC 778 and DEC H720-C
PROBLEM 4: Reader clock timing too fast.
CORRECTION 4: Slow timing to 2.3 msec.
PROBLEM 5: Check Out and Acceptance Procedures inadequate.
CORRECTION 5: Revise Check Out and Acceptance Procedure.

NOTE 1: See correction supplement FCO PA63-B0012. NOTE 2: This FCO must be installed in conjunction with FCO's BC01F-00001; PR68D-A0015; BC01H-00002; PP67C-A0008 and G930-00002.
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all PA63's.
(Time To Install And Test 3.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PA63-B0012 CODE: F ML: K WL: D
MAY-71 - PROBLEM 1: The new photocell, part #7006267, detects the presence of tape by a level change.
CORRECTION 1: Rewire OUT-OF-TAPE circuitry.
PROBLEM 2: A #30 AWG wire was deleted from B01N2 to C21S1 in FCO PA63-A0011.
CORRECTION 2: Add #24 AWG wire to front panel filter capacitor (B01N2 .
PROBLEM 3: The sixteen 1K resistors and sixteen .01 Ufd capacitors are not needed.
CORRECTION 3: Remove all sixteen 1K resistors and sixteen .01 Ufd capacitors.
PROBLEM 4: The 6/8 level M623 gates are not needed.
CORRECTION 4: Rewire 6/8 level circuitry.
PROBLEM 5: Drawing A-SP-PA63-0-21 was not updated by FCO PA63-A0011.
CORRECTION 5: Update A-SP-PA63-0-21 .
PROBLEM 6: Too much loading on **INITIALIZE L** signal.
CORRECTION 6: Distribute **INITIALIZE L** signal by adding three gates.
PROBLEM 7: C12A1 is floating.
CORRECTION 7: Add +3V to C12A1.

PROBLEM 8: SEL RDR signal name was inadvertently changed to RDR SEL on print D-IC-PA63-0-11 only; the Wire List is not affected.
CORRECTION 8: Change RDR SEL signal name on D-IC-PA63-0-11 only; do not change the Wire List.

NOTE 1: This FCO must be installed in conjunction with FCO PR68D-A0015. NOTE 2: This FCO is applicable, in its entirety, only to PA63's with PR68-D or -DA readers. On PA63's with PR68-B's, only steps 2,3,4,6,7, and 8 are applicable. Before you begin installation of this FCO, you must have FCO PR68D-A0015 and all parts.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all PA63's.
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

BC01H-00002 **ML: L**

PA63-B0013 CODE: F ML: M WL: E
DEC-71 - PROBLEM 1: Possibility of over-driving reader select lines.
CORRECTION 1: Add M623 bus driver to **READER SEL** line, with M002 pull-ups included.
PROBLEM 2: On some typeset programs it is desirable to delay the SELECT IOT (6312 .
CORRECTION 2: Add M302 delay and correct test procedures accordingly.
PROBLEM 3: Possibility of **PUNCH AVAIL** signal floating.
CORRECTION 3: Add M002 as pull-up for **PUNCH AVAIL** lines.
PROBLEM 4: Possibility of **OUT-OF-TAPE** line from readers not floating high enough when the reader is disconnected.
CORRECTION 4: Add M002 pull-up on **OUT-OF-TAPE** .
PROBLEM 5: Wire run "B28D1 to B28F1 " not called-off on Wire List.
CORRECTION 5: Add "B28D1 to B28F2 " as a separate run on the Wire List.
PROBLEM 6: Nomenclature for a gate left off of the punch control print.
CORRECTION 6: Add nomenclature to M623-C14 (location 2-D) on drawing PA63-0-08 .
PROBLEM 7: +5V on R1 of reader cables undesirable.
CORRECTION 7: Remove +5V from D21R1 to D36R1.
CORRECTION 8: Add notes to drawings PTS8-I-0 and PTS8-L-0 .
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all PA63's.
(Time To Install And Test 8.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

PA63-B0014 CODE: F ML: N WL: F
JAN-72 - PROBLEM 1: **SEL RDR 16 [H]** signal cannot drive +3V (B21V1 .
CORRECTION 1: Delete B21V1 from D21V1 and add 1K ohm pull-up resistor to D21V1. PROBLEM 2: B21U1 is used for two different signals per FCO PA63-B0013 ADD/DELETE sheet.
CORRECTION 2: Delete B21U1 to A12U2. Add B22UI to A12U2. Only ADD/DELETE sheets for FCO PA63-B0013 were wrong. Drawings and Wire List show B22U1 connected to A12U2.
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all PA63's
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PA63-00015 CODE: M
MAR-72 - PROBLEM: Drawing D-IA-7407857-0-0 shows hem around opening in zone C-7-6; also shows 45 degree corners (2 places) in zone C-B-7.
CORRECTION: Remove hem from around opening in zone C-7-6. Also remove 45 degree corners in zone C-B-7.
In-plant effectivity -02 phase-in

PA68A-00004
APR-72 - VOID

PA68A-C0005 CODE: P ML: A
NOV-70 - PROBLEM: Because the readers used with PA68A are always selected with power applied, they tend to become heated to a point which may cause reader errors.
CORRECTION: Keep the reader deselected until the tape has been inserted into the reader, thus keeping the reader from becoming heated.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all PA68A's
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only) :::::not In DEC-ECO-LOG title: PC11 . . . ..reader-punch Control processor type: PDP-11
Not previsouly published in DEC-ECO-LOG
ECO's to be published: 1 -5 ready for publication 10/20 ms begin at page 1 FCO PC11-00001
PROBLEM: PC11/PR11 Test Procedure is not included in the print set.
CORRECTION: Add Test Procedure to the PC11 print set.
In-plant effectivity -06 documentation change only.

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ECO DEC-O-LOG Engineering Change Order Log

PA68-F

Typesetting Reader and Punch Control

PROCESSOR TYPE PDP-8 Family

PA68F-00001 CODE: D ML: A WL: A
JUN-69 - PROBLEM 1: Punch and reader control logic has wiring errors.
CORRECTION 1: Wiring corrections to be made on original prints and Wire List.
PROBLEM 2: Drafting print has identification errors.
CORRECTION 2: Identification points are corrected.
In-plant effectivity -Retrofit PA68-F #2 thru #18, and all future.

PA68F-00002 CODE: D ML: B WL: B
JUL-69 - PROBLEM 1: M302 delay was interrupting constant running speed of paper tape punch due to the recovery time of the delay.
CORRECTION 1: Use K303 timer which has a time-out characteristic not inherent to the M302.
PROBLEM 2: Print set has no power wiring diagram drawing.
CORRECTION 2: Generate new print and add to PA68-F print set.
In-plant effectivity -Retrofit PA68-F, #1 thru #31 and future

PA68F-00003 CODE: P ML: C
JUL-69 - PROBLEM: Parts List is not complete.
CORRECTION: Change Parts List to include H716 Power Supply, BC08A-11 Cables and a 779 Power Supply.
In-plant effectivity -06 -Documentation change only

PA68F-00004 CODE: D ML: D WL: C
AUG-69 - PROBLEM 1: Connector blocks are shown mounted on mounting bar in positions 25 thru 32.
CORRECTION 1: There are to be no connector blocks mounted in positions 25 thru 32; this space is reserved for power supply mounting.
CORRECTION 2: Corrects several incorrectly listed signal names on the Block Schematic drawings.
In-plant effectivity -Retrofit PA68-F, #1 thru #3 and future

PA68F-00005 CODE: P ML: E WL: D
SEP-69 - PROBLEM: PA68-F logic is being wired incorrectly.
CORRECTION: Corrects errors in the PA68-F Wire List.
In-plant effectivity -Retrofit PA68-F, #1 thru #6 and future.

PA68F-00006 CODE: D ML: F WL: E
OCT-69 - PROBLEM 1: There are no Engineering Specifications or Acceptance Criteria on the PA68-F Master Drawing List.
CORRECTION 1: Adds Engineering Specifications and Acceptance Criteria to Master Drawing List; also, on Master Drawing List, include this statement, "Do not include Engineering Acceptance Specifications or Acceptance Criteria in customer print set. "
PROBLEM 2: Tape can be read thru reader with pressure foot in the "UP " position, thus causing errors because of tape disengaging the sprocket wheel.
CORRECTION 2: Connects pressure foot switch on reader so when in the "UP " position it will create a "NO TAPE " condition, thus stopping the reader.
CORRECTION 3: Make necessary pin connection correction on the D-BS-PA68-F-1 print.
In-plant effectivity -Retrofit PA68-F, #2 thru #31 and all future

PA68F-00007 CODE: P ML: H
OCT-69 - PROBLEM: Power wiring diagram is incorrect.
CORRECTION: Show -15V going only to B16B2, with no bus.
In-plant effectivity -06 -Documentation change only

PA68F-00008 CODE: P ML: J
DEC-69 - PROBLEM: Module Utilization drawing not correct.
CORRECTION: Correct Module Utilization drawing to agree with Option Designation List.
In-plant effectivity -06 -Documentation change only

PA68F-00009 CODE: P ML: K
FEB-70 - PROBLEM: Documentation for the PA68-F was not complete or precise enough to establish a standard procedure for assembly.
CORRECTION: Update prints so as to accomplish the above.
In-plant effectivity -06 -Documentation change only

MISC-00064 ML: L

PA68F-A0010 CODE: F ML: M WL: F
APR-70 - PROBLEM 1: A 1K, 1/4 watt resistor is required for operation.
CORRECTION 1: Add a 1K, 1/4 watt resistor to the Unit Assembly drawing Parts List, External Component Table, and call out logic print D-BS-PA68-F-2.
PROBLEM 2: G773 module not called out on Module Utilization drawing.
CORRECTION 2: Add G773 to Module Utilization drawing in slot A17, and to the Parts List.
PROBLEM 3: Power wiring print does not show use of G773 module.
CORRECTION 3: Add wires to Wire List for use of G773 module; add G773 to power wiring print.

NOTE: PA68-F, serial #1 thru #17 were modified before shipment.
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Retrofit all PA68-F's, #18 thru #76
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

PA68F-A0011 CODE: F ML: N WL: H
AUG-70 - PROBLEM: An intermittent error is showing up, causing strobing of wrong data.
CORRECTION: Take the strobe from the zero side of the "B " flip-flop instead of the "A " flip-flop in the reader control.
In-plant effectivity -PA68-F, #79 and all future
Field effectivity -Retrofit PA68-F #1 thru #78.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO Only)

PA68F-B0012 CODE: DF ML: P WL: J
DEC-70 - PROBLEM: Because the readers used with the PA68-F are always selected and have power applied, they tend to become heated to a point that may cause reader errors.
CORRECTION: Keep the reader deselected until tape has been inserted in the reader, thus keeping the reader from becoming heated.
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Retrofit PA68-F #3 and #15.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

PA68F-A0013 CODE: F ML: R WL: K
APR-71 - PROBLEM 1: **OUT OF TAPE L** is not brought to ground by the rocker switch on the PR68-DA.
CORRECTION 1: Change out-of-tape logic.
PROBLEM 2: **SYNC PUNCH** signal had no shaping network.
CORRECTION 2: Add R/C network on **SYNC PUNCH** circuit.
CORRECTION 3: Remove K303 module.
CORRECTION 4: Replace M710 with M710 CS revision "F " or later.
CORRECTION 5: Ensure adequate system grounds.

NOTE: This FCO must be installed in conjunction with FCO's BC01H-A0001, BC01F-A0002, PR68D-A0015 and PP67C-A0008.
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Retrofit all PA68-F's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts) Note: An M710, CS revision "F " will only be included in the kit if requested specifically.

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PA68F-B0014 CODE: F ML: S WL: L
MAY-71 - PROBLEM 1: The new photocell, part #70-06267, detects the presence of tape by a level change.
CORRECTION 1: Rewire OUT-OF-TAPE circuitry.
PROBLEM 2: The 1K resistor and the 0.01 mfd capacitor on A16T2 are not needed.
CORRECTION 2: Remove 1K/0.01 R/C network from A16T2.
PROBLEM 3: The G773 power connector sometimes shorts against the punch cable.
CORRECTION 3: Move the G773 from slot A17 to slot A20.

NOTE: This FCO must be installed in conjunction with FCO PR68D-A0015.
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Retrofit all PA68-F's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

PA68F-00015 CODE: P ML: T WL: M
NOV-71 - PROBLEM 1: Signal names to reader motor labeled wrong.
CORRECTION 1: Correct motor signal labels on Master Drawing List, D-BS-PA68-F-1.
CORRECTION 2: Add PA68-F Field Acceptance Criteria to the Master Drawing List.
In-plant effectivity -06 documentation change only

PA68F-D0016 CODE: DF ML: U WL: N
MAR-72 - PROBLEM: **READER RUN** flip-flop will sometimes be set upon power-up. This will cause the **READER FLAG** to be set after a character is read. This makes it impossible to run Power Fail Test, MAINDEC 83-D0KC.
CORRECTION: Remove +3V from the clear input of **READER RUN** and replace it with **INITIALIZE** . Rewire **RDR STROBE L** signal since the two gates on the M115, now being used, are no longer required.
In-plant effectivity -Retrofit immediately
Field effectivity -Retrofit all PA68-F's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

PA68F-EOO17 CODE: F ML: V
AUG-72 - PROBLEM 1: Mismatched names between interface and peripherals; signal names and levels missing.
CORRECTION 1: Signal names corrected.
CORRECTION 2: "B " flip-flop reset side is connected to +3V.

NOTE: Part 1 of this FCO is to clear up an area of confusion, namely descrepancies in signal names between various typesetting interfaces and peripherals. Part 2 is to tie the reset side of a flip-flop to +3V. No trouble is encountered at the present and no field retrofitting of part 2 is required.
In-plant effectivity -06 documentation change only
Field effectivity -Update all PA68-F customer print set.
(Time To Install And Test N/A) (Kit Contents -FCO/Prints)

PA68F-00018 CODE: D ML: W
APR-73 - PROBLEM: External bleeder resistor mounted across the -30 volt supply on Typeset systems dissipates sufficient heat to create a potential personnel hazard.
CORRECTION: Permanently mount the bleeder resistor above R1 so as to avoid the possibility of accidental contact.
In-plant effectivity -03 retrofit immediately

PA68F-E0019 CODE: F ML: Y WL: P
AUG-73 - PROBLEM: PUNCH OUT OF TAPE feature not used on PA68-F.
CORRECTION: Wire in IOT instruction 6311, Skip on Punch Not Available.

NOTE: This FCO must be installed in conjunction with FCO PA68F-E0020 for correct operation of PUNCH OUT OF TAPE . The addition of two resistors, ordered by this FCO, is negated by FCO PA68F-E0020.
In-plant effectivity -Retrofit all production and all future PA68-F's
Field effectivity -Retrofit PA68F's as required
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts None)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -F1068 - FCO/Prints)

PA68F-E0020 CODE: F ML: Z WL: R
OCT-73 - PROBLEM: FCO PA68F-E0019 must be corrected. It incorporates IOT 6311, Skip on Punch Not Available, but the **NOT AVAIL H** signal will not be high if the punch is unplugged from the logic. Punch cables longer than 50 feet can have sufficient drop so that when **NOT AVAIL H** is low, it will be 300 to 500 mv above ground.
CORRECTION: Remove the 220 ohm and 330 ohm resistor network added by FCO PA68F-E0019 and connect the **NOT AVAIL H** signal to an M501 Schmitt Trigger module, added in slot A15, with an unused clamp load for a pull-up.

NOTE: This FCO must be installed in conjunction with FCO PA68F-E0019 for correct operation of PUNCH OUT OF TAPE .
In-plant effectivity -Retrofit all production PA68-F's.
Field effectivity -Retrofit PA68-F's as required
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $ 25.00)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -F1069 - FCO/Prints And Parts)

PA68F-00015 CODE: P ML: T WL: M
NOV-71 - PROBLEM: Signal names to reader motor labeled wrong.
CORRECTION 1: Correct motor signal labels on Master Drawing List, D-BS-PA68-F-1 .
CORRECTION 2: Add PA68-F Field Acceptance Criteria to the Master Drawing List.
In-plant effectivity -06 documentation change only

PA68F-D0016 CODE: DF ML: U WL: N
MAR-72 - PROBLEM: **READER RUN** flip-flop will sometimes be set upon power-up. This will cause the **READER FLAG** to be set after a character is read. This makes it impossible to run Power Fail Test, MAINDEC 8E-D0KC.
CORRECTION: Remove +3V from the clear input of **READER RUN** and replace it with **INITIALIZE** . Rewire **RDR STROBE L** signal since the two gates on the M115 now being used are no longer required
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all PA68-F's
(Time To Install And Test -1.0 Hour) (This FCO Is No Charge To Customer) kits contents -FCO/Prints

PA68F-00017 CODE: F ML: V
AUG-72 - PROBLEM 1: Mismatched names between interface and peripherals; signal names and levels missing.
CORRECTION 1: Signal names corrected.
PROBLEM 2: "B " flip-flop reset side not tied to +3V.
CORRECTION 2: Tie off "B " flip-flop reset side to +3V.

NOTE: Part 1 of this FCO is to clear up an area of confusion, namely discrepancies in signal names between various typesetting interfaces and peripherals. Part 2 is to tie the reset side of a flip-flop to +3V. No trouble is being encountered at the present and no field retrofitting is required.
In-plant effectivity -06 documentation change only.
Field effectivity -Update all PA68-F customer print sets.
(Time To Install And Test N/A) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

PDP-8/M

Processor

PROCESSOR TYPE PDP-8/M

PDP8M-00001 CODE: P
AUG-71 - PROBLEM: No cabinet logo for the PDP-8/M.
CORRECTION: Add PDP-8/M variation to the #74-07936 logo drawing.
In-plant effectivity -Documentation/design change

PDP8M-00002 CODE: M
NOV-71 - CORRECTION: Adds extra holes in chassis slide so it will fit on PDP-8/M.

NOTE: See correction supplement ECO PDP8M-00004.
In-plant effectivity -06 documentation phase-in

PDP8M-00003 CODE: P
NOV-71 - PROBLEM 1: Wrong color panel logo for PDP-8/M.
CORRECTION 1: Change colors.
PROBLEM 2: No blank panel logo for PDP-8/M.
CORRECTION 2: Add blank panel logo.
In-plant effectivity -06 documentation phase-in

PDP8M-00004 CODE: M
NOV-71 - PROBLEM: ECO PDP8M-00002 called out wrong rework code for the #74-08861 chassis slides.
CORRECTION: Change rework code to 03, rework immediately.

NOTE: This is a supplement to ECO PDP8M-00002.
In-plant effectivity -03 rework immediately

PDP8M-00005 CODE: P
DEC-71 - CORRECTION: Correction to number shown on the Micro Switch Harness print C-IA-7008674-0-0 .
In-plant effectivity -06 documentation change only

PDP8M-00006 CODE: P
DEC-71 - CORRECTION: Add reference dimension missing from the #74-08861 track drawing.
In-plant effectivity -06 documentation change only

PDP8M-00007 CODE: P DD: A
FEB-72 - PROBLEM 1: The PDP-8/M Drawing Directory was created before DEC Standard 024 was released and does not conform to this Standard.
CORRECTION 1: Update the Drawing Directory in accordance with DEC Standard 024.
PROBLEM 2: No PDP-8/M Accessory List in print set.
CORRECTION 2: Include the Accessory List A-AL-PDP8M-0-6 in the print set.
In-plant effectivity -Documentation change only

PDP8M-00008 CODE: P
FEB-72 - PROBLEM: PDP-8/M fans noisy and expensive.
CORRECTION: Replace with DEC #12-05033.
In-plant effectivity -06 documentation phase-in

PDP8M-00009 CODE: M
FEB-72 - PROBLEM 1: PDP-8/M Power Supply chassis #74-09376: Transformer mounting holes too small and wrong inserts called out.
CORRECTION 1: Increase transformer mounting hole size and call out current inserts.
PROBLEM 2: PDP-8/M chassis #74-09379: Lip around top too wide and some tolerances are too tight.
CORRECTION 2: Reduce lip dimension and correct tolerances.
PROBLEM 3: PDP-8/M cover #64-09380: Tolerance too tight.
CORRECTION 3: Correct tolerance.
PROBLEM 4: PDP-8/M cover #74-09380: Tolerance too tight.
CORRECTION 4: Increase opening size from 2.00 to 2.25.
In-plant effectivity -02 phase in

PDP8M-00010 CODE: D
MAR-72 - CORRECTION: Make necessary changes to several prints.
In-plant effectivity -06 documentation change only

PDP8M-B0011 CODE: F
MAR-72 - PROBLEM: AC noise causing problems with power fail.
CORRECTION: Place a 0.02 ufd capacitor, #10-10767, across each fan.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all PDP-8M's shipped in January and February 1972.
(Time To Install And Test 1.0 Hour.) (Kit Contents --FCO/Prints And Parts)

PDP8M-00012 CODE: M
MAY-72 - PROBLEM 1: Fabrication problem in punching obround slots on PDP-8/M chassis
CORRECTION 1: Make corrections as defined in the revised IA , Inseparable Assembly drawing..
PROBLEM 2: Support bracket shows up behind silk screened panel.
CORRECTION 2: Change finish specifications to black paint, 9200260-94.
In-plant effectivity -02 phase-in

PDP8M-D0013 CODE: F DD: B
JUL-72 - PROBLEM 1: Documentation errors in the PDP-8/M print set.
CORRECTION 1: Make corrections to the documentation.
PROBLEM 2: Switch bounce on the AC power switch affects machines with the Power Fail option causing memory locations to be modified.
CORRECTION 2: Add a capacitor (2X.02P.1KV) across the switch.
In-plant effectivity -Rework immediately
Field effectivity -All PDP-8/M with a Power Fail option
(Time To Install And Test 1.3 Hours.) (Kit Contents -FCO/Prints And Parts)

PDP8M-B0014 CODE: F DD: C
SEP-72 - PROBLEM: Potential shock hazard. Lack of ground continuity between power supply and PDP-8/M chassis when power supply is removed from chassis.
CORRECTION: Add a fifteen inch length of #18 AWG black stranded Teflon insulated wire from solder lug on right rear screw of power supply transformer to grounding lug on chassis by power input box.

NOTE: See correction supplement FCO PDP8M-B014A.
In-plant effectivity -Retrofit no later than 10/2/72.
Field effectivity -Retrofit all 7008714 power supplies in PDP-16/M, PDP-8/M and PDP-8/F on a "next service call " basis.
(Time To Install And Test .2 Hour.) (Kit Contents -FCO/Prints And Parts) Supplement FCO PDP8M-B014A will also be included in the kit.

PDP8M-B014A CODE: F
OCT-72 - PROBLEM: FCO PDP8M-B0014 calls out #18 AWG black stranded Teflon insulated wire. Digital does not use black wire or Teflon insulation for a chassis ground.
CORRECTION: Remove the word Teflon from FCO PDP8M-B0014 and change part description on print to green instead of black.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

PDP8M-00015 CODE: M DD: D
NOV-72 - PROBLEM 1: Kep nuts coming loose on fans.
CORRECTION 1: Replace with new mounting hardware.
PROBLEM 2: Lockwashers not necessary for top cover mounting.
CORRECTION 2: Delete lockwashers.
CORRECTION 3: Correct print error.

NOTE: See correction supplement ECO PDP8M-0015A.
In-plant effectivity -02 phase-in; all units shipped after December 4, 1972.

PDP8M-0015A CODE: M
NOV-72 - PROBLEM: ECO PDP8M-00015 has incorrect wording for BREAK-IN EFFECTIVITY .
CORRECTION: Change BREAK-IN EFFECTIVITY to read "issued " instead of "shipped " .
In-plant effectivity -Unchanged

PDP8M-00016 CODE: M DD: E
JAN-73 - PROBLEM 1: It is difficult to align the key switch with the front panel.
CORRECTION 1: Design a new key switch bracket and support bracket that will allow adjustment in both vertical and horizontal planes.
CORRECTION 2: Change quantity of screws on Parts List.
In-plant effectivity -02 phase-in; all kits issued after March 5, 1973 and all machines shipped after April 2, 1973.

PDP8M-00017 CODE: D DD: F
FEB-73 - PROBLEM: Power supply is not easily accessible; assembly time is too long.
CORRECTION: Repackage PDP-8/M by adding variations PDP8M-DH, PDP8M-DJ, PDP8M-DK, PDP8M-DL, PDP8M-MH, PDP8M-MJ, PDP8M-MK and PDP8M-ML.
In-plant effectivity -* -All units shipped after July 1, 1973 must be the new variations.

PDP8M-00018 CODE: M DD: H
MAY-73 - CORRECTION 1: Update Drawing Directory, Unit Assembly drawing and Parts List; add Assembly Procedures.
PROBLEM 2: Grommet on power supply chassis difficult to install.
CORRECTION 2: Replace grommet with one that will fit in round hole.
PROBLEM 3: A gap exists between the cover and the bezel.
CORRECTION 3: Increase length of cover by 0.06 inch.
In-plant effectivity -All parts fabricated after 5/4/73 and all machines shipped after 10/1/73 to include these changes.

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E C DEC-O-LOG Engineering Change Order Log

PP67-A

PAPER TAPE PUNCH, TYPESETTING

PROCESSOR TYPE PDP-8 FAMILY

PP67A-B0001 **CODE: F**

FEBRUARY-74 – PROBLEM: The PP67-A and -B, PP67-C and -D, and PR68-D and -DA all have the same size Amphenol connector, but the voltages are different. If a cable for one is plugged into another, shorting occurs.

CORRECTION: Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.

In-plant effectivity -- none

Field effectivity – retrofit PP67-A's used in systems with PR68-D, -DA, -E, PP67-B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.

(Time To Install And Test .2 Hour) (Kit Contents – NF1185 – FCO/Prints)

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EC DEC-O-LOG Engineering Change Order Log

PP67-C

Typesetting
Paper Tape Punch,
6-Level

PROCESSOR TYPE 8 Family

PP67C-00001 CODE: D
JUL-69 - PROBLEM 1: Difficulty in setting stop on wafer switch.
CORRECTION 1: Draw top view of switch for easier stop ring setting.
PROBLEM 2: Confusion in wiring the switch due to inadequate Wire Table.
CORRECTION 2: Additions and corrections to Wire Table.
In-plant effectivity -Rework all PP67-C.

PP67C-00002 CODE: M
JUL-69 - PROBLEM: Punch control mounting bracket could not be assembled due to a missing hole and inadequately dimensioned holes
CORRECTION: Add necessary hole and dimension properly.
In-plant effectivity -Rework all PP67-C

PP67C-00003 CODE: P ML: A
JUL-69 - PROBLEM: Unit would not work due to inadequate Wire Table.
CORRECTION: Made additions and deletions to Wire Table.
In-plant effectivity -All PP67-C's

PP67C-00004 CODE: P
JAN-70 - PROBLEM: To update PP67-C print set to include variations of the standard device and to eliminate parts on the Unit Assembly Parts List not used in assembly.
CORRECTION: Add variation column to Unit Assembly Parts List.
In-plant effectivity -06 documentation change only

PP67C-B0005 CODE: F ML: B
APR-70 - PROBLEM: The purpose of the upper half of S1 (j,k,l,m,p) is to simulate an out-of-tape condition in positions 2,3,4 and to provide a "RUN " condition in position 1. Thus, positions 2,3,4 should go to +5 volts, not ground. Also, the out-of-tape switch should only go to position 1; J1-21, which carries the simulated condition back to the PA63 logic, should be connected to the wiper of the switch (S1-P . J1-17 is a ground coming into J1 and should not be connected to +30 volts, whereas J1-10 is a 30 volt line coming in and should be shown connected to the other 30 volt lines.
CORRECTION: Redraw D-CS-PP67-C-1 as shown, deleting the wire from G915-H, the wire from G915-E to J1-13 is deleted and rerun G915-E to G915-F. On D-UA-PP67-C-0 , J1-21 goes to S1-P; add two notes, one showing proper bussing of 30 volt line of J1 and the other showing the correct wiring of the out-of-tape switch. Remove the sketch of J1, it is confusing and not necessary. On D-AD-7006385-0-0 , S1-K now goes to CONNI-A (÷ 5 volts) and S1-C is grounded directly now and not thru S1 k-l-m. Delete connection of CONNI-H , it is no longer used.

NOTE: This FCO creates PP67-C Circuit Schematic revision "A " .
In-plant effectivity -Rework PP67-C #164 and all future.
Field effectivity -Retrofit PP67-C #101 thru #163.
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PP67C-00006 CODE: M
APR-70 - PROBLEM: Drawing D-MD-7407364-0 is incorrect for manufacture of the mounting bracket. Print requires new dimensions and all revision "A " pieces in stock or kits must be reworked.
CORRECTION: Change the drawing and rework all pieces.
In-plant effectivity -Rework

PP67C-00007 CODE: P ML: C
NOV-70 - PROBLEM: Cable layout and punch control schematic not called-out. There has been no Accessory List made up.
CORRECTION: Generate Accessory List A-AL-PP67-C-3 . List the cable drawing and G915 Circuit Schematic on the PP67-C Accessory List.
In-plant effectivity -06 documentation change only

PP67C-A0008 CODE: F ML: D
APR-71 - PROBLEM 1: Damping diodes were not called out on prints.
CORRECTION 1: Specify damping diodes per D-CS-PP67-C-1 .
PROBLEM 2: No Set Up, Adjustment, or Acceptance Procedure was available.
CORRECTION 2: Add procedures to Master Drawing List (not field retroactive .
PROBLEM 3: When punch "N " is put in CONTINUOUS MODE , it will punch data when another punch is selected.
CORRECTION 3: Delete wire from G915 pin F to pin E and add wire from pin E to tab A on wiper per D-CS-PP67-C-1 .
PROBLEM 4: No pertinent Circuit Schematics are sent with customer prints.
CORRECTION 4: Made ADDITIONAL CUSTOMER PRINTS sheet 2 of Master Drawing List.
CORRECTION 5: Incorporate new Acceptance Procedures (not field retroactive .
CORRECTION 6: Add resistor (ik ohms) from G915 pin E to +5 VDC on connector block per drawing D-CS PP67-C-1 .

NOTE: This ECO creates PP67-C Circuit Schematic revision "B ".
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all PP67-C's
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

PP67C-00009 CODE: P ML: E
FEB-72 - PROBLEM 1: There are no Checkout Procedures for use on the PA611-P Controller.
CORRECTION 1: Add new Checkout Procedure to Master Drawing List.
PROBLEM 2: SCR position is not specified. Anode could possibly be positioned to short against the low-tape arm.
CORRECTION 2: Specify SCR position.
PROBLEM 3: Acceptance Procedure can't be used on PA611.
CORRECTION 3: Change Acceptance Procedure.
PROBLEM 4: Listing of additional customer prints not up T0 date.
CORRECTION 4: Update additional listing of customer prints.
In-plant effectivity -06 documentation change only

PP67C-00010 CODE: P
MAR-72 - PROBLEM: Drawing shows the assembly of two part numbers to be one part. This cannot be done unless part number C-MD-7407346-0-0 becomes an assembly drawing number, or item #2, which is C-MD-7405198-0-0 is disregarded as #7405198 and changed to just a fabricated part as item #2.
CORRECTION: Change title to "Bracket Mounting Assembly " (Punch Control . Leave part number as D-MD-7407346-0-0 and erase item #2 part number. Change quantity of pop rivets from one to three.
In-plant effectivity -06 documentation change

PP67C-00011 CODE: P ML: F
AUG-72 - CORRECTION 1: Signal names revised and corrected.
PROBLEM 2: Acceptance Criteria does not make use of latest diagnostics and test procedures.
CORRECTION 2: New Acceptance Criteria incorporated.

NOTE: This ECO creates PP67-C Circuit Schematic revision "C ".
In-plant effectivity -06 documentation change only

PP67C-B0012 CODE: F ML: H

JANUARY-74 – PROBLEM: The PP67-A and -B, PP67-C and -D, and PR68-D and -DA all have the same size Amphenol connector, but the voltages are different. If a cable for one is plugged into another, shorting occurs.

CORRECTION: Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.

In-plant effectivity – none

Field effectivity – retrofit all PP67-C's in systems with PR68-D, -DA, -E, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.

(Time To Install And Test .2 Hour) (Kit Contents – NF1181 - FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

PR68-A

TYPESETTING
PAPER TAPE READER

PROCESSOR TYPE PDP-8 FAMILY

PR68A-00001 CODE: D ML: E
JAN-69 - PROBLEM: Hole in rear screen assembly is in wrong place, causing cable strain.
CORRECTION: Relocate hole.
In-plant effectivity -Phase-in

PR68A-00002 CODE: D
MAY-69 - PROBLEM: Hole size and location must be changed to prevent wires from scraping.
CORRECTION: Change hole size and location accordingly.
In-plant effectivity -Phase-in

PR68A-00003 CODE: M
OCT-69 - CORRECTION: Change tape spring slot size from 1/8 inch wide by one quarter inch long to 5/32 inch wide by one quarter inch long.
In-plant effectivity -Phase-in

PR68A-00004 CODE: D
SEP-70 - PROBLEM: The cable type used on the reader and punch is no longer available.
CORRECTION: Change to Belden cable #91-07684; wiring color codes are changed accordingly.
In-plant effectivity -Phase-in

PR68A-00005 CODE: M
OCT-70 - PROBLEM: Wrong type of material being machined for reader head. Phenolic material consists of cotton cloth, grade "C " or "ce ", and when holes are drilled for photocell apertures, shredding causes a rough hole.
CORRECTION: Change to better grade of phenolic. Use linen base material, phenolic NEMA grade "le " .
In-plant effectivity -Phase-in immediately

PR68A-00006 CODE: D
NOV-70 - PROBLEM: Cable not properly called out on drawing. Also, some parts are not labeled. Some new parts must be added.
CORRECTION: Redraw G773 Cable Connector Card. Add Notes 1, 7, and 8 to help in assembling cable. Note 8 is to call out a separate wire assembly to go from G773 to power terminal.
In-plant effectivity -Phase-in

PR68A-00007
DEC-70 - DOCUMENTATION for this in-plant ECO has been deleted from the microfilm files.

PR68A-00008 CODE: M
JAN-71 - PROBLEM 1: Tape Spring material is too thin.
CORRECTION 1: Change #74-04984 Tape Spring material from 266A, .019 Inch to 226A, .0299 Inch thick.
PROBLEM 2: Not enough center lines for "H " holes in Bottom Reader Plate causes manufacturing difficulties.
CORRECTION 2: Add center lines for "H " holes.
In-plant effectivity -Phase-in

PR68A-00009 CODE: D
MAY-71 - PROBLEM: Dimension called out for length of lens not adequate for PR68-A, PR68-B, PR68-D and PR68-DA.
CORRECTION: Add variation box and make changes to prints as required.
In-plant effectivity -Documentation change only

PR68A-00010 CODE: M
JAN-73 - CORRECTION: Changes an incorrect hole diameter in the reader head.
In-plant effectivity -Phase-in

PR68A-B0011 CODE: F ML: F
NOV-73 - PROBLEM 1: Solar cell assembly unreliable.
CORRECTION 1: Replace solar cell assembly #29-20672-0 with tape guide assembly #70-09382-0.
PROBLEM 2: Noise on data lines of reader cable.
CORRECTION 2: Add filtering to #70-05063 reader cable.

NOTE: A complete print set, including the assembly and adjustment procedure for the new tape guide, is included in the parts kit for this FCO.
In-plant effectivity -Retrofit immediately
Field effectivity -Retrofit all PR68-A's, as required, at next PM or service call.
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $ 50.24)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -PF1097 - FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

PR68-B

Typesetting
Paper Tape Reader

PROCESSOR TYPE 8 Family

PR68B-B0006 CODE: F ML: F

JAN-71 - PROBLEM 1: Pin B01V2 of the PR68-B is a ground that, when plugged into the PA63, causes shorts on the +5V line when the NTTA switch is put into its "OFF " position.

CORRECTION 1: Swap wire from B01V2 to B01T1. Run #30 AWG wire to B01C2 from B01T1.

PROBLEM 2: The reader on/off switch puts a ground directly to the outputs of gates (an M161 in the PA63 and an M115 in the PA68-F) which could shorten the life of those particular gates.

CORRECTION 2: Put on/off switch in the **FEEDHOLE** line. Position 1 would let the reader run, position 2 would send a positive potential back to the controls, stopping the reader.

In-plant effectivity -03 rework immediately

Field effectivity -Retrofit all PR68-B's on the following systems: PDP-8/I's #2798 and #2805, PDP-8/L's #3149, #3207, and #3300.

(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

PR68D-00017 CODE: D ML: J WL: C
MARCH-72 – CORRECTION 1: Correct Engineering Specifications and Manufacturing Test Procedures.
CORRECTION 2: Correct motor signal names.
PROBLEM 3: Front cover plate does not fit properly.
CORRECTION 3: Correct dimensions on front cover.
CORRECTION 4: Change color of switch handle.
PROBLEM 5: Wrong color wire called out
CORRECTION 5: Change color of wire.

NOTE: This ECO creates PR68-DA ML revision "H"
In-plant effectivity – 02 phase-in

PR68D-00018 CODE: P ML: K
AUGUST-72 – CORRECTION: Signal names revised and corrected because of missing names, wrong names, and different names between peripheral and interfaces.

NOTE: This ECO creates PR68-DA ML revision "J".
In-plant effectivity – 06 documentation change only

PR68D-00019 CODE: D ML: L
APRIL-73 – PROBLEM: There is a possibility that either a faulty G930 module or a miswired BC01H cable can feed –15V through the RDR SELECT line and blow modules in the PA63. Some BC01H cables were manufactured with the 1 MFD capacitor connected to P1, –15V, rather than T1, ground; this puts a –15V spike on the select lines.
CORRECTION: Install a D664 diode from B04J2 to B04T1 on the PR68-D backplane with the cathode on B04J2.

NOTE: This ECO creates PR68-DA ML revision "K".
In-plant effectivity – 03 retrofit immediately

PR68D-00020 CODE: P ML: M
JULY-73 – PROBLEM: Front cover plate print calls out Item #5 as #90-08894-1, tape, 1/8 inch wide, double adhesive. This item is put on in the actual assembly, not in fabrication assembly.
CORRECTION: Delete Item #5 and Note #3 from the cover plate print and add it to the Unit Assembly drawing.
In-plant effectivity – documentation change

PR68D-00021 CODE: P ML: N
JANUARY-74 – CORRECTION: Add packaging instructions and purchase specifications to Parts List, Unit Assembly, and Drawing Index.
In-plant effectivity – documentation change only

PR68D-B0022 CODE: F ML: P
FEBRUARY-74 – PROBLEM: The PP67-A and -B, PP67-C and -D, and PR68-D and -DA all have the same size Amphenol connector, but the voltages are different. If a cable for one is plugged into another, shorting occurs.
CORRECTION: Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.
In-plant effectivity – none
Field effectivity – retrofit PR68-D's used in systems with PR68-E, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.
(Time To Install And Test .2 Hour) (Kit Contents – NF1187 – FCO/Prints)

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E C DEC-O-LOG Engineering Change Order Log

PR68-E

PAPER TAPE READER, TYPESETTING

PROCESSOR TYPE PDP-8 FAMILY

PR68E-00001 CODE: P ML: A
APR-72 - PROBLEM: Drawing directory, customer listing and drawings specified to be pulled do not agree.
CORRECTION: Adds and deletes drawings to customer list and removes redundant listing in index portion of Drawing Directory.
In-plant effectivity -Documentation change only

PR68E-E0002 CODE: F ML: B
AUG-72 - PROBLEM 1: Signals have missing names, erroneous names and different names between reader and controller.
CORRECTION 1: Signal names revised and corrected.
PROBLEM 2: Acceptance procedures refer to PA63 controller which is no longer applicable, and do not have the latest diagnostics and test procedures incorporated.
CORRECTION 2: New acceptance procedures written.
In-plant effectivity -06 documentation change only
Field effectivity -Update customer print set.
(This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

PR68E-B0003 CODE: F DD: C
FEBRUARY-74 – PROBLEM: The PP67-A and -B, PP67-C and -D, and PR68-D and -DA all have the same size Amphenol connector, but the voltages are different. If a cable for one is plugged into another, shorting occurs.
CORRECTION: Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED – PR68-D and -E and the BC01H cable; ORANGE – PP67-C and -D and the BC01F cable; GREEN – PP67-A and -B and the #70-05062 cable.
In-plant effectivity – none
Field effectivity -- retrofit PR68-E's used in systems with PR68-D, -DA, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.
(Time To Install And Test .2 Hour.) (Kit Contents – NF1184 -- FCO/Prints)

RF08-00023 CODE: D
MAR-71 - PROBLEM 1: Customer operation requires a device code change and a CURRENT ADDRESS/WORD COUNT change.
CORRECTION 1: Clip W103 diodes for device code change and wire in the new WORD COUNT/CURRENT ADDRESS .
PROBLEM 2: Customer operation requires RF08 to work in connection with special RS08 SELECTION INHIBIT logic.
CORRECTION 2: Provide cable connection for the RS08 SELECTION INHIBIT logic.
In-plant effectivity -Retrofit RF08 #5024 only.

RF08-B0024 CODE: F ML: V WL: M
MAR-71 - PROBLEM: On multi-disk units: If a disk is deselected between MINUS TC and PLUS TC , **WDE** will be set just before deselection. If the new disk is selected during the timing gap, there is no pulse to clear **WDE** , thus causing **SAD** to remain set which does not allow **ABC** to set which allows **ADC** to set for address "0 " instead of the proper address, causing data to be written in address "0 " rather than the proper address. May cause system crashes; ESP , TSS-8 and CLINI LAB PDP-12

CORRECTION: Clear **WDE** with the end of **PCA** to simulate the missing pulse.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RF08's on multi-disk systems.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

RF08-E0025 CODE: F
JUN-71 - PROBLEM: After a **DRL** is generated, usually caused by **EAE** , the disk must be re-initialized. This FCO will allow hardware to handle any **DRL** and complete the entire transfer.
CORRECTION: When a possible **DRL** is sensed, zero **DRE** and one-set **MRS** , allowing the processor 33 msec to accept data from or to the disk.

NOTE 1: Before implementation of this FCO, the RF08 should have all ECO's up to and including RF08-A0022.

NOTE 2: Implementation of the FCO to an RF08 in the field will convert it to an RF08-M.

NOTE 3: Installation kits are available only to DEC Field Service personnel. No customer kits will be supplied. Total installation charge including parts and on-site labor is $ 800.00.
In-plant effectivity -None
Field effectivity -Retrofit all RF08's as required
(Time To Install And Test 12.0 Hours.) (Kit Contents -FCO/Prints And Parts)

RF08-00026 CODE: P ML: W
JUN-71 - PROBLEM: Existing External Component List, drawing A-CP-RF08-0-15, is out of date on the RF08.
CORRECTION: Revise External Component List and associated Block Schematic.
In-plant effectivity -06 documentation change only.

RF08-00027 CODE: M
SEP-71 - PROBLEM: Indicator assembly E-AD-7005741-0-0 will not close when assembled to cabinet. Screw head interferes with bezel and glass support, requiring considerable filing by hand.
CORRECTION: Change 29/32 inch dimension to 31/32 inch on drawing D-IA-7407021-0-0 .
In-plant effectivity -02 phase-in

RF08-A0028 CODE: F ML: Y
OCT-71 - PROBLEM: Race condition exists between IOP pulses and strobe when RF08 is used with PDP-8/E. Pulse amplifier on W103 depends upon line delays to generate a concurrent signal.
CORRECTION: Modify pulse amplifier on W103 to standard amplifier. W103 to be replaced with W123 when available.
In-plant effectivity -All RF08's beginning 10-25-71
Field effectivity -Retrofit all RF08's on PDP-8/E's
(Time To Install And Test 1 Hour) (Documentation $ 5.00 Parts $ 52.00 DEC Labor $ 25.00) (Kit Contents -FCO's And Parts)

RF08-A0029 CODE: F
OCT-71 - PROBLEM: Slow computer cycle times may cause the DRL flag to set when the CP is doing certain instructions during a disk transfer. PDP-12 computers are marginal when doing a SET instruction. PDP-8/L computers are marginal when a processor IOT is followed by an IOT instruction.
CORRECTION: The DRL is currently being set at approximately 2.2 usec before the next word from the disk actually destroys the last word. Words are assembled approximately every 16 msec. Change the control logic on a read so that the DRL is set when the CP has failed to finish a break cycle and is jamming the next word (to mbh) on top of the one that had requested the break. This gives the CP about 2.2 usec more time to answer a break request.
In-plant effectivity -03 rework
Field effectivity -Retrofit all RF08's
(Time To Install And Test 2 Hours) (Documentation $ 5.00 Parts None DEC Labor $ 25.00) (Kit Contents -FCO Only)

RF08-00030 CODE: M
NOV-71 - PROBLEM: When machined according to print, cutter breaks through front of bezel casting. Experience shows 40% to 70% scrap because of this.
CORRECTION: Change dimensions to remove less stock when machining.
In-plant effectivity -01 phase-in

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DEC-O-LOG Engineering Change Order Log

RKO1-X

Interface for RK01 Disks

PROCESSOR TYPE PDP-8 Family

RK01X-00001 CODE: D ML: B WL: A
JUL-70 - PROBLEM 1: Error in Wire List connects pulse from E11U2 to +3V, 108, H .
CORRECTION 1: Correct Wire List.
PROBLEM 2: 200 usec track seek delay too wide.
CORRECTION 2: Change to 50 usec.
PROBLEM 3: M211's missing from Module Utilization drawing.
CORRECTION 3: Add two M211's to the Module Utilization drawing and add part numbers for M405 parts to the Parts List.
In-plant effectivity -All RK01-X's

RK01X-B0002 CODE: F ML: D WL: B
SEP-70 - PROBLEM 1: Wire List errors leave points unclamped.
CORRECTION 1: Wire in points to be clamped to correct clamp load.
PROBLEM 2: No notation on M206 jumpers.
CORRECTION 2: Add note to Module Utilization drawing and Parts List about M206 jumpers.
PROBLEM 3: No signal index.
CORRECTION 3: Add signal index to print set.
PROBLEM 4: Print error in Track Address Register and basic format.
CORRECTION 4: Correct gate and basic format print.
PROBLEM 5: **DISK NOT READY** levels float with no disk present. This causes **DISK READY** condition on nonexistent driver.
CORRECTION 5: Clamp **DISK NOT READY** levels.

NOTE: This FCO creates RK01 ML revision "E ".
In-plant effectivity -RK01-X #115 and all future
Field effectivity -Retrofit RK01-X's #100 thru #114.
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)

RK01X-A0003 CODE: F ML: E WL: C
SEP-71 - PROBLEM: TIME-OUT ERROR COUNTER is wired incorrectly and does not agree with print D-BS-RK01-X-02.
CORRECTION: Change Wire List to agree with print. The ADD/DELETE sheet released with this FCO is in error; it is replaced by a new sheet released with FCO RK01X-A003A. The ADD/DELETE information, included in the synopsis of 03A which follows, is complete and is correct.

NOTE: See correction supplement FCO RK01X-A003A.
In-plant effectivity -03 -Retrofit immediately
Field effectivity -Retrofit all RK01-X's
(Time To Install And Test 2.0 Hours) (Documentation $ 5.00 , Parts None ,) The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.. (Kit Contents -FCO Only) Supplement RK01X-A003A will also be included in the kit.

RK01X-0003A CODE: F
JAN-73 - PROBLEM: RK01X-00003 ADD/DELETE sheet is in error.
CORRECTION: Use new ADD/DELETE information as follows: Signal E01M1, DELETE F10S1 to E01M1. Signal F10S1, ADD F10S1 to E01L1.

NOTE: The run now named E01M1 was originally named F10S1 ; it was renamed as a result of the deletion of pin F10S1 from the run.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

RK01X-A0004 CODE: F ML: F WL: D
OCT-71 - PROBLEM: FCO RK01X-A0003 which changed the Wire List is in error.
CORRECTION: Ignore the DELETE **E01M1 TO E01L2** and the ADD **E01L2 TO E01L1** , only do the DELETE **F10S1 TO E01M1** and the ADD **E01L1 TO F10S1** .
In-plant effectivity -Retrofit all RK01-X's
Field effectivity -Retrofit all RK01-X's
(Time To Install And Test 2.0 Hours.) (Documentation $ 5.00 , Parts None)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents --FCO Only)

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MAYNARD, MASSACHUSETTS

EC DEC-O-LOG Engineering Change Order Log

RK01

CMD Disk Drive

PROCESSOR TYPE PDP-8

RK01-00001 CODE: M ML: A
MAY-70 - PROBLEM: Front of disk needs improved appearance.
CORRECTION: Design new front for disk.
In-plant effectivity -03 rework immediately

RK01-00002 CODE: M
JUN-70 - PROBLEM: Incorrect welding location in detail -"C " .
CORRECTION: Correct location of weld.
In-plant effectivity -Rework immediately

RK01-00003 CODE: D ML: B
JUL-70 - CORRECTION 1: Make print corrections
PROBLEM 2: Power-off or power failure while disk is reading destroys data or format.
CORRECTION 2: Change power supply for disk drive to cause power-off sequence when power fails.
In-plant effectivity -All RKO1's

RK01-00004 CODE: P ML: C
AUG-70 - CORRECTION: Corrects errors and incomplete information on mechanical assembly prints.
In-plant effectivity -06 documentation changes only

RK01-00005 CODE: P ML: D
SEP-70 - PROBLEM: Documentation incomplete
CORRECTION: Add following documents to RK01-0 print set: A) RK8 Hardware List A-AL-RK01-0-3 B) RK8 Software Package A-SL-RK01-0-4 C) Checkout Procedure A-SP-RK01-0-5 D) Disk Cartridge Memory A-SP-RK01-0-6 E) Acceptance Procedure A-SP-RK01-0-7
In-plant effectivity -Addition of prints only to print set for all RK01 serials #5 thru #121 and future.

RK01-00006 CODE: P
SEP-70 - PROBLEM: Pivots called-out wrong on items #3 and #4. Section "D-D " on sheet 1 of 2 confusing.
CORRECTION: On sheet 2 of 2, item #3 calls-out item #5; should be item #4. Also: Item #5 calls-out item #7; should be item #6. On section "D-D " show item #1 reference.
In-plant effectivity -06 documentation change only

RK01-00007 CODE: P ML: F
JAN-71 - PROBLEM: Drafting error. Equipment being built to this ECO
CORRECTION: Change dimension 10.00 to 4.75 on prints and item #8 on Parts List should be 5 1/4 instead of 10 1/2
In-plant effectivity -Documentation change only

RK01-00008 CODE: P ML: H
NOV-71 - PROBLEM 1: Software and manuals shipped with RK8 system are only for diagnostic and maintenacne purposes.
CORRECTION 1: Update Software List to exclude systems software but to incluse the PS/8 Free Order Form.
PROBLEM 2: Acceptance practices are not in accord with the present Acceptance Procedure since the RK8 Instruction Test was made official.
CORRECTION 2: Update Acceptance Procedure to accurately reflect acceptance requirements.
In-plant effectivity -06 documentation change only

RK01-00009 CODE: M
DEC-71 - CORRECTION: Hold-down bracket and guide are to be painted to specification #9200120-94.
In-plant effectivity -03 rework immediately

RK01-00010 CODE: M
JAN-72 - PROBLEM: "A " hole in #7407692 shipping bracket does not line up with mating hole when assembled.
CORRECTION: Change "A " hole to 3/8 x 1/2 slot; change .50 Dimension to .53.
In-plant effectivity -03 rework

RK01-00011 CODE: M ML: J
APR-72 - PROBLEM 1: If a customer with an RK01-B orders another drive as an add-on, his present rear door only has cutouts for a single drive.
CORRECTION 1: Use the rear door with cutouts for two drives on all RK01-B's.
PROBLEM 2: The arrangement of H950-P and H950-Q blanks does not agree with PDP-8 Family option configuration drawings.
CORRECTION 2: Revise to conform to the PDP-8 Family cabinet configurations.
In-plant effectivity -Break-in as of june 1, 1972

RK01-00012 CODE: P ML: K
MAY-72 - CORRECTION: Change prints to call-out wiring for Caravel fans in second and third bays.
In-plant effectivity -06 documentation change only

RK01-A0013 CODE: F
JUN-72 - PROBLEM: Distance between centers of cartridge alignment pegs is off by .40 Inches. Larger cartridges do not set completely and damage can result.
CORRECTION: Replace alignment pegs with eccentric pegs supplied by vendor. These pegs compensate to bring the measurement to nominal 10 inches.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RK8 disk pack systems
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

RK05-B0036 CODE: F
APR-73 - PROBLEM 1: A cartridge which has been used extensively may have a flap that has been bent to such an extent that, upon insertion into the RK05, the cartridge door opener slips underneath the flap and traps the cartridge inside the drive.
CORRECTION 1: Change cartridge receiver so that it will hold the door opener in a higher position so that it cannot slip underneath the flap. Disposition code: 02 .
CORRECTION 2: Retrofit all RK05's in Westfield and Westminster with a piece of rubber sleeve. Disposition code: 03 .

NOTE: FCO RK05-B0041 is a correction supplement to this fco; the end result of the two FCO's is that two sleeves will be added to the cartridge receiver. This FCO orders one, FCO RK05-B0041 orders the second; the parts kit for FCO RK05-B0041 will include two sleeves so that implementation of FCO RK05-B0041 will effectively implement this FCO also. FCO's RK05-B0036, RK05-A0037, RK05-C0039 and RK05-B0041 are closely related and require identical disassembly of the RK05; it is therefore recommended that these FCO's be implemented in one operation.
In-plant effectivity -02/03 -See text
Field effectivity -Retrofit all RK05's on next scheduled PM
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

RK05-A0037 CODE: F
MAY-73 - PROBLEM 1: The plastic cartridge shells are now produced from several different molds. This requires some changes to the RK05 to assure proper operation with the various cartridges.
CORRECTION 1: Duckbill tool is to be modified. As soon as new pieces are available, approximately four weeks, retrofit all RK05's that are in-plant at that point in time. Disposition Code 03.
CORRECTION 2: Rework all cartridge support posts presently in stock. New parts to be used at the assembly line no later than May 14, 1973. Retrofitting machines that have been assembled before the new parts are available is not necessary. Disposition Code 02.
CORRECTION 3: With the phase-in of the shorter cartridge support post it is to be assured that the finger on the airduct does not exceed the tolerances of revision "B " (2.36 plus or minus 0.020 . A change to the #93-05703 airduct, at the assembly line in Westfield, is necessary.

NOTE 1: The cartridge that causes the problem is recognizable by its light grey-greenish color with a contrasting white access door latch. The problem of not being able to insert the cartridge and/or rubbing of the disk inside the shell is not present in all RK05's. It is dependent upon the way the cartridge receiver is built and set up. If a customer receives one of these cartridges and has a probelm with it, this FCO should be implemented.

NOTE 2: The parts kit for field retrofitting of this FCO consists of one #12-10744 Duckbill and two #74-09134 Cartridge Support Posts. The FCO form is in error in that it includes additionally the in-plant phase-in components, a #12-10681 Air Duct and a #74-09254 Air Duct Gasket.

NOTE 3: FCO's RK05-B0036, RK05-A0037, RK05-C0039, and RK05-B0041 are closely related and require identical disassembly of the RK05; it is therefore recommended that these FCO's be implemented in one operation.
In-plant effectivity -Correction 1 is 03-REWORK immediately and Correction 2 and 3 are 02 phase-in.
Field effectivity -Retrofit all RK05's
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

RK05-00038 CODE: M DD: M
MAY-73 - CORRECTION: Solenoid #12-10806 and Arm Solenoid #74-08140 can be combined into one part.
In-plant effectivity -02 phase-in

RK05-C0039 CODE: F DD: N
MAY-73 - PROBLEM: Cartridge door opener spring, #12-10844, is not strong enough to keep the access door open on certain cartridges.
CORRECTION: Use two stronger springs, #12-11384-00, right hand, and #12-11384-01, left hand, in place of #12-10844.

NOTE: FCO's RK05-B0036, RK05-A0037, RK05-C0039, and RK05-B0041 are closely related and require identical disassembly of the RK05; it is therefore recommended that these FCO's be implemented in one operation.
In-plant effectivity -03 * retrofit as soon as new springs are available.
Field effectivity -This FCO should be installed immediately in conjunction with FCO RK05-A0037 on all RKO5's when symptoms are present. All other RK05's should be updated on the next service or PM call.
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

RK05-00040 CODE: D DD: P
MAY-73 - PROBLEM: New Item #12, Drive Identification Numbers, being added to the Accessory List.
CORRECTION: Modify the front panel to include the dimple for the Identification Number.
In-plant effectivity -02 phase-in

RK05-B0041 CODE: F DD: R
JUL-73 - CORRECTION: This is a modification to FCO RK05-B0036. On the earlier FCO, one rubber sleeve was added to the cartridge receiver as a temporary solution. The final solution was to have been a change to the cartridge receiver. Since the proposed change to the cartridge receiver is not practical, this FCO makes the additional rubber sleeves a permanent solution;two sleeves are to be used. The change on cartridge receiver E-PS-1210679-0-0 of FCO RK05-B0036 will be reversed to the previous state. That is, revision "F " is same as revision "D ", revision "E " is not to be implemented. There are no cartridge receivers at revision "E " and no tooling change was made.

NOTE 1: An extra sleeve is included in the FCO parts kit for use in the event that FCO RK05-B0036 has not been implemented.

NOTE 2: FCO's RK05-B0036, RK05-A0037, RK05-C0039, and RK05-C0041 are closely related and require identical disassembly of the RK05; it is therefore recommended that these FCO's be implemented in one operation.
In-plant effectivity -03 * -Add two rubber sleeves to cartridge receivers in Westfield and Westminster immediately. The introduction of the two stiff torsion springs FCO RK05-C0039 makes it necessary to have a sleeve on both sides of the cartridge receiver. When retrofitting drive to FCO RK05-C0039, add the second sleeve to the cartridge receiver.
Field effectivity -Retrofit all RK05's at next scheduled PM
(Time To Install And Test .5 Hour.) (Kit Contents -FCO/Prints And Parts)

RK05-00042 CODE: D DD: S
AUG-73 - PROBLEM: Threaded quarter turn receptacles are difficult to adjust; this results in noninterchangeable plenum covers.
CORRECTION: Use spring loaded and pressed in receptacles and a longer quarter turn stud.
In-plant effectivity -02 -Phase-in by September 17, 1973

RK05-00043 CODE: D
SEP-73 - CORRECTION: The configuration drawing, D-OC-RK05-0-15, must be changed to indicate use of the 861 Power Control.
In-plant effectivity -Documentation/design change

RK05-00044 CODE: D
SEP-73 - PROBLEM: The tolerance spread of read signal amplitude, specified in Section J, Basic Read/write Test, is too tight for the realistic combination of disk surface, head amplitude, and amplifier tolerance.
CORRECTION: Increase tolerance spread as specified in Engineering Specification A-SP-RK05-0-16.
In-plant effectivity -Documentation/design change

RK05-C0045 CODE: F DD: T

SEP-73 - PROBLEM: After a momentary power failure, an RK05 can recover to a ready state but SEEK INCOMPLETE may be set, which prevents programs from running unless a RESTORE command is issued. The slightly lowered +5V allows the SEEK INCOMPLETE counter to fill, setting the ERROR flip-flop. A logic race condition removes the flip-flop clear before the set is removed.
CORRECTION: Delay the removal of **READY H** by approximately 100 nsec with the addition of a 1000 pfd capacitor to the wirewrap block between A02C1 and A01T1. This will allow **R/W/S READY L** , M7700, to remove the SEEK INCOMPLETE flip-flop set before **READY H** , the flip-flop clear, is removed, as sent from the M7701. The rework instructions are as follows: Install the capacitor with terminal pushed tight to wirewrap and wire tabs toward positioner. Bend capacitor toward positioner so as not to touch any wire wrap pins, and down into space between wirewrap block and sheet metal.
Quick Check: A 1000 pfd capacitor from A02C1 to A01T1.
In-plant effectivity -Retrofit in systems area as necessary if problem is present; in manufacturing area, must add after October 31, 1973.
Field effectivity -Retrofit all RK05's
(Time To Install And Test .5 Hour.) (Kit Contents -PF1038 -FCO/Prints And Parts)

RK05-00046 CODE: D DD: U

OCT-73 - CORRECTION: New light caps #12-11334-00 and #12-11334-01 are to be introduced into the assembly in place of the original light caps, #12-10798-01 and #12-10798-02.
In-plant effectivity -Use original light caps until stock is depleted. Do not intermix new and old light caps in the same machine. Use RK05's with the same style light caps in the same system.

RK05-00047 CODE: P

OCT-73 - CORRECTION 1: Important steps in the procedure are to be made to stand out to readers to emphasize their importance.
PROBLEM 2: When used with RK8-E and RK11-D controllers, the lower head cannot be selected off-line unless the interface cable is disconnected.
CORRECTION 2: Modification to the procedure for operation off-line.
CORRECTION 3: Correction of two instances of test point number error.
In-plant effectivity -Documentation change only

RK05-00048 CODE: D DD: V

OCT-73 - PROBLEM: The unslotted ends of the wirewrap block can be broken or cracked accidentally unless care is taken to remove or insert modules "in-line " with the block.
CORRECTION: Use the slotted end wirewrap block so that modules may be inserted or removed with a rocking motion.
In-plant effectivity -In wirewrap build area, phase-in no later than February 1, 1974. Other areas may use present stock until new is available.

RK05-00049 CODE: D

OCT-73 - PROBLEM: Margin testing of several drives has shown that the closed loop data window potentiometer setting could be more appropriately placed at 440 nsec instead of 420 nsec. This setting would allow the drive to be more tolerant to varying circumstances, ie, heat, peak shift, and component tolerances.
CORRECTION: Change the setting as described in the RK05 Production Checkout Procedure, A-SP-RK05-0-16.
In-plant effectivity -Document/design change

RK05-00050 CODE: P DD: W

NOV-73 - PROBLEM: The following are included in Accessory List A-AL-RK05-0-17 and should not be included in Parts List A-PL-RK05-0-0: Item 107, 74-09691-1-0 Shipping Bracket, Right Hand, and Item 140, 74-09691-2-0 Shipping Bracket, Left Hand. According to the Accessory List, these brackets are only to be included if the RK05 is shipped in a rack; they are not to be included with every RK05. Material is to be ordered according to the Accessory List.
CORRECTION: Remove these items from the Parts List.
In-plant effectivity -Stop shipping these items with every RK05 leaving Westfield; add in Westminster as necessary according to system configuration.

RK05-00051 CODE: D DD: Y

DEC-73 - PROBLEM: A cost reduction may be gained if the present multipart sector transducer assembly is replaced by a molded plastic assembly which includes the internal electronic components and attached output wire harness.
CORRECTION: Add new part to Parts List and a note to the Unit Assembly drawing to explain the interchangeability.
In-plant effectivity -Phase-in

RK08-00007 CODE: P ML: E
JUL-71 - PROBLEM: On production machines, a .01 Ufd capacitor has been installed on the **B RUN** signal where it comes in on the cable; its purpose is to eliminate spikes. The addition has not as yet been documented.
CORRECTION: Update the cable print and external component list to reflect the addition of this capacitor.
In-plant effectivity -Documentation change only

RK08-A0008 CODE: F ML: F WL: C
SEP-71 - PROBLEM 1: **INH ERROR** flip-flop comes up in random state when disk is powered-on.
CORRECTION 1: Set **INH ERROR** with **B INITIALIZE** .
PROBLEM 2: **WRITE** flip-flop remains on (1) after a write operation and **WRITE LOCK ERROR** is set if a write lockout switch is then set.
CORRECTION 2: Clear **WRITE** flip-flop with **TRANSFER DONE FLAG** [1] .
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RK08
[Time To Install And Test 2.0 Hours] [Documentation $ 5.00 , Parts None , DEC Labor $ 50.00] [Kit Contents -FCO Only]

RK08-B0009 CODE: F ML: H WL: D
APR-72 - PROBLEM 1: Changing drive selection bits of the command register, while a drive is in a new select cycle, causes errors.
CORRECTION 1: Initiate a new select cycle with **IOT START** .
PROBLEM 2: Data break requests during a break cycle cause data errors but no data rate errors.
CORRECTION 2: Check **BREAK REQUEST** flip-flop at bit 11 time of a disk transfer.
PROBLEM 3: Glitches from PDP-8/E periodically set bit 01 or 02 of the command register.
CORRECTION 3: Strobe bits 01 and 02 with a pulse amplifier.
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all RK08's
(Time To Install And Test 5.0 Hours) (Documentation $ 5.00 Parts - None DEC Labor $ 135.00) (Kit Contents -FCO/Prints)

RK08-D0010 CODE: F ML: J WL: E
JUL-72 - PROBLEM: Slow IC's or wide tolerance on delay line can cause incorrect long parity check sum during a write.
COkRECTION: Increase time between **GO TO MAJOR I H** and **WRITE 13 H** by 50 nsec.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RK08's
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

RK08-00011 CODE: P ML: K
JUL-72 - CORRECTION: Add H721 power supply prints to RK08 Master Drawing List.
In-plant effectivity -Documentation change only

RK08-B0012 CODE: F ML: L
SEP-72 - PROBLEM: Spurious noise in WC and CA register can cause intermittent failures which destroy programs.
CORRECTION: Change the WC and CA M206 modules to M215's in slots B03, B04, B08, and B09.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RK08's.
(Time To Install And Test 2.0 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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MAYNARD, MASSACHUSETTS

ECO DEC-O-LOG Engineering Change Order Log

RP08-C

Moving Head
Disk Controller

PROCESSOR TYPE PDP-8/E

RP08C-C0001 CODE: DF ML: A WL: A
SEP-72 - PROBLEM: READ and WRITE not cleared on initialization.
CORRECTION: Clear READ and WRITE with INITIALIZE .

In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RP08-C
(Time To Install And Test .8 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

RS08-00040 CODE: M
MAR-71 - PROBLEM: Assembly problems with the #74-07001 cover.
CORRECTION: Change Item #2 to casting #12-10321. Delete Item #5 and call out spot welding for assembly of Item #4. Change Item #3 from Southco inserts to floating nuts.
In-plant effectivity -01 phase-in

RS08-00041 CODE: P
APR-71 - CORRECTION 1: Correct a dimension on drawing C-MD-7407428-0-0.
CORRECTION 2: Correct an insert call out on drawing C-IA-7407425-0-0.
In-plant effectivity -06 documentation change only

RS08-00042 CODE: M
APR-71 - PROBLEM 1: Eliminate the nylon insert, nut, in the header shoe mounting block.
CORRECTION 1: Use 2-56 cap screws with nylon coating.
PROBLEM 2: Poor grounding between head and body.
CORRECTION 2: Change coating on head block to chromocoat.
In-plant effectivity -01 phase-in

RS08-00043 CODE: P
MAY-71 - PROBLEM 1: Need additional variation of the #70-06481 power cord.
CORRECTION 1: Add dash four (-4) variation to print C-IA-7006481-0-0.
CORRECTION 2: Correct variation table.
In-plant effectivity -06 documentation change only

RS08-00044 CODE: M
MAY-71 - PROBLEM: Deck #74-07058 presents manufacturing problems in checking motor mounting hole locations.
CORRECTION: Rotate motor mounting holes.
In-plant effectivity -01 phase-in

RS08-00045 CODE: M
MAY-71 - PROBLEM 1: Machining the bottom surface of the #12-09222 bottom deck mounting is not required.
CORRECTION 1: Change to agree with revised drawing E-SC-1209222-0-0.
PROBLEM 2: Change the #74-07008 deck mounting to agree with the casting drawing.
CORRECTION 2: Change to agree with revised drawing D-IA-7407008-0-0, eliminate finish on bottom surface, and show bore depth from top surface.
In-plant effectivity -01 phase-in

RS08-A0046 CODE: F
JUL-71 - CORRECTION: Adds foam tape gaskets to the air filters to prevent leakage of unfiltered air around the absolute filter.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all RS08's manufactured August 1971 or earlier (Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts $ 1.00 , DEC Labor -See Note) Note: The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -FCO/Prints And Parts)

RS08-00047 CODE: M
AUG-71 - PROBLEM: Shipping bracket holes in bottom casting do not line up with mounting holes in motor due to rotating of motor.
CORRECTION: Change hole location.
In-plant effectivity -03 retrofit immediately

RS08-00048 CODE: P
SEP-71 - PROBLEM: The logic standoff print shows and calls for one insert #90-07606; the Parts List for Item #2 lists a quantity of two.
CORRECTION: Change Item #2 quantity to one.
In-plant effectivity -06 documentation change only

RS08-00049 CODE: M
NOV-71 - CORRECTION: Correct improper dimension on end bracket drawing B-IA-7407246-0-0.
In-plant effectivity -03 retrofit immediately

RS08-00050 CODE: M
DEC-71 - CORRECTION: Change dimensions on the #74-07183-0-0 blower mount.
In-plant effectivity -09 scrap immediately

RS08-00051 CODE: D
NOV-72 - PROBLEM 1: Plug used with #70-06419 cable assembly is not UL approved.
CORRECTION 1: Use UL approved plug.
PROBLEM 2: New power cord available.
CORRECTION 2: Use new power cords, #17-00025 and #17-00027.

NOTE: See correction supplement ECO's RS08-0051A, RS08-0051B, and RS08-0051C.
In-plant effectivity -02 phase-in both items at the same time.

RS08-0051A CODE: D
NOV-72 - PROBLEM 1: On ECO RS08-00051, two part numbers are reversed.
CORRECTION 1: On Item #8, change #12-11192 to #12-11193; on Item #9, change #12-11193 to #12-11192.
CORRECTION 2: Disregard "FIELD SERVICE AFFECTED " notation.

NOTE: Correction #1 is cancelled by supplement ECO RS08-0051B.
In-plant effectivity -Unchanged

RS08-0051B CODE: D
NOV-72 - PROBLEM: Correction 31 in supplement ECO RS08-0051A is in error.
CORRECTION: The following information applies to the Assembly Parts List: #17-00025 variation 2, #17-00027 variation 1, #12-11192 variation 1, and #12-11193 variation 2.
In-plant effectivity -Unchanged

RS08-0051C CODE: D
FEB-73 - PROBLEM: BREAK-IN/EFFECTIVITY needs updating on ECO RS08-00051.
CORRECTION: For cords, make BREAK-IN/EFFECTIVITY Code 02, Phase-in; for plugs, Code 03, retrofit effective 2/1/73.
In-plant effectivity -Updated

RS08-B0052 CODE: F
APR-73 - PROBLEM: A potential shock hazard exists in the RS08 in that neither side of line is neutral for 230 VAC operation. External equipment plugged into the RS08 will also be without a connection to neutral.
CORRECTION: Add caution warning to rear panel silk screen.
In-plant effectivity -03 * -Ship all 110 VAC systems with existing silk screen until used up. Add decal to all 230 VAC systems until new silk screen is available.
Field effectivity -Add decal to all RS08's used on 220/240 volt systems.
(Time To Install And Test N/A) (Kit Contents -FCO/Prints And Parts)

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MAYNARD, MASSACHUSETTS

EC DEC-O-LOG Engineering Change Order Log

RS08-M

RS08/RS09
Mechanical Assembly

PROCESSOR TYPE PDP-8, PDP-9, PDP-11 and PDP-15

RS08M-00001 CODE: D
FEB-70 - PROBLEM 1: Data Head Harness drawing D-IA-7006221-0-0 is unclear on flexprint to etch junction.
CORRECTION 1: Redraw detail "D " and view "B-B ".
PROBLEM 2: Flexprint length shown improperly.
CORRECTION 2: Redraw 26 inch dimension.
PROBLEM 3: Connector block not mounted flush on etch.
CORRECTION 3: Mount connector block flush on etch and redraw view "A ".
PROBLEM 4: Gray foam tape to cover flexprint not called-out.
CORRECTION 4: Add gray foam tape to Parts List and notes.
PROBLEM 5: Identification numbers do not appear on print picture of etch or in Parts List.
CORRECTION 5: Add numbers to print picture of etch as shown in print E-IA-5004478-0-0 , revision "D ", and add etched boards as individual items on the Parts List.
In-plant effectivity -Phase-in

RS08M-00002 CODE: P
APR-70 - PROBLEM: Unclear dimensions on print of Data Head Harness, D-IA-7006221-0-0 .
CORRECTION: Clarify dimensions on Data Head Harness drawing.
In-plant effectivity -06 documentation change only

RS08M-00003 CODE: M ML: C
MAY-70 - PROBLEM: Improper air flow to disk area.
CORRECTION 1: Install air duct and rubber boot to supply air to casting.
CORRECTION 2: Install air cover in RS08 casting; redraw view "B-B " to a larger scale on D-UA-RS08-M-0 and to include air duct and air cover.
In-plant effectivity -Phase-in

RS08M-00004 CODE: D
JUN-70 - PROBLEM: There is a corrosion build up on the data head harness, #7006221, at the solder joint of the flex-print, #9105692-1, and the etch boards, #50-4478E-1 thru -4.
CORRECTION: Add to notes 2, 3, and 5 on drawing D-IA-7006221-0-0 , the following: "use a water-white alcohol-rosin flux, 100% noncorrosive ".
In-plant effectivity -Phase-in immediately

RS08M-00005 CODE: M
DEC-70 - PROBLEM: Tolerance location of surface "B " to surface "A " creates too tight a tolerance on surface opposite.
CORRECTION: Change location of tolerance "B " to "A ".
In-plant effectivity -01 phase-in

RS08M-00006 CODE: P ML: D
FEB-71 - PROBLEM: Packaging instructions are not included in the drawing set.
CORRECTION: Add packaging instructions, A-PI-3700029-0-0 .
In-plant effectivity -06 documentation change only.

RS08M-00007 CODE: P
APR-71 - CORRECTION: Drawing correction only for the #7407004 disk cap; correct 5/16 dimension and lower arrow head.
In-plant effectivity -06 documentation change only.

RS08M-00008 CODE: P ML: E
MAY-71 - PROBLEM: Packaging instructions for the RS08-M head shoe assembly are not included in the Print Set.
CORRECTION: Add packaging instructions to the RS08-M Drawing Index.
In-plant effectivity -06 documentation change only.

RS08M-E0009 CODE: F
FEB-72 - PROBLEM: Static discharge from disk to ground causes data errors.
CORRECTION: Provide low resistance ground path from disk to ground by the use of a grounding brush assembly.
In-plant effectivity -02 phase-in
Field effectivity -Retrofit all RS08-M's, RS09's, RS11's, and RS15's
(Time To Install And Test .5 Hour) (Documentation $ 5.00 Parts $ 2.60 DEC Labor $ 13.00) (Kit Contents -FCO/Prints And Parts)

RS08M-00010 CODE: M
FEB-72 - PROBLEM: In the RS08-M Disk Assembly, internal rubber funnel is chafing on top deck casting and blowing rubber particles onto the disk surface.
CORRECTION: Enlarge mating hole in top deck casting from 0.90 diameter to 1.10 diameter.
In-plant effectivity -02 phase-in

RS08P-00010 CODE: M

JAN-70 - PROBLEM: Relocation of capacitor in RS08-P chassis assembly obsoleted standard hold down bracket. Present configuration requires Cornell Dubilier capacitor wrap around strap #30393-10.
CORRECTION: Specify proper capacitor bracket with capacitor on the Parts List.
In-plant effectivity -Phase-in

RS08P-00011 CODE: M

FEB-70 - PROBLEM 1: New vendor for switch #1201168 provides switch terminal spacings different from etch board #5004548 hole spacings.
CORRECTION 1: Increase 1/8 inch diameter holes on drawing D-IA-5004548-0-0 to .1406 Diameter.
PROBLEM 2: Switch, item #2 on drawing B-IA-5408339-0-0 , no longer vendor number 6AT1-T2 .
CORRECTION 2: Delete 6AT1-T2 from part description on drawing B-IA-5404549-0-0 .
PROBLEM 3: In Switch Plate Assembly drawing C-AD-7006187-0-0 , flex-print, item #7 not adequately attached to write lock-out switch assembly, item #2.
CORRECTION 3: Add item #10, 1/2 inch fiber glass tape #9008880, one turn around base of board where flex-print is attached.
PROBLEM 4: No requirement to flush mount nuts on switch neck on drawing C-AD-7006187-0-0 .
CORRECTION 4: Add note 5 to flush mount nuts.
In-plant effectivity -Phase-in

RS08P-A0012 CODE: F ML: F WL: C

MAY-70 - PROBLEM: Intermittent **DRL FLAG** when a continuous data transfer occurs across two disks. FCO RF08-A0019 causes this problem to become apparent.
CORRECTION: Inhibit track "C " pulses until set of **DRL FLAG** is inhibited.

NOTE 1: See FCO RF08-A0019. NOTE 2: See correction supplement FCO RS08P-B0014.
In-plant effectivity -03 rework all multiple disk systems immediately
Field effectivity -Retrofit all multiple disk systems.
(Time To Install And Test .5 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

RS08P-B0013 CODE: F ML: H WL: D

JAN-71 - PROBLEM 1: False **PCA** signal generated if an extended disk is deselected and reselected within 150 usec.
CORRECTION 1: Do not gate the sliced output of track "A ", allowing **TC TAS** to always be present at the R303 delay (required in multi-disk systems only .
PROBLEM 2: Undefined interrupts generated by the rippling of the EMA counter and **WLS 0** set.
CORRECTION 2: Add a .01 Mfd capacitor at B18D (the OR'ed signal of all WLS) to delay WLS until the EMA counter has rippled to proper track. (required on all RS08's)
PROBLEM 3: Head Selection and Write Lock circuits deleted by revision "A " of print RS08-M-2 .
CORRECTION 3: Add RS08-P-7 to Drawing Index RS08-P-1.
PROBLEM 4: Failure of resistor R1 in motor control.
CORRECTION 4: Change resistor R1 from 10 watts to 55 watts if failure occurs.
PROBLEM 5: Error in motor control Circuit Schematic and Chassis Assembly drawings.
CORRECTION 5: Correct documentation errors.

NOTE 1: Correction #4 is not mandatory in the field but may be installed if the 10 watt resistor overheats.

NOTE 2: See correction supplement FCO RS08P-B0014.
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all RS08-P's as required.
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

RS08P-B0014 CODE: F ML: J WL: E

MAR-71 - PROBLEM 1: Signal **INHIBIT C** does not go to -3V (a problem if FCO RS08P-A0012 is installed .
CORRECTION 1: Add a -3V clamp to **INHIBIT C** .
PROBLEM 2: On multi-disk systems, WFF follows DMB (11) during WRITE even when disk is not selected, causing parity errors on cross-disk transfers (a problem if FCO RS08P-B0013 is installed .
CORRECTION 2: Change **TC TAP D** on WFF to **TC BTAS** .
In-plant effectivity -03 rework immediately.
Field effectivity -Retrofit all RS08-P's.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

RS08P-00015 CODE: P ML: K

MAY-71 - PROBLEM: RS08-P packaging instructions are not included in the drawing set.
CORRECTION: Add packaging instruction drawing A-PI-3700034-0-0 to the Drawing Index, D-DI-RS08-P-1 .
In-plant effectivity -06 documentation change only.

RS08P-00016 CODE: D ML: L WL: F

DEC-71 - PROBLEM 1: Wire required to be installed by manufacturing.
CORRECTION 1: Add wire to Wire List.
PROBLEM 2: #7407246, will not fit #7407247 when built to minimum tolerance.
CORRECTION 2: Change dimensions.
PROBLEM 3: Module Utilization drawing is ADS generated.
CORRECTION 3: Replace ADS Module Utilization drawing with hand drawn version.
In-plant effectivity -02 phase-in

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Engineering Change Order Log
DEC-O-LOG

RS64

65K, 16-Bit DECdisk

PROCESSOR TYPE **PDP-8/E and PDP-11**

RS64-C0008 CODE: F ML: K WL: C
OCT-71 - PROBLEM: Frequency of switching regulators on H737 Power Supply is approximately equal to writing frequency of G291 writer resulting in data bits being either added or dropped.
CORRECTION: All unused pins on the data cable will be tied to ground on logic rack when the H737 Power Supply is installed.

NOTE: This FCO must be installed in conjunction with FCO RS64P-C0004
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RS64's with FCO RS64P-C0004
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

RS64-C0009 CODE: F ML: L WL: D
DEC-71 - PROBLEM: Race condition of power-up of drive and other system power supplies causes occasional bus hang-up by RC11.
CORRECTION: Add DCLO signal and provide it to the RC11
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all RS64's with H737 Power Supply.
(Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents -FCO Only)

RS64-00010 CODE: M
FEB-72 - PROBLEM: Present locking bracket #7408979 is made from .093 Aluminum. This is not strong enough to prevent RS64 cabinet mounted drives from sliding forward during transportation.
CORRECTION: Change locking bracket from .093 Aluminum to .125 Steel.
In-plant effectivity -Phase-in

RS64-00011 CODE: P ML: N
JUL-72 - PROBLEM 1: Cable on Parts List should go with RC11.
CORRECTION 1: Delete cable from RS64 and supply existing cable with RC11 control.
PROBLEM 2: Module schematics needed in customer print set.
CORRECTION 2: Add module Circuit Schematics and Accessory List to customer prints.
In-plant effectivity -Documentation change

RS64-C0012 CODE: F
JANUARY-73 PROBLEM: Occasional data and block check errors from RC11/RS64 occur during systems diagnostic check. Errors always occur on data tracks near the power supply. Investigation shows high noise level on failing track signal.
CORRECTION: The high noise level can be eliminated immediately by placing a shield around the switching regulator portion of the H737 Power Supply.

NOTE 1: This FCO applies only to units which include the DEC H737 Power Supply.

NOTE 2: This FCO is cancelled by correction supplement FCO RS64-C012A.
In-plant effectivity – 03 retrofit immediately
Field effectivity – retrofit all RS64's if symptoms are present.
(Time To Install And Test 1.0 Hour.) (Kit Contents – FCO/Prints and Parts)

RS64-C012A CODE: F
APRIL-73 PROBLEM: FCO RS64-C0013 removed the H737 Power Supply from drive and mounted the supply to back of cabinet causing FCO RS64-C0012 to be invalid.
CORRECTION: Disregard FCO RS64-C0012.
In-plant effectivity – cancelled
Field effectivity – cancelled

RS64-C0013 CODE: F ML: P
MARCH-73 – PROBLEM: Random noise from H737 Power Supply causing data and block check errors.
CORRECTION: Relocation of supply from drive chassis to rear of cabinet.

NOTE 1: This FCO must be installed in conjunction with FCO H737-C0003.

NOTE 2: This FCO creates RS64-A and -B ML revisions "P".
In-plant effectivity – 03; Westfield – Code 03; Westminster – When problems exist, but Code 03 by April 15, 1973.
Field effectivity – retrofit all RS64's
(Time To Install And Test .8 Hour) (Kit Contents – FCO/Prints and Parts)

RS64-00014 CODE: P ML: R
APRIL-73 – CORRECTION: Illustrated Parts Breakdown for RS64 is to be called out on the Accessory List for RS64-A and RS64-B.
In-plant effectivity – 06 documentation change only.

RS64-D0015 CODE: F
APRIL-73 – PROBLEM 1: Cable print does not show true scale.
CORRECTION 1: Redraw print to scale on both sides of break-out point.
PROBLEM 2: Part number of Item #14 is incomplete on cable print.
CORRECTION 2: Correct Parts List on print.
PROBLEM 3: No protective covering for Item #15 on cable print.
CORRECTION 3: Add protective covering for ferrite tubes.
In-plant effectivity – all new cables built after June 1, 1973 must have this FCO. Cables built before June 1, 1973 will require this FCO only if ferrite tubes, Item #15, on cable are broken.
Field effectivity – retrofit all RS64's
(Time To Install And Test .5 Hour) (Kit Contents – NF772 - FCO/Prints)

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EC DEC-O-LOG Engineering Change Order Log

RS64-TA

Timing Track Writer

PROCESSOR TYPE PDP-8 Family

RS64TA-00001 CODE: D
MAR-72 - CORRECTION: Repackage tester and phase-in new tester documentation.

NOTE: This ECO creates DD revision "".
In-plant effectivity -02 phase-in

RS64TA-00002 CODE: D DD: A
OCT-72 - PROBLEM: Addition of RC8/E portion of tester.
CORRECTION: Change and add to silk screen RC8/E nomenclature and add new circuitry.
In-plant effectivity -03 retrofit immediately

RS64TA-B0003 CODE: F DD: B
JAN-73 - PROBLEM: When using the RS64-TA Timing Track Writer, there is no ground connection between power supply and disk drive logic rack.
CORRECTION: Add ground between power supply and disk drive logic rack.

NOTE: The RS64 Power Supply and the Timing Track Writer must have a common ground or the timing tracks will have excessive noise at the zero crossover point.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all RS64-TA's
(Time To Install And Test .3 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

TC08-00022 CODE: P ML: AA
MAR-72 - PROBLEM: UNIT AND MOTION delay setting wrong.
CORRECTION: Change UNIT AND MOTION delay, M302 in slot D14, top pot, from 140 msec to 120 msec on drawing D-BS-TC08-0-3.
In-plant effectivity -06 documentation change only

TC08-C0023 CODE: F ML: AB WL: S
JUN-72 - PROBLEM: Not enough time between finding a block and reading the first word of data in READ ALL mode when latest revision TC08 used on PDP-8, PDP-8/L and PDP-8/I. Results in intermittent READ ALL errors when running DECtape Random Exerciser for long periods of time.
CORRECTION: Separate **BLK IN SYNC** signal from **IDLE** to **BLK MK SH ST** pulse allowing additional 16 usec, plus or minus 30%, for processor to respond.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all TC08's when used with PDP-8, PDP-8/I, and PDP-8/L.
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts $ 35.00 , DEC Labor $ 27.00) (Kit Contents -FCO/Prints And Parts)

TC08-00024 CODE: P ML: AC
JUN-72 - CORRECTION: Add cable to Parts List and Accessory List.
In-plant effectivity -Documentation change only

TC08-00025 CODE: P ML: AD
JUN-72 - PROBLEM: System drawings do not show how to cable TU56's to the TC08 or to other TU56's.
CORRECTION: Revise drawings D-IC-TC08-0-12 and D-IC-TC08-0-20.

NOTE: This ECO creates TC08-A ML revision "AC " also creates TC08-N ML revision "M ".
In-plant effectivity -06 documentation change only

TC08-C0026 CODE: F ML: AE WL: T
OCT-72 - PROBLEM: Random mark track errors while doing a write function, especially with General Instrument heads.
CORRECTION: Reduce crosstalk delays from 10 usec to 6 usec on module M302 at location A14.

NOTE: This ECO creates TC08-A ML revision ' AD .
IN-PLANT EFFECTIVITY -03 REWORK IMMEDIATELY
FIELD EFFECTIVITY -RETROFIT ALL TC08'S WITH GENERAL INSTRUMENT READ/WRITE HEADS.
(TIME TO INSTALL AND TEST 1.0 HOUR.) (THIS FCO IS NO CHARGE TO CUSTOMER) (KIT CONTENTS -FCO/PRINTS)

TC58-00006 CODE: P ML: Y
JUL-71 - PROBLEM: PDP-8/E System TU10 Acceptance Procedure not included in TC58 Master Drawing List.
CORRECTION: Add PDP-8/E System TU10 Acceptance Procedure, A-SP-TC58-0-8 , to Master Drawing List.
In-plant effectivity -06 documentation change only.

TC58-B0007 CODE: DF ML: Z WL: T
OCT-71 - PROBLEM 1: Newer circuits allow earlier clocking of MB into TC58.
CORRECTION 1: Clock MB on trailing edge of **BT1** (**TS3**) .
PROBLEM 2: Ra's on W103 modules shorten IOP's for PDP-8/E.
CORRECTION 2: Replace W103's with W123's.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit PDP-8/E with TC58 as required (do not install in PDP-8 systems), all PDP-12's with TC58's
(Time To Install And Test 2 Hours) (Documentation $ 5.00 Parts $ 208.00 DEC Labor $ 50.00) (Kit Contents -FCO And Parts)

TC58-00008 CODE: P
DEC-71 - CORRECTION: Corrects description and adds part number for concealed stud on indicator panel detail, item #3 on Parts List.
In-plant effectivity -06 documentation change only.

TC58-C0009 CODE: F ML: AA WL: U
JUN-72 - PROBLEM: TC58 may space reverse an incorrect number of records because of noise in the gap between records.
CORRECTION: Increase, from three to six, the number of zero characters that need to be detected before **RECORD OVER** is set.

NOTE: See correction supplement FCO's TC58-C009A and TC58-C009B.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all TC58's.
(Time To Install And Test 5.0 Hours.) (Documentation $ 5.00 , Parts $ 29.00 , DEC Labor $ 135.00) (Kit Contents -FCO/Prints And Parts) Supplement FCO's TC58-C009A and TC58-C009B will also be included in the kit.

TC58-C009A CODE: F
JUN-72 - PROBLEM: FCO TC58-C0009 Mandatory ADD/DELETE sheet #3 is in error.
CORRECTION: Signal name **EOR-3 0-**should not have been changed. Disregard this change on sheet #3 of FCO TC58-C0009. Instead, a new signal, **EOR-3 1-**, connecting pins A11T to C25J should be added.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

TC58-C009B CODE: F
AUG-72 - PROBLEM: FC0 TC58-C0009 assumes that a similar change, backspace incorrect, has already been made to the TC59 and does not duplicate the changes to the TC50. The TC59 ECO has not yet been generated.
CORRECTION: Update TC50 prints and add R205 to the Master Drawing List.

NOTE: This FCO creates TC50 ML revision "S ".
In-plant effectivity -Unchanged
Field effectivity -Unchanged

TC58-00010 CODE: P ML: AB
JUL-72 - CORRECTION: Revise and redraw the Accessory List drawing.
In-plant effectivity -06 documentation change only

TC58-00011 CODE: P ML: AC
JUL-72 - PROBLEM: TU10 acceptance criteria for PDP-8/E systems are unnecessarily strict in certain areas, causing rejection of good machines.
CORRECTION: Change acceptance criteria to agree with criteria for PDP-8 systems.
In-plant effectivity -06 documentation change only

TC58-C0012 CODE: F ML: AD WL: V
DEC-72 - PROBLEM 1: If a READ COMPARE error occurs, a RECORD LENGTH error is erroneously indicated.
CORRECTION 1: Make RC ERROR inhibit '÷ 1 to ca , but allow data breaks.
PROBLEM 2: DCD level input to READ COMPARE ERROR flip-flop has insufficient set-up time, causing RC ERRORS to be indicated when the compare is good.
CORRECTION 2: Delay CHECK DB NOT EQUAL TO 0 1 usec rather than 400 nsec from **BMB TO DB** .

NOTE: This FCO creates TC50-O ML revision "U ".
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all TC58's when symptoms are present.
(Time To Install And Test 2.0 Hours)
(Kit Contents -FCO/Prints)

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Engineering Change Order Log
DEC-O-LOG

TR06-A

PEC 6000/7000 Control

PROCESSOR TYPE PDP-8

TR06A-A0001 CODE: DF
APR-72 - PROBLEM 1: OPEN flip-flop in RAW logic not cleared by INITIALIZE .
CORRECTION 1: Change logic to clear OPEN with the signal CLEAR ERROR FLAGS .
CORRECTION 2: Corrects wire list error.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit TR06-A, #1 thru #8
ML revision A and WL revision A are created (Time To Install And Test 1.0 Hour) (This FCO Is No Charge To Customer) (Kit Contents - FCO/Prints)

TR06A-A0002 CODE: DF
APR-72 - PROBLEM 1: TR06-A does not write the correct CRCC on nine track drives.
CORRECTION 1: Correct wire list error. PROBLEM 2: SKIP ON TCR instruction will cause a skip when TCR indicator is off.
CORRECTION 2: Change indicator drive signal. PROBLEM 3: Not always possible to set STOP PULSE delay to 1 usec.
CORRECTION 3: Change tap connections on M302 and set delay to 1 usec. PROBLEM 4: Marginal loading of REG when DM04 or PDP 8/E is used.
CORRECTION 4: Change logic to clear at beginning of TS3 and load at end of TS3 . Set delay B31T2 to .1 Usec.

NOTE 1: The M302 tap connection change is the add A20S2 to A20N1.
NOTE 2: The block schematic change for correction #4 is shown in FCO TR06A-A0003 (REF D-BS-7620009-0-11 .
In-plant effectivity -Rework immediately
Field effectivity -Retrofit TR06-A #1 thru #4
ML revision B and WL revision B is created (Time To Install And Test - 1.5 Hours) (This FCO Is No Charge To Customer) (Kit Contents - FCO/Prints) TR06A-A0003 will also be included in the kit

TR06A-A0003 CODE: DF
APR-72 - PROBLEM 1: Incorrect delay setting shown for M302.
CORRECTION 1: Set M302 output B31T2 to .1 Usec.
CORRECTION 2: Corrects errors in drawing D-BS-7620009-0-11.
In-plant effectivity -Rework immediately
Field effectivity -All units in which FCO TR06A-A0002 has been installed
ML revision C is created (Time To Install And Test -N/A) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

TU10-0057A CODE: M
MAY-72 - PROBLEM: Wrong disposition code on ECO TU10-00057.
CORRECTION: Change disposition code on TU10-00057 from 03, REWORK to 02, PHASE-IN .
In-plant effectivity -Changed to 02 -Phase-in

TU10-00058 CODE: M
MAR-72 - PROBLEM: Stripped threads on hose fitting which mates with the vacuum channel cover. There is not enough thread length on present insert due, in part, to thread relief on hose fitting.
CORRECTION: Change insert to #90-7605 and change hole size to .281.
In-plant effectivity -02 phase-in

TU10-00059 CODE: P
MAR-72 - PROBLEM: Document A-II-1209786-0-1 is incorrect.
CORRECTION: Replaces the original procedure with a revision "A " version.
In-plant effectivity -06 documentation change only

TU10-00060 CODE: M
APR-72 - CORRECTION: Increases height of the DEC magtape logo inlay which is too small for the casting.
In-plant effectivity -02 phase-in

TU10-00061 CODE: M
MAY-72 - PROBLEM: Present color of paint (panel aluminum) is impractical. It is too difficult to match, is difficult to clean, and is impractical to use on our conveyorized painting system because it must be treated as a special color.
CORRECTION: Change color to 92-00110-68 gray.
In-plant effectivity -02 phase-in

TU10-00062 CODE: P
MAY-72 - CORRECTION: Changes the color code number to 92-00150-68.

NOTE: This is a limited distribution ECO.
In-plant effectivity -02 phase-in

TU10-B0063 CODE: F
JUL-72 - PROBLEM 1: Shorting of Triac to chassis on power control board.
CORRECTION 1: Implement FCO 5408924-D0006.
PROBLEM 2: DV/DT limiting capacitor on power control board underrated.
CORRECTION 2: Implement FCO 5408924-B0007.
PROBLEM 3: Publicity inadequate when published under a "54 " number.
CORRECTION 3: Publish this ECO.
In-plant effectivity -None
Field effectivity -All TU10's requiring FCO's 5408924-D0006 and 5408924-B0007
(Time To Install And Test N/A) (Kit Contents -FCO Only)

TU10-D0064 CODE: F ML: R WL: F
JULY-72 - PROBLEM: A further ECO is necessary to implement ECO M7670-00002 which created the etch revision "C" board.
CORRECTION: Make changes to the Wire List and bussing print. The add/delete's are as follows: DELETE A21B2 to A25B2 and A22B2 to A25B2. ADD A22B2 to A25B2, A22B2 to A19B2, B22B2 to B19B2, A20B2 to B20B2 and A20B2 to A16H2. Revision "C" boards must be used when the logic is modified to this FCO. Revision "C" boards will operate in all previous logics.

NOTE: See continuation supplement FCO TU10-D064A.
In-plant effectivity - phase-in
Field effectivity - install upon customer request
(Time To Install And Test 1.0 Hour) (Documentation $5.00, Parts None)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents - NF1087 - FCO/Prints

TU10-D064A CODE: F
JANUARY-74 - PROBLEM: ECO TU10-00064 should have been marked "FIELD SERVICE AFFECTED".
CORRECTION: Change Field Effectivity to "YES" and provide distribution to the field.
In-plant effectivity - unchanged
Field effectivity - initiated

TU10-00065 CODE: P ML: S
JUL-72 - CORRECTION 1: Update the Accessory List to include cable requirements.
CORRECTION 2: Correct designation of note on the Module Utilization drawing.
CORRECTION 3: Update the Parts List.
In-plant effectivity -Documentation change only

TU10-B0066 CODE: F
DEC-72 - PROBLEM: Some drives experience intermittent crosstalk between data lines. The problem is most pronounced when Test 5, Pattern 5, Even Parity, Test 3, Pattern 5 for TM11, of Data Reliability is run.
CORRECTION: Implement FCO M763-B0002.

NOTE: The final release of this FCO is one page only: all information is included in this DEC-ECO-LOG synopsis since the only purpose of the FCO is to provide a cross reference to FCO M763-B0002.
In-plant effectivity -03 implement FCO M763-B0002.
Field effectivity -Implement FCO M763-B0002.

TU10-B0067 CODE: F
DEC-72 - PROBLEM: Noise transients coupling into read/write electronics from reel motor brake circuits. This has caused several random read and write errors.
CORRECTION: Add ground strap, braid, item #152, from read/write module rack to casting.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all TU10's
(Time To Install And Test .3 Hour.) (Kit Contents -FCO/Prints And Parts)

TU10-00068 CODE: D ML: U
DEC-72 - CORRECTION: Replace several existing mechanical parts with die cast parts for cost reduction.

NOTE: These parts have been in production for six months; this ECO will bring the prints up to date.
In-plant effectivity -06 documentation change

TU10-00069 CODE: M
FEB-73 - PROBLEM: Unstable reverse-direction skew required capstan motor shimming operation to establish stability. The excercise is very tedious and time consuming.
CORRECTION: Head mounting plate, #74-07953-0, modified to allow raising or lowering the reference level of the mounting plate relative to the deck plate. Modification includes the addition of two 10-32 flat-tip "jacking " screws and relief machining of the surface of the lower mounting plate.
In-plant effectivity -02 phase-in

TU10-B0070 CODE: F
FEB-73 - PROBLEM: Modified head mounting plate, with ECO TU10-00069 with two jacking screws and relieved rear surface, requires that TU10's manufactured up to approximately March 1973, and using the modified head mounting plate, be equipped with a 0.006 inch thick shim in the left buffer column. After March, TU10 decks will have the necessary modification to eliminate the need for the shim.
CORRECTION: Apply shim in left buffer column under capstan. Use a 0.006 inch thick stainless steel shim #12-11364 and adhere to buffer column floor with Locktite #404, yellow bottle, #29-16578.
In-plant effectivity -Implement immediately until modified decks are available.
Field effectivity -Install if unmodifed head assembly is replaced with modified head assembly, ECO TU10-00069.
(Time To Install And Test 2.5 Hours.) (Kit Contents -FCO/Prints And Parts)

TU10-00071 CODE: M
FEB-73 - CORRECTION: Machining change for modified head mounting plate; left buffer column depth is changed and other machining changes are made on the TU10 casting and machining prints, E-SC-1209871-0-0 and E-IA-7407991-0-0.
In-plant effectivity -02 phase-in

TU10-B0072 CODE: F ML: V WL: H
MAR-73 - PROBLEM: If, for any reason, three consecutive read strobes are missed by the read timing logic during a write operation, the TU10-M will run away.
CORRECTION: Inhibit shutdown during write operations. To do this: 1: Add wire from B12A1 to B13V1, **CWDR H** . 2: Rework M895 per FCO M895-C0006.
In-plant effectivity -03 * -Retrofit all TU10's used with TM11 or TM8/E accepted for customer shipment after 3/21/73. Add wire change to all new builds.
Field effectivity -Retrofit all TU10's
(Time To Install And Test .3 Hour.) (Kit Contents -FCO/Prints)

TU10-00073 CODE: D
MAR-73 - PROBLEM: Use of H950-DA Mounting Panel Door is unnecessary. The H720 can be mounted on the front of the TU10 cabinet with savings in material cost.
CORRECTION: Mount H720 Power Supply on front of cabinet and eliminate mounting panel door and its associated parts.

NOTE: See correction supplement ECO TU10-0073A.
In-plant effectivity -02 phase into production by April 1, 1973. This ECO does not affect units already built.

TU10-0073A CODE: D
MAR-73 - PROBLEM: ECO TU10-00073 should have added filler strips, H952GA and H952GB.
CORRECTION: Add H952GA and H952GB to basic cabinet assembly #70-06501-24.
In-plant effectivity -Unchanged

TU10-00074 CODE: P ML: W
APR-73 - CORRECTION: Add Illustrated Parts Breakdown to the TU10 Accessory List.
In-plant effectivity -Documentation change only

TU10-00075 CODE: F
MAY-73 - PROBLEM: Head cover causing tape creasing during unloading operation due to excessive tolerance buildup. This problem does not exist on all TU10's.
CORRECTION: Change machining dimension for future units; return existing units for rework.
In-plant effectivity -03 retrofit immediately
Field effectivity -Exchange cover on any TU10 when symptoms are present.
(Time To Install And Test .3 Hour.) (Documentation $ 5.00 , Parts $ 18.40) The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents - FCO/Prints And Parts)

TU10-00076 CODE: M
MAY-73 - PROBLEM: Roll pin being used in door catch of tape transport assembly loosens after repeated closings. This occurs as a result of the unit door impacting the roll pin.
CORRECTION: Shorten length of roll pin so unit door does not hit the roll pin upon closing.
In-plant effectivity -02 phase-in by June 15,1973 in all units on Peripheral Manufacturing floor.

TU10-B0077 CODE: F
JUN-73 - PROBLEM: Reel hub gauge and roller guide gauge, used for alignment, requires dimension change to compensate for tighter TU10 buffer column depth.
CORRECTION: Change dimensions to provide a modified gauge suitable for all TU10's, old and new. A 1/8 inch diameter hole in the gauge handle will identify a modified gauge.

NOTE: New gauges may be ordered as required from Field Service Logistics; they are identified as follows: #29-18611, hub gauge 96-05461 and #29-18607, roller guide block gauge 96-05460.
In-plant effectivity -02 * -All new gauges to be made per this change.
Field effectivity -Scrap all gauges not meeting new specifications
(Time To Install And Test N/A) (Documentation $ 5.00 , Parts $ None) (Kit Contents -FCO/Prints)

TU10-00078 CODE: P ML: Y
NOVEMBER-73 – PROBLEM: TU10's entering final acceptance in Westminster frequently require minor cleaning of their brake plates as a result of extensive pre-acceptance run time.
CORRECTION: Add a note to the checkout procedure requiring that brakes be cleaned before final acceptance run.
In-plant effectivity – effective November 15, 1973, all TU10's entering final acceptance are subject to this requirement.

TU10-B0079 CODE: F
OCTOBER-73 – PROBLEM: Erratic behavior of Canadian Fluidic vacuum switches.
CORRECTION: Replace all Canadian Fluidic vacuum switches with Fairchild Control switches, #12-10477.
In-plant effectivity – return all Canadian Fluidic switches to stock for refund. Do not ship TU10's until replaced with Fairchild Control switches.
Field effectivity – replace all Canadian Fluidic vacuum switches in all TU10's
(Time To Install And Test 1.5 Hours.) (Kit Contents – PF1076 – FCO/Prints and Parts)

TU10-00080 CODE: D ML: Z WL: J

NOVEMBER-73 – PROBLEM 1: Difficulty in putting two #24 AWG wraps on pin A22B2 which has a second level #30 AWG wrap on it.

CORRECTION 1: Delete the #30 AWG wire which is duplicating a #24 AWG wire.

CORRECTION 2: Add #24 AWG wiring to the wired assembly.

In-plant effectivity – already in use

TU10-B0081 CODE: F ML: AA

DECEMBER-73 – PROBLEM: Right buffer column roller can crease tape during loading if tape is positioned incorrectly; tape catches and rides on roller flange.

CORRECTION: Install flange cover to the right roller guide; the flange cover is bonded with Locktite to the right roller guide shaft extension.

In-plant effectivity – phase-in

Field effectivity – retrofit all TU10's on next service call

(Time To Install And Test .3 Hour) (Documentation $5.00, Parts $3.00)

The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.

(Kit Contents – PF1135 – FCO/Prints and Parts)

TU10-00082 CODE: P ML: AB

FEBRUARY-74 – PROBLEM: TU10 print D-BS-TU10-0-07 has an error.

CORRECTION: Change pin number on signal **R REV H** from AS2 to AJ2.

In-plant effectivity – documentation change only

VR12-C0034 CODE: F

OCT-71 - PROBLEM: Channel Select switch not wired according to prints.
CORRECTION: Revise per instructions enclosed in this FCO.

NOTE: This FCO must be installed in conjunction with FCO EM12-BOO54.
In-plant effectivity -03 rework
Field effectivity -Retrofit all VR12's in EM12's with FCO EM12-B0054.
(Time To Install And Test .3 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 8.00) (Kit Contents -FCO Only)

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Engineering Change Order Log
DEC-O-LOG

VR14

Display

PROCESSOR TYPE Family of 8, PDP-11, PDP-12 and PDP-15

VR14-00009 CODE: P ML: F
JUN-71 - PROBLEM: The 374-B Light Pen Panel Assembly must be added to the VR14 print set.
CORRECTION: Make additions to print set to document the change.
In-plant effectivity -06 documentation change only

VR14-00010 CODE: D ML: H
JUL-71 - PROBLEM: Present construction of VR14 does not have the prerequisites necessary to convert it to a VR20.
CORRECTION: Rework VR14 parts so VR14 will be convertable to VR20.

NOTE: This ECO creates 7007084-0-1 (Power Supply Circuit Schematic) CS revision "C ".
In-plant effectivity -01 phase-in

VR14-00011 CODE: D
JUL-71 - PROBLEM: FCO G836-A0002 changes size of transistors Q2 and Q4; as a result heat sink #7408587 will not fit.
CORRECTION: Inactivate revision "0 " heat sink, implement new revision "A ".
In-plant effectivity -02 phase-in

VR14-00012 CODE: D
AUG-71 - PROBLEM: Hot side of yoke wiring going to wrong pin.
CORRECTION: Reverse gray and white wires on yoke assembly.
In-plant effectivity -03 rework immediately

VR14-00013 CODE: D ML: J
SEP-71 - PROBLEM 1: Heat sink on G836 has wrong dimensions.
CORRECTION 1: Correct dimensions of heat sink.
PROBLEM 2: Power supply cable too short at AC switch.
CORRECTION 2: Lengthen wires on cable.
PROBLEM 3: AC wires on high voltage supply too short.
CORRECTION 3: Lengthen wires on supply.
CORRECTION 4: Add Checkout and Acceptance Procedure to print set.
CORRECTION 5: Add A225-YA variation to Block Schematic.
In-plant effectivity -03 rework immediately

VR14-B0014 CODE: F ML: K
OCT-71 - PROBLEM: Channel 1 and channel 2 are wired wrong on wired assembly.
CORRECTION: Change channel 1 from A04M to A04N; change channel 2 from A04N to A04M.

NOTE: This FCO must be installed in conjunction with FCO EM12-A0054 where applicable.
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all VR14's except, for PDP-12 use, see FCO EM12-A0054.
(Time To Install And Test 2.0 Hours.) (Documentation $ 5.00 , Parts None , DEC Labor $ 54.00) (Kit Contents -FCO/Prints)

VR14-A0015 CODE: F ML: L
MAR-72 - PROBLEM 1: X DEFLECTION heat sink is not receiving enough air for proper cooling.
CORRECTION 1: Reverse X AND Y DEFLECTION heat sinks. PROBLEM 2: Production is not putting sufficient amount of thermal compound on power transistors.
CORRECTION 2: Add thermal compound to Parts List and amount to be used per transistor. "NOTE : Thermal compound to be put on with a flux cleaner brush, the entire bottom surface of power transistors 2N4399 and 5302 and both sides of insulating washers to be covered with 1/32 inch of thermal compound. No bare metal should show ". PROBLEM 3: High voltage is too high.
CORRECTION 3: Change input leads of high voltage supply from 110 volt tap on power supply transformer to the 100 volt tap.

NOTE: This FCO creates 7007084-0-1 (Power Supply Circuit Schematic) CS revision "D ".
In-plant effectivity -03 rework immediately
Field effectivity -Retrofit all VR14's
(Time To Install And Test 2.0 Hours) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints)

VR14-00016 CODE: P ML: M
APR-72 - PROBLEM: Assembly #7007165 does not have latest drawing of power regulator board.
CORRECTION: Change the drawing of the power regulator assembly, D-AD-7007165-0-0, to reflect new board, revision "B ".
In-plant effectivity -06 documentation change only

VR14-00017 CODE: M
JUL-72 - PROBLEM: 14 pin Amphenol connector has to be added to top mounting plate.
CORRECTION: Add new cutout to top mounting plate.
In-plant effectivity -02 phase-in as of 8/15/72

VR14-00018 CODE: M
JUL-72 - CORRECTION: Change hole location and silk screen for control panel.
In-plant effectivity -02 phase-in

VR14-00019 CODE: D ML: N
JUL-72 - CORRECTION: Modify VR14 to make it compatible for use on the GT40.
In-plant effectivity -02 phase-in

VR14-00020 CODE: P
OCTOBER-72 – PROBLEM: Wrong Silk Screen called out on light pen front panel drawing.
CORRECTION: Delete Item #4, Silk Screen B-SS-7408425-0-1. Add new Item #4, Silk Screen B-SS-7409068-0-1.
In-plant effectivity -- 03 retrofit immediately

VR14-00021 CODE: D ML: P
OCTOBER-72 – CORRECTION: Make changes to VR14 which are required as a result of GT40 Light Pen changes.
In-plant effectivity – 03 retrofit immediately.

VR14-C0022 CODE: F
DECEMBER-72 – PROBLEM 1: The line fuse is too small when the VR14 system is used as a GT40.
CORRECTION 1: Increase fuse to 7 AMP slow blow.
PROBLEM 2: Inadequate cooling of heat sink with present fans.
CORRECTION 2: Change fans to seven blade Boxer fans
In-plant effectivity – 03 retrofit
Field effectivity – change fans in all VR14's in high temperature environments. Change fuse in all VR14's on GT40 systems.
(Time To Install And Test 4.0 Hours.) (Documentation $5.00, Parts $45.75)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – FCO/Prints and Parts)

VR14-00023 CODE: M ML: S
JANUARY-73 – PROBLEM: Cover is too hard to slide onto base for mounting.
CORRECTION: Add clips that are crimped onto extrusion.
In-plant effectivity -- 02 phase-in

VR14-00024 CODE: D ML: T
MARCH-73 – PROBLEM: Assembly problems on the wired assembly and top mounting assembly.
CORRECTION: Delete main harness #70-08457. Add two new harnesses, one to wired assembly and one to top mounting assembly.

NOTE: See continuation supplement ECO's VR14-0024A and VR14-0024B.
In-plant effectivity – 02 phase-in; use up all present stock. New and old assemblies can be mixed.

VR14-0024A CODE: D
MARCH-73 – CORRECTION: Provides additional changes required to drawings, and additional parts, for ECO VR14-00024.
In-plant effectivity – unchanged

VR14-0024B CODE: D
JUNE-73 – PROBLEM: New harness, #70-09357, requires additional pins to wired assembly.
CORRECTION: Add three pins to #70-07078 Wired Assembly Parts List.
In-plant effectivity – unchanged

VR14-B0025 CODE: F ML: U
APRIL-73 – PROBLEM 1: Improper grounding of P13, light pen jack.
CORRECTION 1: Delete wire from P13-1 to P13-2; add wire from P13-1 to P13-4; add wire from P13-2 to top screw of control panel.
PROBLEM 2: A225-YB heat sinks short against G840 module.
CORRECTION 2: Add module holder clip to prevent shorting.
CORRECTION 3: Correct Parts List error.
In-plant effectivity – 03 retrofit immediately
Field effectivity – retrofit all VR14's
(Time To Install And Test 2.0 Hours) (Kit Contents – FCO/Prints and Parts)

VR14-C0026 CODE: F ML: V
MAY-73 – PROBLEM: Signal lead to the brightness potentiometers couples with the "X" and "Y" output and oscillates at approximately 20 MHz, producing swimming characters and erroneous light pen hits.
CORRECTION: Add 180 Pfd capacitor #70-07078 on backplane from A04C to A04E; use coax cable for cathode wire. Isolate light pen jack from ground.

NOTE: See continuation supplement FCO VR14-C026A.
In-plant effectivity – 03* retrofit only systems in house with light pen and/or character problems.
Field effecitivity – retrofit all VR14's, primarily GT40's – VR14-LC's and VR14-LD's.
(Time To Install And Test 3.0 Hours.) (Kit Contents – FCO/Prints and Parts)

VR14-C026A CODE: F
JULY-73 – PROBLEM: Additional changes required to wired assembly drawings.
CORRECTION: Make additional documentation changes to drawings D-AD-7007078-0-0 and A-PL-7007078-0-0.
In-plant effectivity – unchanged
Field effectivity – unchanged

VR14-00027 CODE: P ML: W
JUNE-73 – PROBLEM: Power supply prints are in error and do not agree with model of #70-07084-1 harness
CORRECTION: Correct print errors
In-plant effectivity – 02 – Phase-in to production

VR14-00028 CODE: D ML: Y
AUGUST-73 – PROBLEM: Plates will not pass UL inspection, using screens.
CORRECTION: Cluster punching plates to eliminate screens.
In-plant effectivity – Phase-in 8/9/73

VR14-00029 CODE: D ML: Z
OCTOBER-73 – PROBLEM 1: Tedious disassembly of AC connections to front panel and non UL approved receptacle on rear panel.
CORRECTION 1: Change Power Supply #70-07084 to accommodate corrections.
PROBLEM 2: BNC connectors used on rear panels, and also the plug have high manufacturing costs.
CORRECTION 2: Change top mounting assembly, #70-07077 to accommodate corrections.
PROBLEM 3: Noise coupled on power sense wires degrade character quality.
CORRECTION 3: Change wired assembly #70-07078 to accommodate corrections.
PROBLEM 4: Illustrated Parts Breakdown affected by this ECO.
CORRECTION 4: Make changes to Illustrated Parts Breakdown as required.
In-plant effectivity – phase-in to production when all new assemblies are available. Update all models affected by this ECO.
CAUTION: New and old revision assemblies cannot be mixed.

VR14-00030 CODE: P DD: AA
JANUARY-74 – CORRECTION 1: Documentation errors in VR14 prints.
PROBLEM 2: VR14 print set does not comply with recognized standards.
CORRECTION 2: Replace Master Drawing List and Drawing Index with a Drawing Directory; redraw Block Schematic.
In-plant effectivity – documentation change only.

VR14-00031 CODE: M DD: AB
JANUARY-74 – PROBLEM: Nylon screws are shearing.
CORRECTION: Add shoulder washers and metal screws.
In-plant effectivity – phase-in by 1/25/74

VR14-00032 CODE: M DD: AC
JANUARY-74 – PROBLEM: Card holder unnecessarily expensive
CORRECTION: Extruded plastic will be used instead.
In-plant effectivity – use present stock until new guide #74-11673 is available.

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E C DEC-O-LOG Engineering Change Order Log

VT01

SCOPE ASSEMBLY

PROCESSOR TYPE PDP-8 FAMILY

VT01-00001 **CODE: D** **ML: A**
NOVEMBER-69 – PROBLEM: The VT01 cannot be used with the multiterminal system. The cursor rings when the scope is selected and deselected; 5 msec are required before it is fully settled.
CORRECTION: Add a #54-08567 cursor damping board that disconnects the X and Y signals from the cursor when the terminal is selected.
In-plant effectivity – all future VT01's

VT01-00002 **CODE: P** **ML: B**
JANUARY-70 – PROBLEM: Wrong wires called out.
CORRECTION: Correct drawing A-SP-VT01-K-1 to indicate correct type of wire.
In-plant effectivity – documentation change

VT01-00003 **CODE: P**
APRIL-70 – PROBLEM: Documentation change: Part description is not adequate
CORRECTION: Change: 54-08567 description from Scope Board to Cursor Damping Circuit; 54-08274 description from Scope Board to Scope Input Module.
In-plant effectivity – documentation change only

VT01-B0004 **CODE: F**
OCTOBER-70 – PROBLEM 1: Tektronix modified all scopes above serial number B142240 to accept a hard copy unit, #4601. In doing this, there are some wiring conflicts with the DEC modification.
CORRECTION 1: Remove wires that are in conflict.
PROBLEM 2: Write line above serial number B142240 is not compatible with logic levels.
CORRECTION 2: Add circuit to write line for logic compatibility.
PROBLEM 3: Scopes above serial number B142240 have cursor damping circuit built in.
CORRECTION 3: Remove DEC cursor damping board.

NOTE: For break-in effectivity, all VT01 storage scopes serial #B142240 and above use latest revision prints; for VT01 storage scopes below #B142240 use revision "A" prints.
In-plant effectivity – retrofit immediately
Field effectivity – retrofit as required
(Time To Install And Test 1.5 Hours) (Kit Contents – FCO/Prints and Parts)

VT01-B0005 **CODE: F**
SEPTEMBER-70 – PROBLEM: Tektronix modified all scopes, #B142240 and above, to accept a hard copy unit, #4601. Doing this resulted in some wiring conflicts with the cable.
CORRECTION: Change the #70-06289 cable on scopes, serial #B142240 and future. Below #B142240 the cable stays as it was.

NOTE: On scopes, serial #B142240 and above, use latest revision print. For those below serial #142240, use revisision "A" print.
In-plant effectivity – retrofit immediately
Field effectivity – retrofit all VT01's as required
(Time To Install And Test .5 Hour) (Kit Contents – FCO/Prints and Parts)

VT01-B0006 **CODE: F** **ML: C**
SEPTEMBER-70 – PROBLEM 1: Tektronix modified all scopes, serial number B142240 and future, to accept a hard copy unit, #4601. Doing this resulted in some wiring conflicts with our modification.
CORRECTION 1: Rewrite modification procedure to eliminate wiring conflicts.
PROBLEM 2: Write line, serial number B142240A and above, is not compatible with logic levels.
CORRECTION 2: Add to modification procedure to eliminate wiring conflicts.
PROBLEM 3: Scopes serial number B142240 and above have cursor damping circuit built in.
CORRECTION 3: Remove cursor damping board from modification procedure.

NOTE: All VT01 storage scopes, serial #B142240 and above, use latest revision prints. To modify VT01 storage scope below serial #B142240, use revision "A" prints.
In-plant effectivity – retrofit immediately
Field Effectivity – retrofit VT01's as required
(Time To Install And Test 1.5 Hours.) (Kit Contents – FCO/Prints and Parts)

VT01-00007 **CODE: P**
MAY-71 – CORRECTION 1: Change part number of Item 1 from 54-09152 to 54-09154.
PROBLEM 2: Tektronix changed pin assignments of a ground signal from pin "L" to pin "P".
CORRECTION 2: Change Wire Table to reflect proper pin assignment.
In-plant effectivity – documentation change only

VT05-00045 CODE: M
NOV-71 - PROBLEM: Assembly needs adjustment.
CORRECTION: Provide slots for positioning.
In-plant effectivity -03 rework immediatly

VT05-00046 CODE: P ML: H
DEC-71 - PROBLEM: Errors in prints and keyboard vendor change.
CORRECTION: Correct prints and replace keyboad drawings D-CS-3010166-0-0 and C-CS-3010166-1-0 with D-CS-5409917-0-1.
In-plant effectivity -06 documentation change only

VT05-00047 CODE: M
FEB-72 - PROBLEM: Production problems with 80% gloss paint.
CORRECTION: Change to 9200150-68.
In-plant effectivity -03 rework immediately

VT05-00048 CODE: M ML: J
FEB-72 - PROBLEM: Present fan in VT05, #1205033-02, is too noisy.
CORRECTION: Exchange with quieter fan #1209942-01.
In-plant effectivity -03 rework immediatly

VT05-00049 CODE: M
MAR-72 - PROBLEM: Production problem at assembly of Southco insert, item #6, into item #2 after spot welding.
CORRECTION: Assemble insert before spot welding.
In-plant effectivity -02 phase in

VT05-00050 CODE: P ML: K
APR-72 - PROBLEM 1: Part number 54-09917-0-1 is being replaced with #54-09945-0-1 which has higher yields. Part number 30-10166-0-1 is a vendor bought keyboard which lacks improvements that have been made on #54-09945-1.
CORRECTION 1: Let the VT05 documentation show the use of the LK01-0 as the keyboard. LK01-0 offers 54-09945 or 30-10166 at scheduler's option.
PROBLEM 2: VT05 documentation does not include the M7004.
CORRECTION 2: Add the M7004 module prints to VT05 doucmentation.
In-plant effectivity -Documentation change only

VT05-00051 CODE: P
MAY-72 - PROBLEM: Incoming inspection procedures are not referenced on part drawings.
CORRECTION: Reference incoming inspection procedures on part drawings. Add note to each part drawing as follows: "for incoming inspection procedure refer to (blank . (add appropriate procedure) ".
In-plant effectivity -06 documentation correction

VT05-00052 CODE: D
MAY-72 - PROBLEM: Baud rate switch on VT05 back panel wired for split speed operation in such a way that speeds on switch are in a different order than indicated selection.
CORRECTION: Modify wiring on baud rate select switch.
In-plant effectivity -03 rework immediately

VT05-00053 CODE: M
MAY-72 - CORRECTION: Reduce the width of the rocker switch bracket to eliminate interference between the small keyboard and the bracket.
In-plant effectivity -03 rework immediately

VT05-C0054 CODE: F
JUN-72 - PROBLEM: VT05-A's shipped previous to july 1972 will not operate above 300 baud.
CORRECTION: Convert VT05-A to VT05-B capable of operation through 2400 baud.

NOTE 1: Field implementation details from ECO VT05-00052 are included in this FCO. NOTE 2: See correction supplement FCO VT05-C054A.
In-plant effectivity -None
Field effectivity -All VT05-A to be converted to VT05-B
t ime To Install And Test 2.6 Hours.) (Documentation $ 10.00 , Parts 200.00 , DEC Labor $ 60.00) (Kit Contents -FCO/Prints And Parts) FCO M7001-D0005 and supplement VT05-C054A will also be included in the kit..

VT05-0054A CODE: F
AUG-72 - PROBLEM: FCO VT05-C0054 for VT05-A to VT05-B conversion not properly documented.
CORRECTION: Add necessary documentation and parts. Correct errors in figure 1 of the ECO.
In-plant effectivity -Unchanged
Field effectivity -Unchanged
(This FCO Is No Charge To Customer)

VT05-00055 CODE: M
JUL-72 - PROBLEM: Present part does not meet UL approval because 5/32 inch diameter holes are too large.
CORRECTION : Change raw material, perforated metal, from 5/32 inch diameter holes on 3/16 inch centers, to 5/64 inch diameter holes on 1/8 inch centers, staggered.
In-plant effectivity -02 phase-in

VT05-00056 CODE: P ML: L
JUL-72 - CORRECTION 1: Make changes and additions to engineering specifications.
CORRECTION 2: Update other documentation.
In-plant effectivity -Documentation changes only

VT05-00057 CODE: P ML: M
JUL-72 - CORRECTION: Correct revisions of ML drawing and prints.
In-plant effectivity -Documentation change only

VT05-00058 CODE: M
JUL-72 - PROBLEM: Tolerance buildup, large keyboard bracket is incorrect.
CORRECTION: Tightening tolerance between holes.
In-plant effectivity -02 phase-in

VT05-00059 CODE: P
JUL-72 - CORRECTION 1: Add key cap types for the cursor board.
PROBLEM 2: Incorrect part number.
CORRECTION 2: Item #43 is 23-00043-01 should be 21-11047.
PROBLEM 3: Tolerance change required by vendor.
CORRECTION 3: Tolerance change.
In-plant effectivity -Documentation change only

VT05-00060 CODE: M ML: N
SEPTEMBER-72 - PROBLEM 1: Aluminum base, #74-03566, is more costly than plastic base, #12-10913.
CORRECTION 1: Change documents to reflect plastic base instead of aluminum. Aluminum base cheaper with decal also.
PROBLEM 2: Plastic base easier to buy without screened printing indicating TV control functions.
CORRECTION 2: Remove screened printing detail from plastic base drawing and add decal, #36-11183, that replaces screened printing.
In-plant effectivity - 02 phase-in

VT05-00061 CODE: P ML: P
NOVEMBER-72 – PROBLEM 1: Parts List for keyboard #54-09945 is not included in the print set.
CORRECTION 1: Add drawings A-PL-5409945-0-0 and D-AD-5410224-0-0.
PROBLEM 2: New vendor schematic for display module #30-10326 is not included in the print set.
CORRECTION 2: Add drawing D-CS-3010326-0-3.
PROBLEM 3: Phasing of the VT05 line cord is not specified for 240 V, 50 Hz.
CORRECTION 3: Add note to drawing C-IA-7008432-0-0.
In-plant effectivity – 06 documentation change only

VT05-00062 CODE: M
NOVEMBER-72 – PROBLEM: Scope shield does not set squarely against cover face.
CORRECTION: Reduce size of scope shield by providing assembly clearance.
In-plant effectivity – 03 – Retrofit when production covers are available.

VT05-00063 CODE: M ML: R
DECEMBER-72 – PROBLEM: Keyboard not raised high enough when new style cover is installed.
CORRECTION: For larger keyboard, install shim plate between protective screen #74-08891 and brackets #74-08638-1 and #74-08638-2. For small keyboard, install shim plate between protective screen #74-08891 and bracket #74-08852.
In-plant effectivity – 03 – Shim to be used only when new style cover is used.

VT05-00064 CODE: P ML: S
JANUARY-73 – PROBLEM: Acceptance Procedure too long and not explicit enough.
CORRECTION: Shorten and rewrite sections of the document.
In-plant effectivity – 06 documentation change

VT05-00065 CODE: M
JANUARY-73 – CORRECTION: Elongate #74-08607 shipping bracket slot to permit alignment.
In-plant effectivity – 02 phase-in

VT05-00066 CODE: P ML: T
JANUARY-73 – CORRECTION: Add drawing D-CS-H733-1-1 to the print set. Add UL decal A-DC-7410785-0-0 to the Uni' Assembly drawing.
In-plant effectivity – 06 documentation change

VT05-00067 CODE: P
MARCH-73 – CORRECTION: Change documentation to refle revised production items on VT05 base, cover and interlock bracke
In-plant effectivity – 06 – Documentation change only

VT05-00068 CODE: D
MARCH-73 – CORRECTION: Remove connector P5 which is longer needed.
In-plant effectivity – phase-in

VT05-B0069 CODE: F
MAY-73 – PROBLEM: Random character errors caused by improper memory timing on the M7001 and M7002 modules.
CORRECTION: Install FCO's M7001-B0006 and M7002-B0003.

NOTE 1: No technical information is provided by this FCO; its only purpose is to provide a cross reference to the M7001 and M7002 FCO's.

NOTE 2: It is imperative that both the M7001 and M7002 modules be reworked simultaneously; otherwise, errors will develop with the first character of each line.
In-plant effectivity – rework all VT05's that have not yet gone through VT05 final acceptance. Caution: See Note #2. Rework all VT05's in the field per FCO VT05-B0069.
Field effectivity – install FCO's M7001-B0006 and M7002–B0003 the next time any service work is being done on a VT05.
(Time To Install And Test N/A)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – NF918 – FCO Only)

VT05-00070 CODE: P ML: U
JUNE-73 – PROBLEM: The VT05 Checkout Procedure is outdated.
CORRECTION: Update Checkout Procedure to include adjustment for Motorola Monitor.
In-plant effectivity – documentation change only

VT05-00071 CODE: P ML: V
SEPTEMBER-73 – CORRECTION: Update the VT05 print set.
In-plant effectivity – 06 documentation change only

VT05-00072 CODE: P ML: W
OCTOBER-73 – PROBLEM: Module hold-down foam is not listed on Parts List and Materials Control cannot keep track of usage.
CORRECTION: Generate a print for the foam and add it to the VT05 Parts List.
In-plant effectivity – documentation change only

VT05-E0073 CODE: F ML: Y
JANUARY-74 – PROBLEM: Earlier versions of the LK01 keyboard may be unreliable; current version is costly to build and to repair.
CORRECTION: Replace #54-09945 LK01 keyboard with #54-10541 LK01-R keyboard and #54-10224 cursor board with new #54-10613 cursor board. All boards, revision "E" and earlier, are directly replaceable by revision "F" and "G" boards without use of the new bracket and washers. If the LK01-R is to be used, the FCO parts kit must be installed. The LK01-R and the new cursor boards must be installed coincidentally.

NOTE: See continuation supplement VT05-E073A
In-plant effectivity – commencing November 1, 1973, with complete changeover by March 31, 1974
Field effectivity – retrofit VT05's as required
(Time To Install And Test 1.8 hours.) (Documentation $5.00, Parts $423.00)
The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate.
(Kit Contents – PF1182 – FCO/Prints and Parts)

VT05-E073A **CODE: F**
FEBRUARY-74 - CORRECTION: Additional parts are needed to convert from early model keyboards to the new model boards.
In-plant effectivity – unchanged

VT05-00074 **CODE: P** **ML: Z**
JANUARY-74 – CORRECTION: Add Packaging instruction A-PI-3700043-0-0 to Parts List.
In-plant effectivity – documentation change only

VT05-00045 CODE: M
NOV-71 - PROBLEM: Assembly needs adjustment.
CORRECTION: Provide slots for positioning.
In-plant effectivity -03 rework immediatly

VT05-00046 CODE: P ML: H
DEC-71 - PROBLEM: Errors in prints and keyboard vendor change.
CORRECTION: Correct prints and replace keyboad drawings D-CS-3010166-0-0 and C-CS-3010166-1-0 with D-CS-5409917-0-1.
In-plant effectivity -06 documentation change only

VT05-00047 CODE: M
FEB-72 - PROBLEM: Production problems with 80% gloss paint.
CORRECTION: Change to 9200150-68.
In-plant effectivity -03 rework immediately

VT05-00048 CODE: M ML: J
FEB-72 - PROBLEM: Present fan in VT05, #1205033-02, is too noisy.
CORRECTION: Exchange with quieter fan #1209942-01.
In-plant effectivity -03 rework immediatly

VT05-00049 CODE: M
MAR-72 - PROBLEM: Production problem at assembly of Southco insert, item #6, into item #2 after spot welding.
CORRECTION: Assemble insert before spot welding.
In-plant effectivity -02 phase in

VT05-00050 CODE: P ML: K
APR-72 - PROBLEM 1: Part number 54-09917-0-1 is being replaced with #54-09945-0-1 which has higher yields. Part number 30-10166-0-1 is a vendor bought keyboard which lacks improvements that have been made on #54-09945-1.
CORRECTION 1: Let the VT05 documentation show the use of the LK01-0 as the keyboard. LK01-0 offers 54-09945 or 30-10166 at scheduler's option.
PROBLEM 2: VT05 documentation does not include the M7004.
CORRECTION 2: Add the M7004 module prints to VT05 doucmentation.
In-plant effectivity -Documentation change only

VT05-00051 CODE: P
MAY-72 - PROBLEM: Incoming inspection procedures are not referenced on part drawings.
CORRECTION: Reference incoming inspection procedures on part drawings. Add note to each part drawing as follows: "for incoming inspection procedure refer to (blank . (add appropriate procedure) ".
In-plant effectivity -06 documentation correction

VT05-00052 CODE: D
MAY-72 - PROBLEM: Baud rate switch on VT05 back panel wired for split speed operation in such a way that speeds on switch are in a different order than indicated selection.
CORRECTION: Modify wiring on baud rate select switch.
In-plant effectivity -03 rework immediately

VT05-00053 CODE: M
MAY-72 - CORRECTION: Reduce the width of the rocker switch bracket to eliminate interference between the small keyboard and the bracket.
In-plant effectivity -03 rework immediately

VT05-C0054 CODE: F
JUN-72 - PROBLEM: VT05-A's shipped previous to july 1972 will not operate above 300 baud.
CORRECTION: Convert VT05-A to VT05-B capable of operation through 2400 baud.

NOTE 1: Field implementation details from ECO VT05-00052 are included in this FCO. NOTE 2: See correction supplement FCO VT05-C054A.
In-plant effectivity -None
Field effectivity -All VT05-A to be converted to VT05-B
t ime To Install And Test 2.6 Hours.) (Documentation $ 10.00 , Parts 200.00 , DEC Labor $ 60.00) (Kit Contents -FCO/Prints And Parts) FCO M7001-D0005 and supplement VT05-C054A will also be included in the kit..

VT05-0054A CODE: F
AUG-72 - PROBLEM: FCO VT05-C0054 for VT05-A to VT05-B conversion not properly documented.
CORRECTION: Add necessary documentation and parts. Correct errors in figure 1 of the ECO.
In-plant effectivity -Unchanged
Field effectivity -Unchanged
(This FCO Is No Charge To Customer)

VT05-00055 CODE: M
JUL-72 - PROBLEM: Present part does not meet UL approval because 5/32 inch diameter holes are too large.
CORRECTION : Change raw material, perforated metal, from 5/32 inch diameter holes on 3/16 inch centers, to 5/64 inch diameter holes on 1/8 inch centers, staggered.
In-plant effectivity -02 phase-in

VT05-00056 CODE: P ML: L
JUL-72 - CORRECTION 1: Make changes and additions to engineering specifications.
CORRECTION 2: Update other documentation.
In-plant effectivity -Documentation changes only

VT05-00057 CODE: P ML: M
JUL-72 - CORRECTION: Correct revisions of ML drawing and prints.
In-plant effectivity -Documentation change only

VT05-00058 CODE: M
JUL-72 - PROBLEM: Tolerance buildup, large keyboard bracket is incorrect.
CORRECTION: Tightening tolerance between holes.
In-plant effectivity -02 phase-in

VT05-00059 CODE: P
JUL-72 - CORRECTION 1: Add key cap types for the cursor board.
PROBLEM 2: Incorrect part number.
CORRECTION 2: Item #43 is 23-00043-01 should be 21-11047.
PROBLEM 3: Tolerance change required by vendor.
CORRECTION 3: Tolerance change.
In-plant effectivity -Documentation change only

VT05-00060 CODE: M ML: N
SEPTEMBER-72 – PROBLEM 1: Aluminum base, #74-03566, is more costly than plastic base, #12-10913.
CORRECTION 1: Change documents to reflect plastic base instead of aluminum. Aluminum base cheaper with decal also.
PROBLEM 2: Plastic base easier to buy without screened printing indicating TV control functions.
CORRECTION 2: Remove screened printing detail from plastic base drawing and add decal, #36-11183, that replaces screened printing.
In-plant effectivity – 02 phase-in

VT05-E073A **CODE: F**
FEBRUARY-74 - CORRECTION: Additional parts are needed to convert from early model keyboards to the new model boards.
In-plant effectivity – unchanged

VT05-00074 **CODE: P** **ML: Z**
JANUARY-74 – CORRECTION: Add Packaging instruction A-PI-3700043-0-0 to Parts List.
In-plant effectivity – documentation change only

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Engineering Change Order Log
DEC-O-LOG

VT8-E

Video Display

PROCESSOR TYPE PDP-8/E

VT8E-00001 CODE: P DD: A
FEB-73 - PROBLEM 1: Printer IOT's 4 and 6 do not clear the AC as stated in the VT8-E specifications, A-SP-VT8-E-3.
CORRECTION 1: Delete the phrase CLEAR AC from printer IOT's 4 and 6, PNLP and PNPC , sheet #26.
PROBLEM 2: Control bits of aplha-numeric data word are defined incorrectly by the Engineering Specification.
CORRECTION 2: Interchange the definitions of CB1, CB2, CB3 and CB4.
In-plant effectivity -06 documentation change only

VT8E-00002 CODE: D DD: B
MAR-73 - PROBLEM: There is no product identity for the VT8-E.
CORRECTION: Create new logo, A-SS-7408585-0-4, for the Scope Shield.
In-plant effectivity -03 * -Use new logo on 7009044-0-0, VT8-E Video Terminal, on all systems shipped during the month of June and after.

VT8E-C0003 CODE: DF
APR-73 - PROBLEM: The two separate cables in this assembly are to be replaced by a single woven cable. MATE-N-LOCK connector J1 is not compatible with etch revision "C " M8336's.
CORRECTION: Replace coax cable #91-07530 and cable #91-07687 with woven cable #91-07759. Replace MATE-N-LOCK connector #12-10822-10 with 40 pin housing #12-10918-15.
In-plant effectivity -Use new cable on all VT8-E's built after May 1, 1973.
Field effectivity -Retrofit all VT8-E's shipped under waiver
(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints And Parts)

VT8E-00004 CODE: D DD: C
JUN-73 - PROBLEM 1: An extra H851 Edge Connector should be supplied with VT8-E's so that, when more than one VT8-E is placed on a system, they can be interconnected.
CORRECTION 1: Add one H851 Edge Connector to the Accessory List.
PROBLEM 2: Customer print set is not called out on the Accessory List.
CORRECTION 2: Add one customer print set to the Accessory List.
PROBLEM 3: Software kit should be called out by kit number.
CORRECTION 3: On the Accessory List, call software kit by the number LIBKIT-08-VT8-EA-A-K.
PROBLEM 4: When FCO's VT8E-C0003 and M8336-B0002 were implemented, the Unit Assembly drawing was affected but not updated.
CORRECTION 4: Update drawing D-UA-VT8-E as required.
PROBLEM 5: Thermal test portion of VT8-E Checkout Procedure has been found to be unnecessary.
CORRECTION 5: Shorten heat test to twelve hours and eliminate cold test.
PROBLEM 6: Vibration test portion of VT8-E Checkout Procedure has been found to be unnecessary.
CORRECTION 6: Eliminate vibration test.
PROBLEM 7: Module Test Procedures for VT8-E control modules are not listed on the Drawing Directory.
CORRECTION 7: List Module Test Procedures on Drawing Directory.
PROBLEM 8: Module cable C-IA-7009054 is no longer part of the M8336.
CORRECTION 8: Remove module cable C-IA-7009054 from the Drawing Directory.
In-plant effectivity -06 -Documentation/design change

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Engineering Change Order Log
DEC-O-LOG

VW01

Writing Tablet

PROCESSOR TYPE PDP-8, PDP-12, PDP-15

VW01-00001 CODE: P
APR-71 - CORRECTION: Changed VW01 multiplex option designation numbers to eliminate confusion.

NOTE: This ECO creates VW01-MA ML revision "A " .
In-plant effectivity -06 documentation change only

VW01-00002 CODE: P ML: A
APR-71 - CORRECTION: Add component box module prints to VW01 print set.
In-plant effectivity -06 documentation change only

VW01-00003 CODE: D ML: B
APR-71 - PROBLEM 1: Insufficient power to logic rack.
CORRECTION 1: Add H716 Power Supply to VW01 logic rack.
PROBLEM 2: Lack of universal retainer block.
CORRECTION 2: Add universal retainer block to logic rack.
PROBLEM 3: Hold down bar too long.
CORRECTION 3: Incorporated smaller hold down bar.
In-plant effectivity -Rework immediately

VW01-00004 CODE: D ML: C
APR-71 - PROBLEM 1: Impossible to get to left/right switch on component box when mounted on VT04 cabinet.
CORRECTION 1: Moved component box from side to front of VT04 cabinet.
PROBLEM 2: PDP-9/15 I/O cables shown wrong.
CORRECTION 2: Reverse I/O cables.
In-plant effectivity -06 documentation/design change

VW01-00005 CODE: P ML: D
APR-71 - PROBLEM: VW01-A Block Schematics do not match the Wire List.
CORRECTION: Clean up VW01-A Block Schematics and Module Utilization drawing.

NOTE: This ECO affects VW01-AN and VW01-AP documentation.
In-plant effectivity -06 documentation change only

VW01-00006 CODE: P ML: D
APR-71 - PROBLEM: VW01-B Block Schematics do not match the Wire List.
CORRECTION: Clean up VW01-B Block Schematics and Module Utilization drawing.

NOTE: This ECO affects VW01-BN and VW01-BP documentation.
In-plant effectivity -06 documentation change only

VW01-00007 CODE: D ML: E WL: A
APR-71 - CORRECTION: Updated prints and the Wire List.
In-plant effectivity -03 documentation/design change

VW01-00008 CODE: P ML: F
APR-71 - CORRECTION: Updated vendor prints.
In-plant effectivity -06 documentation change only

VW01-00009 CODE: P ML: H
MAY-71 - CORRECTION: Incorporate Engineering Specification A-SP-VW01-0-4 in print set.
In-plant effectivity -06 documentation change only

VW01-00010 CODE: P ML: J
MAY-71 - CORRECTION 1: Incorporated VW01 Acceptance Procedure in VW01 print set.
CORRECTION 2: Updated VW01 Engineering Specification.
CORRECTION 3: Added calibration template to Unit Assembly drawing and Drawing Index.
In-plant effectivity -06 documentation change only

VW01-00011 CODE: D ML: K
JUN-71 - PROBLEM: Marx Bank Module, component box, had many failures.
CORRECTION: Incorporate redesigned Marx Bank Module in all component boxes.
In-plant effectivity -03 retrofit immediately

VW01-00012 CODE: P ML: L
SEP-71 - PROBLEM 1: Extra resistor in External Component Table on drawing D-AD-7007105-0-0.
CORRECTION 1: Deleted resistor from interface cable External Component Table.
CORRECTION 2: Documented change from 115V 60 Hz to 220V 50 Hz.
In-plant effectivity -06 documentation change only

VW01-00013 CODE: M ML: M
OCT-71 - CORRECTION 1: Incorporate new hold-down bar of 8.25 inches length, #74-08339-11, print C-IA-7408339-0-0.
CORRECTION 2: Correctly document hold-down bar variations for VW01 logic assemblies.
In-plant effectivity -Retrofit immediately

VW01-C0014 CODE: DF ML: N WL: B
NOV-71 - PROBLEM 1: The PDP-9/15 I/O cables going into and out of the VW01 do not conform to current conventions.
CORRECTION 1: Reversed PDP-9/15 I/O cables to conform.
PROBLEM 2: Wires missing from VW01 logic panels.
CORRECTION 2: Update Wire List to include missing wires.
PROBLEM 3: Logic gates C11P2, C11S2, C11V2 should be changed to logic gates C12P2, C12S2, C12V2.
CORRECTION 3: Incorporated this change in Wire List and print set.

NOTE: Correction #1 is the only one that should be retrofitted in the field. Corrections #2 and #3 will be incorporated into logic panels in production.
In-plant effectivity -03 retrofit immediately
Field effectivity -Retrofit all VW01's to correction #1 only
(Time To Install And Test .5 Hour.) (Kit Contents -FCO Only)

VW01-00015 CODE: P ML: P
FEB-73 - CORRECTION: Incorporate Interconnection Table on print for M401 clock frequencies between 1 and 200 Hz.
In-plant effectivity -06 documentation change only

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Engineering Change Order Log
DEC-O-LOG

W684

VR14 INTENSITY CONTROL

PROCESSOR TYPE PDP-8 & 11 FAMILIES, PDP-12 & 15

W684-00001 **CODE: D** **CS: B** **ETCH: C**
NOVEMBER-72 – PROBLEM: The **INT 1** run is too close to the +80V lead.
CORRECTION: Relayout board; run **INT 1** to pin K, run -80V to Pin S.
In-plant effectivity – use new etch revision "C" boards when available.

W684-00002 **CODE: D** **CS: C** **ETCH: D**
DECEMBER-72 – PROBLEM 1: Pin "V" is too close to the +80V cathode signal.
CORRECTION 1: Move signal on Pin "V" to Pin "L".
PROBLEM 2: Cathode signal does not turn off fast enough.
CORRECTION 2: Change resistor R5, 1K, 1/4W, to two 270 ohm, 1/4W, 5% resistors, and add a D670 diode.
In-plant effectivity – phase-in new etch board as soon as possible.

W684-00003 **CODE: D** **CS: D** **ETCH: E**
JANUARY-73 – PROBLEM: Contrast in intensity levels varies greatly in VR14 scopes.
CORRECTION: Change resistor R19, 7K, 1/8W, 1% to a 20K ohm potentiometer in reworking CS revision "B" and "C" boards only. Relayout new etch revision "E" board at CS revision "D".
In-plant effectivity – rework CS revision "B" and "C" boards only; use new etch "E" boards when available.

W684-A0004 **CODE: F** **CS: E** **ETCH: F**
OCTOBER-73 – PROBLEM: CRT arcing damages G836 and W684 modules which causes phosphor burning in the CRT.
CORRECTION: Add ground clamping diode on grid pin and current limiting resistor on collector of Q3. This FCO will not correct destruction of the W684 without proper arc suppression in the CRT gun area. This FCO should be implemented in conjunction with FCO's G836-A0008 and 7009357-A0001 for complete arc suppression.

NOTE: This FCO is superseded by FCO W684-A0005 which cancels rework and orders module exchange.
In-plant effectivity – update all existing models.
Field effectivity – rework all W684's in all VR14L's, GT40's
(Time To Install And Test 1.5 Hours.) (Kit Contents – PF1081 – FCO/Prints and Parts)

W684-A0005 **CODE: F** **CS: F** **ETCH: H**
DECEMBER-73 – CORRECTION: Provides changes to cathode circuitry to eliminate arcing at cathode. This FCO supersedes FCO W684-A0004.

NOTE 1: This FCO must be installed with FCO's G836-A0008, 7009357-A0001, and 7009357-A0002.

NOTE 2: See continuation supplement FCO's W684-A005A and W684-A005B.

NOTE 3: Field personnel must contact Brian O'Donnell in Maynard, telephone extension 5946, before ordering parts kit for this FCO, so that allocation priorities may be established.
In-plant effectivity – rework all etch revision "B" and "E" boards when parts are available.
Field effectivity – exchange W684's in all VR14-L's with a history of arcing.
(Time To Install And Test .5 Hour.) (Kit Contents – PF1138 – FCO/Prints and Parts)

W684-A005A **CODE: F**
DECEMBER-73 – PROBLEM: Wires added in retrofitting boards cause potential 20 MHz oscillation.
CORRECTION: Add ferrite bead over cathode lead of D4 to prevent oscillating.
In-plant effectivity – unchanged
Field effectivity – unchanged

W684-A005B **CODE: F**
JANUARY-74 – PROBLEM: FCO's W684-A0004, W684-A0005, and W684-A005A did not give Maynard Field Service control of distribution of reworked modules.
CORRECTION: Brian O'Donnell of Maynard Field Service will have control of distribution of reworked W684 modules to be replaced in the field.
In-plant effectivity – unchanged
Field effectivity – unchanged

W684-00006 **CODE: D** **CS: H**
JANUARY-74 – PROBLEM: Ratio of contrast adjustability is not sufficient.
CORRECTION: Change value of contrast potentiometer R29 from 5K to 20K ohms on etch revision "E" and "H" boards only.
In-plant effectivity – rework all etch revision "E" and "H" boards in-plant. ECO must be installed in all units with "E" and "H" boards.

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E C DEC-O-LOG Engineering Change Order Log

W706

Teletype Receiver Module

PROCESSOR TYPE PDP-8 and DECsystem-10

W706-00001 CODE: D CS: B
JUL-68 - PROBLEM: SKIP PULSE propogation to output line too slow for PDP-10.
CORRECTION: Replace resistor R34 with a D668 diode and change transistor Q2 from a DEC 6534B to a DEC 6B. Also, obsolete ECO #6204 which created an earlier revision "B " that was never built.
In-plant effectivity -Phase-in immediately

W706-00002 CODE: D CS: B
MAY-69 - PROBLEM: Cannot clear **KEYBOARD FLAG** without setting **READER RUN** .
CORRECTION: Provide jumper which allows clearing of flag with **READER STROBE** . Change E18 to provide gates.
In-plant effectivity -Phase-in

W706-B0003 CODE: F CS: F
MAY-71 - PROBLEM 1: FLAG STROBE output must be fast for DC10-B operation.
CORRECTION 1: Change resistor R34 to a D668 diode (D4) and change transistor Q2 from a DEC 6534B to a DEC 6B. (modules with DEC 2894-3B do not require rework)
PROBLEM 2: Revision "B " Circuit Schematic has some minor inconsistencies as compared to the module as built.
CORRECTION 2: Revise Circuit Schematic accordingly. (Field Service has been making this change for 2 1/2 years)
In-plant effectivity -Rework immediately
Field effectivity -Retrofit all modules in field not already modified.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $ 3.55 , DEC Labor $ 13.00) (Kit Contents -FCO/Prints And Parts)

W706-C0004 CODE: F CS: H
MAY-71 - PROBLEM: W706 etch revision "D " has -15V on AB and BB tied together; cannot margin -15V on a single logic row.
CORRECTION: Remove etch connection to pin BB . Revise Circuit Schematic to reflect change.
In-plant effectivity -Rework immediately
Field effectivity -Rework all etch revision "D " W706's
(Time To Install And Test .2 Hour.) (Documentation $ 5.00 , Parts None , DEC Labor $ 6.00) (Kit Contents -FCO/Prints)

W706-B0005 CODE: F CS: J
NOV-72 - PROBLEM: Transistor DEC-6B has insufficient margins in a W706 used in a DC10.
CORRECTION: Use a DEC 2894-3B transistor which has a higher maximum saturation voltage rating.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all W706's in DC10-B.
(Time To Install And Test .2 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

5408308

PC04/PC05 Power Regulator Board

PROCESSOR TYPE All

5408308-B0001 CODE: F CS: A ETCH: B
NOV-69 - PROBLEM: Surge current is greater than the rating of the MDA 960-3 bridge, DEC #11-09366.
CORRECTION: Add 1/10 ohm resistor, DEC #13-05872.

NOTE: See correction supplement FCO 5408308-C0003.
In-plant effectivity -Rework all 5408308's
Field effectivity -Rework all 5408308's as required
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $. 80 , DEC Labor $ 20.00) (Kit Contents -FCO And Parts) Supplement FCO 5408308-C0003 will also be included in the kit.

5408308-B0002 CODE: F CS: B ETCH: C
FEB-70 - PROBLEM 1: Noise on +5 volt line.
CORRECTION 1: Add a 39 mfd, 10V capacitor to the +5V line; add a 47 mfd, 20V capacitor to the -15V line.
CORRECTION 2: Install the added capacitors on the PC04 and PC05 logics until the new etch boards are available.
CORRECTION 3: Retrofit in the field when making service call if a problem exists in the +5V or -15 VDC line.
CORRECTION 4: If retrofitting is required in the field, use terminal points with capacitors.

NOTE: See correction supplement FCO 5408308-C0003.
In-plant effectivity -Rework all 5408308's
Field effectivity -All 5408308's in PC04's and PC05's as required.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $ 1.65 , DEC Labor $ 20.00) (Kit Contents -FCO And Parts) Supplement FCO 5408308-C0003 will also be included in the kit.

5408308-C0003 CODE: F CS: C ETCH: D
MAR-70 - PROBLEM 1: Low +5 volt line output, questionable -15 volt Zener bias.
CORRECTION 1: Change Zener from #11-02451-00, 6.2 volts, to #11-02451-01, 6.8 volts.. Change resistor R1 from #13-00260, 180 ohms 1/2 watt to #13-00225, 82 ohms 1/2 watt. Change resistor R4 from #13-00260, 180 ohms 1/2 watt to #13-00225, 83 ohms 1/2 watt.
PROBLEM 2: Revision "B " and "C " etch and component layout not compatible with next higher subassembly.
CORRECTION 2: Obsolete "B " and "C " revision artwork and reference this FCO from revision "A " artwork.

NOTE: See continuation supplement FCO 5408308-C0004.
In-plant effectivity -Rework immediately
Field effectivity -Rework all 5408308's when problem exists or if +5V line is less than 4.5 volts.
(Time To Install And Test .3 Hour.) (Documentation $ 5.00 , Parts $. 75 , DEC Labor $ 15.00) (Kit Contents -FCO/Prints And Parts) Supplement FCO 5408308-C0004 will also be included in the kit.

5408308-C0004 CODE: F
JUN-70 - PROBLEM: Incomplete Field Service information on FCO 5408308-C0003.
CORRECTION: Add a correction 3 to FCO 5408308-C0003 as follows: See attached Field Service rework procedure for power regulator wiring and fuse value change of F2 from 2A to 4A.
In-plant effectivity -None
Field effectivity -Unchanged
(Time To Install And Test N/A)
(Kit Contents -FCO/Prints)

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EC DEC-O-LOG Engineering Change Order Log

5409262

Control Board A2 for H724

PROCESSOR TYPE PDP-8/E

5409262-00007 CODE: D
FEB-72 - PROBLEM: **POWER OK** is too low for specifications.
CORRECTION: Change values of resistor R32 and diode VR7 to bring **POWER OK** up to specifications.
In-plant effectivity -03 retrofit all boards which have FCO 5409262-C0006 installed as of 2/7/72.

5409262-00008 CODE: D
MAR-72 - PROBLEM: Etch revision "B " of #50-09261, the 5409262 etched board, was over produced and it is impractical to continue using it as we now have etch revision "F ".
CORRECTION: Scrap all etch revision "B " raw boards effective 2/29/72. Do not build any more etch revision "B " boards.
In-plant effectivity -09 scrap immediately.

5409262-D0009 CODE: F
NOV-72 - PROBLEM: +5 volts on the H724 Power Supply cannot be adjusted high enough to compensate for cable loss at maximum rated load.
CORRECTION: Change resistor R20 from 1.21K ohms to 825 ohms and potentiometer R21 to 1K ohms.

NOTE: This FCO creates H724 and H724-A CS revisions "J ".
In-plant effectivity -03 rework immediately
Field effectivity -Rework all 5409262's if unable to adjust H724 up to +5V.
(Time To Install And Test 1.5 Hours.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

5409503

+5 Volt Regulator (H734 and H743), (RK05 and RS64)

PROCESSOR TYPE PDP-8 Family and PDP-11 Family

5409503-00001 CODE: D CS: D ETCH: D
JUL-71 - PROBLEM 1: Schematic does not include heat sink circuitry.
CORRECTION 1: Add heat sink circuitry.
PROBLEM 2: Voltage regulation portion re-evaluated for worst-case conditions, found to be operating too close to tolerances.
CORRECTION 2: Change components for optimum operation.

NOTE: See correction supplement ECO 5409503-00002.
In-plant effectivity -03 rework immediately

5409503-00002 CODE: D
SEP-71 - PROBLEM: Inconsistency between resistor R5 and R10 on all revision "D " prints of 5409503.
CORRECTION: Resistor R5 should be 270 ohms, 1/4 watt, 5%, part number 13-01972; R10 should be 4.7 ohms, 1/2 watt, 5%, part number 13-00445.

NOTE: This is a supplement to ECO 5409503-00001.
In-plant effectivity -03 rework immediately

5409503-00003 CODE: D CS: E
OCT-71 - PROBLEM: Components' tolerances allow faulty circuit operation.
CORRECTION: Change values of capacitor C4, diode D1, and resistor R17.
In-plant effectivity -03 rework immediately

5409503-B0004 CODE: F CS: F
FEB-72 - PROBLEM 1: Crowbar trigger problem causes loss of +5 volts.
CORRECTION 1: Cut one etch, add one wire, change capacitor C9 .
PROBLEM 2: SCR power dissipation problem caused burned printed circuit boards.
CORRECTION 2: Use stud mount SCR (Q4) on new or reworked heat sinks, #53-09543.

NOTE 1: If problem 2 occurs in the field, replace the board with an in-plant reworked board.

NOTE 2: See correction supplement FCO 5409503-A0005.
In-plant effectivity -Rework immediately
Field effectivity -Rework all 5409503's on RS64's with H737 Power Supplies.
(Time To Install And Test .6 Hour.)
(Kit Contents -FCO/Prints And Parts)

5409503-A0005 CODE: F CS: H
AUG-72 - PROBLEM: Break-in effectivity on FCO 5409503-B0004 must take place immediately.
CORRECTION: Retrofit all boards up to and including etch revision "D ". Advance the revision level of all prints in order to identify those boards that were reworked and those that were not.

NOTE: In an emergency situation, a board can be reworked in the field using one 15-05867 SCR 2N4441 and one #90-08081 screw. All spare inventory boards should be returned to Field Service Logistics Maynard for reworking. Use RA #H2036.
In-plant effectivity -03 rework immediately
Field effectivity -Exchange all 5409503's, etch revision "D " and earlier.
(Time To Install And Test 1.0 Hour.)
(Kit Contents -FCO/Prints And Parts)

5409503-B0006 CODE: F CS: J
OCT-72 - PROBLEM: The +5 volt overvoltage protector (SCR) triggers on noise which reduces the +5 volt output to +1 volt. This disables the disk drive. The protector can only be reset by turning off disk drive and system power.
CORRECTION: Replace SCR circuit with a power Zener diode and remove SCR gate firing circuit.

NOTE: See correction supplement FCO 5409503-B006A.
In-plant effectivity -03 rework immediately
Field effectivity -Rework all 5409503's in RK05 and RS64 as required.
(Time To Install And Test 1.0 Hour.)
(Kit Contents -FCO/Prints And Parts) Correction supplement FCO 5409503-B006A will also be included in the kit.

5409503-B006A CODE: F
OCT-72 - PROBLEM: The wording of the rework instructions in steps 4 and 5 for the revision "E " etch board is causing some confusion.
CORRECTION: Clarify the wording and replace those instructions with the ones given in this supplement.
In-plant effectivity -Unchanged
Field effectivity -Unchanged

5409503-C0007 CODE: F CS: K ETCH: F
JAN-73 - PROBLEM: Occasionally the fuse, F1, blows without an apparent cause. This is the result of poor transient response to VCC changes on some 723 regulator chips. Thus, control and stability of the output is lost momentarily, allowing excessive current to pass through the fuse.
CORRECTION: Add VCC bypass filtering to the 733 chip's power inputs to prevent any possible oscillations and add some hysterisis to the current limiter chip, E1, to stabilize its operation.
In-plant effectivity -03 retrofit only 5409503's showing the problem until April 2, 1973. All modules made after that date must have this FCO.
Field effectivity -Rework all 5409503's as required.
(Time To Install And Test .5 Hour.)
(Kit Contents -FCO/Prints And Parts)

5409503-00008 CODE: D CS: L
APR-73 - PROBLEM: Thickness of fiber washer is such that excessive strain is being placed on etch at point where MATE-N-LOCK pins are soldered to printed circuit board.
CORRECTION: Replace fiber washer #90-06693 with thinner nylon, #90-06707.
In-plant effectivity -03 all new units in build, effective 4/27/73. Retrofit units displaying symptoms.

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DEC-O-LOG Engineering Change Order Log

5409698

RK05 Indicator Panel

PROCESSOR TYPE All

5409698-00001 CODE: D CS: B ETCH: C
DEC-71 - PROBLEM: Layout of etch hinders production of module.
CORRECTION: Reduce size of pads on #2 side for "Y " and "W " holes so that drill bit completely drills out the pads.
In-plant effectivity -02 phase-in

5409698-D0002 CODE: F CS: C ETCH: D
AUG-72 - PROBLEM: Accidental actuation of the front panel ON/OFF switch to OFF , while in system operation, causes power to be removed from the transmitter/receiver bus terminators if the drive is the last unit on a multi-drive system.
CORRECTION: Remove the power ON/OFF switch.
In-plant effectivity -Break-in when front panel without switch hole is available. If retrofit, delete the switch button, bend back switch button tabs, and set S1 to ON position.
Field effectivity -Exchange 5409698's in RK05's with FCO RK05-C0019 installed.
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts $ 6.00 , DEC Labor $ 14.00) (Kit Contents -FCO/Prints And Parts)

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EC DEC-O-LOG Engineering Change Order Log

5409728

H740 Regulator Board

PROCESSOR TYPE PDP-8 Family, PDP-12, PDP-11 Family

5409728-00007 CODE: D CS: H
NOV-72 - PROBLEM: Drilling of printed circuit board is too expensive.
CORRECTION: Reduce number of drill sizes and thereby reduce the number of drill and tape changes.
In-plant effectivity -02 phase-in

5409728-00008 CODE: D CS: J ETCH: E
DEC-72 - PROBLEM 1: Transistor Q1 inadequate in heat.
CORRECTION 1: Change Q1 from MJ900, #15-10712, to MJ2500, #15-11282.
PROBLEM 2: Voltage rating of capacitor C16 inadequate.
CORRECTION 2: Change capacitor C16 from 47 ufd 20V, #10-04814, to 22 ufd 35V, #10-02433.
PROBLEM 3: Crowbar may trip due to noise.
CORRECTION 3: Change capacitors C8 and C15 from 0.01 ufd 100V, #10-01610, to 0.22 ufd 50V, #10-10274.
PROBLEM 4: Diode D13 breaks due to physical placement.
CORRECTION 4: Relayout etch and relocate D13.

NOTE: See correction supplement ECO 5409728-0008A.
In-plant effectivity -02 phase-in before March 1, 1973.

5409728-0008A CODE: D
FEB-73 - PROBLEM: Parts for implementation of ECO 5409728-00008 will not be available by break-in date of March 1, 1973
CORRECTION: Change break-in date from March 1, 1973 to March 19, 1973.
In-plant effectivity -Delayed

5409728-00009 CODE: P CS: C1
JAN-73 - PROBLEM: No documentation exists for rework ECO's 5409728-00006, 5409728-0006A and 5409728-0006B.
CORRECTION: Generate new CS revision "C1 " reflecting change in diode D12 from #11-02808, 5.6V 5%, to #11-11205, 5.7V 2%.
In-plant effectivity -06 documentation change only

5409728-C0010 CODE: F CS: K
MAR-73 - PROBLEM: Capacitor holder, Item #73, hold down screws loosen during vibration test. Capacitors, Item #15, rub and cause wear on etch board.
CORRECTION: Add 1/8 inch spacer between capacitor holder and etch board. Add 1/8 inch thick by 1/2 inch wide by 1 inch long adhesive backed foam to each end of the capacitors.

NOTE: See continuation supplement FCO 5409728-C010A and correction supplement FCO 5409728-C010B.
In-plant effectivity -02 phase-in immediately
Field effectivity -Rework all #54-09728 and #54-09728-YA's
(Time To Install And Test 2.0 Hours.) (Kit Contents -FCO/Prints And Parts)

5409728-C010A CODE: F
APR-73 - PROBLEM 1: No BREAK-IN DATE specified.
CORRECTION 1: Change BREAK-IN DATE to read "Phase-in to be completed by April 16, 1973.
PROBLEM 2: Incomplete " options affected "list.
CORRECTION 2: Update " options affected "listing.
In-plant effectivity -Phase-in delayed to April 16, 1973
Field effectivity -None

5409728-C010B CODE: F
MAY-73 - CORRECTION: Indicate that Field Service is affected by removing the " X "in the " NO "box and checking " YES "
In-plant effectivity -Unchanged
Field effectivity -Initiated

5409728-E0011 CODE: F CS: L
JUL-73 - PROBLEM 1: Excessive drift of +5V with temperature.
CORRECTION 1: Change PTC resistor R51 to a higher PPM ; change current limit resistor R41 to a lower value, from 0.025 ohms to 0.020 ohms.
PROBLEM 2: Three pin MATE-N-LOCK connector breaks off.
CORRECTION 2: Use new MATE-N-LOCK.

NOTE 1: All reworking will be done by the DEC depot. Field implementation will involve board exchange.

NOTE 2: See correction supplement FCO's 5409728-E011A, 5409728-E011B and 5409728-E011C.
In-plant effectivity -02 -Phase-in all units in-plant by September 1, 1973
Field effectivity -Exchange any 5409728's when symptoms are present.
(Time To Install And Test 1.5 Hours.) (Documentation $ 5.00 , Parts $ 75.00) The DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -F977 FCO/Prints And Parts)

5409728-E011A CODE: F
AUG-73 - PROBLEM: Parts availability will not allow phase-in by September 1, 1973.
CORRECTION: Change break-in to October 1, 1973.
In-plant effectivity -Phase-in to all units in-plant by October 1, 1973.
Field effectivity -Unchanged

5409728-E011B CODE: F
OCT-73 - PROBLEM: Parts not available for phase-in of FCO 5409728-E0011 by October 1, 1973 as ordered.
CORRECTION: Change break-in date to November 1, 1973.
In-plant effectivity -Delayed to November 1, 1973
Field effectivity -Unchanged

5409728-E011C CODE: F
NOV-73 - PROBLEM: Parts will not be available by BREAK-IN date specified in FCO 5409728-E011B.
CORRECTION: Change BREAK-IN date to December 1, 1973.
In-plant effectivity -Implement FCO 5409728-E0011 by December 1, 1973
Field effectivity -Unchanged

5409728-B0012 CODE: F CS: M
DEC-73 - PROBLEM 1: Excessive heat at capacitor C7 and choke L1 circuit contact points caused by high current, causes G10 PCB material to compress and loosen bolted connections.
CORRECTION 1: Provide straps to conduct high current and radiate heat. Add flat washers between screw head and printed circuit board to increase contact area and reduce pressure.
PROBLEM 2: Tri-bath washes out thermal compound from under transistors on heat sink.
CORRECTION 2: Add note eliminating tri-bath on heat sink.

NOTE: See correction supplement FCO's 5409728-B012A and 5409728-B012B.
In-plant effectivity -Rework all etch revisions " C "" D "and " E "modules in Module Production, Module Test, Module Repair and Field Service Depot by 1/1/74. Rework all modules in computers, system checkout areas and all in-plant modules by February 1, 1974.
Field effectivity -Rework all #54-09728 boards
(Time To Install And Test 1.0 Hour.) (Documentation $ 5.00 , Parts $ 1.00)
' the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -PF1141 - FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

5409728

H740 Regulator Board

PROCESSOR TYPE PDP-8 Family, PDP-12, PDP-11 Family

5409728-B012A CODE: F
DEC-73 - CORRECTION 1: Provides a complete list of all options affected by this FCO.
CORRECTION 2: Corrects BREAK-IN/EFFECTIVITY which has an incorrect date for Module Test and Module Repair.

NOTE: See correction supplement FCO 5409728-B012B which corrects the BREAK-IN/EFFECTIVITY ordered by this supplement.
In-plant effectivity -Changed to : Rework all etch revision " C "" D "and " E "modules in Module Production and Field Service Depot by 1/1/74. Rework all modules in Module Test, Module Repair, modules in computers and system checkout area and modules in-plant by February 1, 1974.
Field effectivity -Unchanged

5409728-B012B CODE: F
DEC-73 - PROBLEM 1: Thermal strap #1, #55-10892, has had an engineering change.
CORRECTION 1: Show new strap on drawing E-IA-5409728-0-0.
CORRECTION 2: Change break-in dates as noted below.
In-plant effectivity -Changed to: Rework all etch revision " C "" D "and " E "modules in Module Production and Field Service Depot by 2/1/74. Rework all modules in Module Test, Module Repair, modules in computers and system checkout area and modules in-plant by March 1, 1974.
Field effectivity -Unchanged

5409728-B012C CODE: F
FEB-74 - CORRECTION: BREAK-IN/EFFECTIVITY date is changed for module test and modules in computers and system checkout areas.
In-plant effectivity -Rework all etch revision " C "" D "and " E "modules in Module Production by February 1, 1974. Rework all modules in Module Repair, Module Test, and Field Service Depot by March 1, 1974. Rework all modules in computers, system checkout area and modules in-plant in Ireland, Puerto Rico, Westminster, and Westfield by April 1, 1974.
Field effectivity -Unchanged

5409728-00013 CODE: D CS: N
JAN-74 - PROBLEM 1: Oscillation in +15V circuit causing possible premature failure of output capacitor due to excessive ripple current.
CORRECTION 1: Improve stability by changing components in the compensation circuitry.
PROBLEM 2: Possible failure of D14 under heat stress.
CORRECTION 2: Change D14 to new type bridge.
In-plant effectivity -Rework all etch revision " E "modules in module production and test after March 1, 1974, or earlier if possible.

5409728-00014 CODE: P CS: H1
FEB-74 - PROBLEM: CS revision " H "of etch board revision " D "does not show thermal strap additions noted in FCO 5409728-B0012.
CORRECTION: Update Circuit Schematic and Inseparable Assembly drawings to document the changes.
In-plant effectivity -Documentation change only

5409728-00015 CODE: P CS: C2
FEB-74 - PROBLEM: CS revision " C1 "of etch board revision " C "does not show thermal strap additions noted in FCO 5409728-B0612.
CORRECTION: Update Circuit Schematic and Inseparable Assembly drawings to document the changes.
In-plant effectivity -Documentation change only

5409728-00016 CODE: D CS: P, M1
FEB-74 - PROBLEM 1: Threaded stud on choke too short to properly seat spacer Item #40.
CORRECTION 1: Replace spacer with 6-32 Kep Nut #90-08185.
PROBLEM 2: Assembly of heat sink after tri bath causes too severe an impact on production line.
CORRECTION 2: Change Note 1 on Unit Assembly drawing so that heat sink does not have to be mounted after tri bath.
In-plant effectivity -Rework all modules fitted in-plant with spacers per ECO 5409728-0012B.

5409728-E0017 CODE: F CS: R
APR-74 - PROBLEM: C16, a 100 mfd 20V capacitor, #10-04815, is overstressed in circuit application.
CORRECTION: Change C16 to a 22 mfd, 35V, solid tantalum capacitor, #10-02433. Supplement FCO 017A specifies this a second choice, and #10-02781, 100 mfd, 25V, as first choice for replacement of the #10-04815.
In-plant effectivity -Rework all etch revision " E ", CS revision " P "modules in-plant and Field Service Depot after 5/1/74.
Field effectivity -Mandatory Depot rework. On etch revision " C ", CS revision " C2 "is reworked to " C3 "; on etch " D "CS " H1 "is reworked to H2; on etch " E ", CS " M1 "is reworked to " M2 "and " P "is reworked to " R "
(Time To Install And Test .5 Hour.) (Kit Contents -PF1265 -FCO/Prints And Parts)

5409728-E017A CODE: F CS: C3, H2, M2
MAY-74 - CORRECTION: This supplement specifies another substitution for C16, #10-02781, and provides a rework procedure.
In-plant effectivity -Unchanged except that additional special revisions are included.
Field effectivity -Unchanged except that additional special revisions are included.

5409728-00018
MAY-74 - THIS ECO was cancelled by ECO 5409728-0018A.

5409728-B0019 CODE: F CS: C4, H3, M3, S
MAY-74 - PROBLEM: ECO 5409728-00012 put hex spacers for the mounting hardware of Q7 and Q23, D45H8 transistors, so that the hardware could be tightened from the top of the module. However, with the hex spacers, it is possible to overtighten and physically damage the transistors, so that they may fail at a later date.
CORRECTION: Change mounting hardware for Q7 and Q23 back to 4-40 kep nuts. Field service will use #90-06013-1, 1/2 inch screw in this application.
In-plant effectivity -Rework module concurrent with ECO 5409728-0017A or immediately if ECO 5409728-0017A has already been installed. All units in-plant must be reworked immediately.
Field effectivity -Depot rework only when required. Field rework may be required as a prerequisite to FCO 5409728-B0020. When replacing Q7 or Q23, replace both of them if they are mounted using the long screw/threaded spacer technique.
(Time To Install And Test N/A) (Kit Contents -PF1253 -FCO/Prints And Parts)

5409728-B019A CODE: F
MAY-74 - CORRECTION: Changes BREAK-IN EFFECTIVITY to: Module Production: Phase-in by 5/31/74. Computer Line and Systems Area: Rework only if module needs ECO 5409728-0017A at the same time. Field Service Depot; Rework immediately; if a Q7 or Q23 failure occurs, replace both transistors and retrofit ECO 5409728-B0019.

5409728-B0020 CODE: F CS: C5, H4, M4, T
MAY-74 - PROBLEM: Because of thermal strap #55-10892 added by FCO 5409728-B0012, this module cannot be mounted into the H750 chassis.
CORRECTION: Obsolete strap #55-10892 and replace with new part #55-11105.

NOTE 1: FCO 5409728-B0019 is a mandatory prerequisite for this fco; the new thermal strap interferes with the threaded spacer added by FCO 5409728-B0012 and removed by FCO 5409728-B0019. As a supplement to FCO 5409728-B0012, this FCO makes it possible to use the modified #54-09728 board in systems with the H750 Power Supply, 10 1/2 inch PDP-11 chassis. Parts kits for FCO 5409728-B0012 will have the #55-11105 strap after 7-1-74.

(Continued)

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(Continued from previous page.)

NOTE 2: A copy of this FCO will be included in the kit for FCO 5409728-B0012.

In-plant effectivity -Phase-in to 5409728 production by July 1, 1974 . Rework 5409728 modules for H750 module production area by May 20, 1974. If H750 chassis has been reworked per ECO 7400723-00002, rework to 5409728 is not necessary.

Field effectivity -This FCO should be implemented as a supplement to FCO 5409728-B0012 and/or when the #54-09728 board is used with the H750 power supply.

(Time To Install And Test N/A) (Documentation $ 5.00 , Parts None)
(Kit Contents -NF1254 -FCO/Prints)

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Engineering Change Order Log
DEC-O-LOG

7005062
Reader/Punch Cable

PROCESSOR TYPE PDP-8 FAMILY

7005062-B0001 **CODE F**

JANUARY-74 – PROBLEM: The PP67-A and -B, PP67-C and -D, and PR68-D and -DA all have the same size Amphenol connector, but the voltages are different. If a cable for one is plugged into another, shorting occurs.

CORRECTION: Apply paint to the connector end of the cable, do not paint the pins, and to the sheet metal near the plug on the option. RED - PR68-D and -E and the BC01H cable; ORANGE - PP67-C and -D and the BC01F cable; GREEN - PP67-A and -B and the #70-05062 cable.

In-plant effectivity – none

Field effectivity – retrofit all #70-05062's used in systems with PR68-D, -DA, -E, PP67-A, -B, -C, and -D. This FCO should be implemented immediately if the customer has mixed negative and positive systems. Otherwise, this FCO should be implemented at the next PM.

(Time To Install And Test .2 Hour) (Kit Contents – NF1177 – FCO/Prints)

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ECO DEC-O-LOG Engineering Change Order Log

7005474

Fan Housing Assembly

PROCESSOR TYPE PDP-8 Family, DECsystem 10, PDP-9 and PDP-15

This assembly is used on the following options: BA10, CP10, DA10, DC10-A, DC10-F, DF10, GP10-M, RAD8/E, RC10, RP10, TC08, TD10-A, TM10, TU30, and VP10.

7005474-C0001 CODE: F

FEB-73 - PROBLEM: Howard fans are rated 115 V, 60 Hz and can overheat and burn up in the field under 50 Hz operation. Fans were changed to 50/60 Hz rated Muffin or Boxer fans to be phased-in by ECO TD10A-00017 and its correction supplement ECO TD10A-00018 in December of 1971. CORRECTION: Howard fans used prior to those TD10A ECO's should not be used on 50 Hz. Retrofitting of the #70-05474 Fan Assembly is required on 50 Hz systems.

NOTE: The Howard fans are an open frame type; Muffin or Boxer fans are a thin, enclosed design.
In-plant effectivity -Use remaining stock of Howard fans on 60 Hz systems only.
Field effectivity -Retrofit all 50 Hz 7005474's.
(Time To Install And Test 1.0 Hour.) (This FCO Is No Charge To Customer) (Kit Contents -FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

7006156

Disk Power and Motor Control

PROCESSOR TYPE PDP-8 FAMILY, 9, 11, 12, 15

7006156-00001 CODE: M
SEP-71 - PROBLEM: The screw which secures the chassis track is too long and hits the cable in slot A1.
CORRECTION: Change the screw from 3/8 to 5/16 inch.
In-plant effectivity -Retrofit immediately

7006156-00002 CODE: M
JAN-73 - PROBLEM: Small cooling fans rub on fan screens.
CORRECTION: Use washers between fan and fan screen to space screens off fan.
In-plant effectivity -02 phase-in. Apply as soon as possible to units in production.

7006156-D0003 CODE: F CS: F
SEP-73 - PROBLEM: Transformer T1 has taps numbered incorrectly. Connection in the present configuration causes overheating of the drive motor and possible speed variation.
CORRECTION: Relocate incoming line to terminal #1 of T1.
In-plant effectivity -Retrofit all systems before shipment.
Field effectivity -Retrofit all #70-06156's at next PM .
(Time To Install And Test N/A) (Kit Contents -F1046 -FCO/Prints)

7006156-A0004 CODE: F
AUGUST-74 – PROBLEM: There is evidence that the plastic spider 4-1/2 inch fan may overheat under certain conditions, thereby presenting a potential hazard unique to the following equipment: An RS08 which is in the RF08 option, an RS09 which is in the RF09, RF11, or RF15 option.
CORRECTION: Replace the plastic spider fan with a metal fan, #12-09403-1.
In-plant effectivity – Immediate retrofit in house. Perform an immediate inspection of all above options and replace all plastic spider fans.
Field effectivity – Immediately inspect all RF08, RF09, RF11, and RF15 options and replace indicated fans if present.
(Time To Install And Test 1.0 Hour.) (Kit Contents – PF1318 WWW – FCO/Prints and Parts)

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Engineering Change Order Log
DEC-O-LOG

7006247

PC04/PC05
READER
ASSEMBLY

PROCESSOR TYPE ALL

7006247-D0001 CODE: F

JUN-74 - CORRECTION: Phase-in use of fiber optics light source #12-11722-00 in place of Osran bulb source.
In-plant effectivity -Phase-in
Field effectivity -Retrofit all PC04/PC05's if present Osran light source is difficult to align or if unit exhibits marginal operation.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $ 51.30)
` the DEC on-site labor charge will be the time required to install and test the FCO at the then current hourly rate. (Kit Contents -PF1285 - FCO/Prints And Parts)

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E C DEC-O-LOG Engineering Change Order Log

7006320

TU56 PANEL ASSEMBLY

PROCESSOR TYPE ALL EXCEPT PDP-14

7006320-C0001 CODE: F

MAY-74 - PROBLEM: TU56 DEC tape drive causes excessive tape edge wear, resulting in short tape life, excessive mark track, and data errors.
CORRECTION: Change cover plates, tape guides, springs, and dowel pins to provide less force to guide edge of tape.

NOTE 1: The new springs, #12-11821, measure 7/16 inch in diameter; the cover plate must be removed to verify ECO installation.

NOTE 2: A typographical error in the original ECO indicated that the part number for the right hand cover plate was 74-07882-1; supplement ECO 7006320-0001A provides the correct number, 74-07282-1.
In-plant effectivity -Phase-in to production on May 15, 1974. Supplement ECO 7006320-00001 corrects this to exclude Ireland production.
Field effectivity -Retrofit all TU56's which exhibit symptoms of excessive tape edge wear. Typically, TU56's used as a "systems device " EDU-25, COSS 300 will be affected.
(Time To Install And Test 2.0 Hours.) (Kit Contents -PF1275 - FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

7006756

TU10 TAPE TRANSPORT ASSEMBLY

PROCESSOR TYPE PDP-8 & 11 FAMILIES – PDP-10

7006756-00001 CODE: D
JANUARY-73 – PROBLEM: When ECO H730-00011 is implemented, the TU10 will meet the requirements for UL listing, so UL/NFPA decal must be added.
CORRECTION: Add UL/NFPA decal.
In-plant effectivity – phase-in when ECO H730-00011 is fully implemented

7006756-C0002 CODE: F
APRIL-74 – PROBLEM: Noise from reel motor brushes causes intermittent data errors. Problem is evidenced by CRC, LRC, parity status errors, or data errors in which a zero is transformed into a one.
CORRECTION: Place ferrite tubes over reel motor leads and ground reel motors firmly to logic mounting bar. The parts required are one each #12-05724-02 grounding strap and #90-08887 braid strap and four #16-05147 ferrite sleeves.
In-plant effectivity – phase-in to production. Do not retrofit any machine in Westminster which will successfully pass acceptance criteria.
Field effectivity – Retrofit TU10's when symptoms are present
(Time to Install and Test .5 hour.) (Kit Contents – PF1242 – FCO/prints and parts)

7006756-00003 CODE: M
APRIL-74 – PROBLEM: The heads of the screws at the rear of the slides hit and require filing at assembly. There is no hole for the new vacuum system.
CORRECTION: Change from 1/4-20 to 10-32 on back holes only and use 10-32 well-nut. Drill hole for new vacuum system.
In-plant effectivity – phase-in

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DEC-O-LOG Engineering Change Order Log

7008674

Microswitch Harness

PROCESSOR TYPE PDP-8/F and PDP-8/M

7008674-00001 CODE: D
DEC-71 - CORRECTION: Correct drawing C-IA-7008674-0-0 to show wire going to correct pin on mate-n-lok connector.
In-plant effectivity -03 documentation/design change

7008674-00002 CODE: D
MAR-73 - PROBLEM 1: Wire pulling out of solderless connector.
CORRECTION 1: Change wire size from #22 AWG to #18 AWG.
PROBLEM 2: Screws become loose and fall off micro switch.
CORRECTION 2: Remove screw and lockwasher from NC terminal and put shrinkable tubing over COM and NO terminals.

NOTE: See correction supplement FCO 7008674-00003.
In-plant effectivity -All units issued to kits after March 1, 1973 must reflect this eco; rework if necessary.

7008674-D0003 CODE: F
FEB-73 - PROBLEM: ECO 7008674-00002 did not adequately fix problem of screws coming loose on microswitch.
CORRECTION: Add two internal tooth lockwashers and delete the two external tooth lockwashers supplied with the microswitch.
In-plant effectivity -All units issued to kits after March 1, 1973 must reflect this FCO.
Field effectivity -Rework all #70-0s674's on systems in vibrational environment or whenever switch assembly is accessible for service.
(Time To Install And Test .5 Hour.) (Documentation $ 5.00 , Parts $. 50 , DEC Labor $ 15.00) (Kit Contents -FCO/Prints And Parts)

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EC DEC-O-LOG Engineering Change Order Log

7009357

VR14 Main Chassis Harness

PROCESSOR TYPE PDP-8 and PDP-11 Families PDP-12 and PDP-15

7009357-A0001 CODE: F

OCT-73 - PROBLEM: CRT arcing damages G836 and W684 modules, which causes phosphor burning in the CRT .
CORRECTION: Add voltage transient suppressors to suppress arcing. For complete arc suppression, this FCO should be implemented with FCO's G836-A0008 and W684-A0005, which supersedes rework FCO W684-A0004 and orders exchange of the W684 module.

NOTE 1: Both the new harness #70-09357, and an old harness #70-08457 which has been eco,d can be recognized by the fact that the CRT socket has metal lugs protruding from the wiring side of each pin. If an unmodified old harness #70-08457 is to be reworked, the following parts must be ordered separately: Q1, #12-11446, CRT socket ; two feet of #91-07350, #22 wire.

NOTE 2: VR14-L's require also FCO's G836-A0008 and W684-A0005; all ; all other VR14's require FCO G836-A0008.
In-plant effectivity -Retrofit all #70-09357's when new parts are available.
Field effectivity -Rework all #70-09357 and #70-08457 harnesses in all GT40's, VR14-L, and in all VR14's as required.
(Time To Install And Test 2.0 Hours.) (Kit Contents -PF1080 - FCO/Prints And Parts)

7009357-A0002 CODE: F

DEC-73 - PROBLEM: Arcing too severe at CRT cathode.
CORRECTION: Add arc suppressor #11-11562 to harness J16 between cathode, pin 11 and ground, pin 4.

NOTE: This FCO must be installed in conjunction with FCO's W684-A0004, W684-A0005, G836-A0008, and 7009357-A0001 for complete arc suppression.
In-plant effectivity -Rework immediately
Field effectivity -Rework all #70-09357 and #70-08457 harnesses in all VR14's and VR14-L's when symptoms are present.
(Time To Install And Test 1.0 Hour.) (Kit Contents -PF1142 - FCO/Prints And Parts)

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Engineering Change Order Log
DEC-O-LOG

7606377

4096 Word Count Board

PROCESSOR TYPE PDP-8/E

7606377-C0001 CODE: DF ML: A WL: A

JUL-73 - PROBLEM: WRITE flip-flop not properly controlled on error conditions.

CORRECTION: Change the clear condition of the WRITE flip-flop to be more inclusive. The ADD/DELETE's are as follows: DELETE F0402 to F0415, F0415 to F2001, and E0811 to HP01; ADD F0402 to F2001, E0906 to F0415, E0811 to E0905, and E0905 to HP01.

In-plant effectivity -03 -All future #76-06377's

Field effectivity -Rework 7606377's in RKS8-E serial numbers #1 thru #7.

(Time To Install And Test 1.0 Hour.) (Kit Contents -FCO/Prints)