

PERIPHERAL EQUIPMENT DIVISION

TITLE POSITIONER SCALE REMOVAL AND REPLACEMENT PROCEDURES				PIB NO. DK-3016
PRODUCT LINE	TAPE DISK FORMATTER <input checked="" type="checkbox"/>	EQUIPMENT CHANGED 102884-01	MODEL SERIES AFFECTED D3000	EFFECTIVE DATE OCTOBER 15, 1974

CLASS OF BULLETIN:	ORDER PART KIT NO.	EFFECTIVITY
<input type="checkbox"/> IMPROVEMENT <input type="checkbox"/> RETROFIT ON FAILURE <input type="checkbox"/> RETROFIT RECOMMENDED <input checked="" type="checkbox"/> SERVICE INFORMATION ONLY	N/A	ALL D3000 DISK SERIES

TITLE: POSITIONER SCALE REMOVAL AND REPLACEMENT PROCEDURES
Estimated time of removal, replacement, and retest - 1.4 hrs.

PURPOSE: Product Support has prepared the following preliminary procedure to assist you whenever you find the need to replace the positioner scale assembly.

The following procedure is not currently outlined in the D3000 Service and Maintenance Manual. However, its incorporation will be reflected in all future D3000 Manuals. The addition of this procedure will add flexibility to your D3000 disk drive maintenance programs performed by your trained personnel. Your use of this procedure will probably be infrequent. It is with this understanding that the procedure has been prepared in a fundamental form so that it may be studied carefully before any step-by-step disassembly or reassembly be performed. Feel free to contact your PERTEC Product Support representative for consultation regarding this procedure.

PARTS: One Scale Assembly (102884-01)

NOTE

REMOVAL OF READ/WRITE HEADS
NOT NECESSARY.

- 1.0 Tools Required
- 1.1 Complete set of Xcelite hex drives.
 - 1.2 1 - 10" Phillips screwdriver.
 - 1.3 1 - Strip of paper or mylar .005" thick, 0.6" wide and 5" long.
 - 1.4 1 - carriage restraint tube (106291-01) or equivalent.
 - 1.5 CE Cartridge (Alignment Cartridge)

Should Additional Information Be Required — Contact

Distribution Code - 6318

PERTEC
PERIPHERAL EQUIPMENT DIVISION
9600 Iroindale Avenue, Chatsworth, California 91311
Phone (213) 882-0030 / TWX (910) 494-2093
ATTENTION: PRODUCT SUPPORT MANAGER
PERTEC 20 K0120(1)

TITLE POSITIONER SCALE REMOVAL AND REPLACEMENT PROCEDURES

PIB NO.
DK3016

- 2.0 Prepare Drive for Service
 - 2.1 Power OFF and unplug unit.
 - 2.2 Remove dust cover.
 - 2.3 Place Logic and Servo PCBA in the service position.
 - 2.4 Remove READ/WRITE Board.
 - 2.5 Lay head cables against positioner magnet.
 - 2.6 Install carriage restraint on top bearing rail to keep heads from moving.
- 3.0 SCRIBE position of the reticle in the holder. (Figure 1)

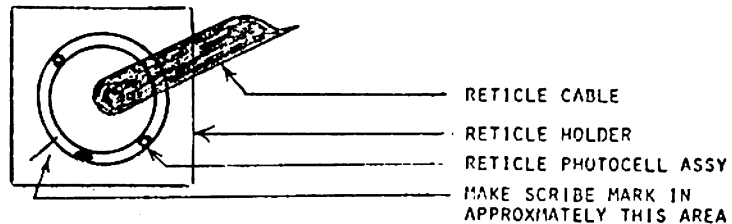


FIGURE I

- 4.0 Remove two hex head screws and washers securing the reticle in the holder.
- 5.0 Lift reticle up enough to remove scale bracket without damaging the reticle, or to check for broken pieces if scale was broken.
- 6.0 Remove 2 Phillips head screws that secure shield.

NOTE

EXTREME CARE MUST BE TAKEN TO
AVOID DAMAGE TO THE SCALE.

- 7.0 Remove scale shield.
 - 7.1 Remove three hex head screws that secure scale and remove old scale assembly.
- 8.0 Install new scale assembly (102884-01).
- 9.0 Leave 3 hex head screws that secure scale loose.
- 10.0 Reinstall reticle, using initial scribe marks as a rough adjustment.
- 11.0 Place the .005 paper or mylar between reticle and scale. Adjust scale to reticle distance using the paper as a feeler gauge.

CAUTION

IF CARE IN HANDLING IS NOT EXERCISED,
DAMAGE TO SCALE AND/OR RETICLE COULD RESULT.

TITLE POSITIONER SCALE REMOVAL AND REPLACEMENT PROCEDURES

PIB NO.
DK3016

- 12.0 Only moderately tighten scale assembly after initial adjustment is obtained.
- 13.0 Remove paper strip.
- 14.0 Scale Adjustment: Electronic.
 - 14.1 Replace READ/WRITE PCBA and head cables.
 - 14.2 Remove J205 and J206 from SERVO PCBA.
 - 14.3 Apply power and wait for "SAFE" condition.
 - 14.4 Install scratch pack and depress RUN/STOP.
 - 14.5 After approximately 33 seconds, manually load heads.
 - 14.6 Slowly move positioner to CYL 202 with .005 paper installed between scale and reticle. No excessive tightness should be felt when moving the positioner its full stroke. If no tightness is felt, further testing can be done.

CAUTION

CARE MUST BE TAKEN AS POSITIONER IS MOVED.

SHOULD POSITIONER BECOME HARD TO MOVE, STOP!

SCALE BREAKAGE COULD RESULT IF POSITIONER IS FORCED.

- 15.0 Adjust R69 on SERVO BOARD to approximately its center range. (Figure 2)

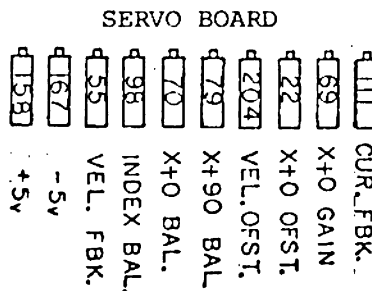


FIGURE 2

- 16.0 Adjust reticle for maximum amplitude of X+0 and X+90 by using the X+0 and X+90 signal polarity and quadrature check. (D3000 Manual, Page 6-29, 6.8.3.) (INSURE CHANNEL B ON SCOPE IS NOT INVERTED)
- 17.0 With proper amplitude and polarity achieved, observe the amplitude of the X+0 waveform. It SHALL have no more than .5V variation in the amplitude envelope while moving the positioner back and forth. (Cylinder 000 to 202)

TITLE POSITIONER SCALE REMOVAL AND REPLACEMENT PROCEDURES

PIB NO.
DK3016

NOTE

SHOULD MORE THAN .5V VARIATION IN
X+0 BE OBSERVED AT FULL THROW,
IMPROPER SCALE TO RETICLE ADJUSTMENT
IS EVIDENT. READJUSTMENT OF SCALE IS
NECESSARY.

- 18.0 After proper voltage variation has been achieved, Section 6 of the D3000 Manual may be performed.
- 19.0 When SERVO and positioner are functioning properly, monitor the following:
- o X+0 12V Peak-to-Peak centered at ground.
 - o X+0 Symmetrical over and undershoot on one track seeks.
(See Fig. 6-13 "D" in D3000 Manual)
 - o X+0 Over and undershoot held within specifications.
(See Fig. 6-22 in D3000 Manual)
 - o X+90 Approximately + 3V above ground reference on one track seeks.
- 20.0 Perform CE Alignment, using one of the two methods listed below:
- 20.1 (I) If data on lower platter is to be reconstructed, perform normal CE Alignment. Lower platter requires no CE Alignment.
- 20.2 (II) If data on lower platter is to be READ, use following alignment:
- (1) Loosen the 2 nylon screws and one hex head screw in positioner transducer mounting strip. (Ref. PIB-DK3015 - Fig. 1 for locations)
 - (2) Move entire reticle assembly either forward or backward to get on correct track.
 - (3) Tighten hex head screw and the two nylon screws after proper alignment.
- 21.0 Restore unit to normal operating configuration.
- 22.0 Insure proper operation by operating disk drive with dust cover on.