

TOSHIBA

Toshiba 2460 Service Handbook

Digital plain paper copier

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SERVICE HANDBOOK

DIGITAL PLAIN PAPER COPIER

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AUTOMATIC DUPLEXING UNIT

2460

ManualsLib.com

MD-5004



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Toshiba digital plain paper copier copying functions (166 pages)

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Summary of Contents for Toshiba 2460

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[Page 2](#) GENERAL PRECAUTIONS REGARDING THE INSTALLATION AND SERVICE FOR THE COPIER 2460 The installation and service should be done by a qualified service technician. 1. Transportation/Installation • When transporting/installing the copier, employ two persons and be sure to use the positions as indicated below.

[Page 3](#) 4. Main Service Parts for Safety • The breaker, door switch, fuse, thermostat, thermofuse, thermistor, etc. are particularly important for safety. Be sure to handle/install them properly. 5. Cautionary Labels • During servicing, be sure to check the rating plate and the cautionary labels such as “Unplug the power cord during service”, “Hot area”, “Laser warning label”...

[Page 4: Adjustment Items](#)

Original feeding jam at the feeding area of the ADF Original transporting jam at the transporting area of the ADF Original exiting jam at the exiting area of the ADF Original prefeeding jam
September 1997 © TOSHIBA CORP. 1 - 1 2460 ADJUSTMENT...

[Page 5](#) Poor adjustment by the exit/reverse sensor detected CALL SERVICE from others MCPU is abnormal PFC microcomputer is abnormal CALL SERVICE from the laser Polygonal motor is abnormal optical system HSYNC is abnormal 2460 ADJUSTMENT 1 - 2 September 1997 © TOSHIBA CORP.

[Page 6](#) 0 : Standard PPC 1 : Extended PPC 2 : FAX Tx 3 : FAX Rx 4 : GDI 5 : DSS Primary scanning reproduction ratio(Y direction) Hexadecimal Secondary scanning reproduction ratio(X direction) Hexadecimal Setting mode, code "253" displays latest 8 error data September 1997 © TOSHIBA CORP. 1 - 3 2460 ADJUSTMENT...

[Page 7: Self-Diagnosis Modes](#)

• Setting mode (08): Refer to “1.2.5 Setting mode”. Notes: C/S: Press the CLEAR/STOP key PWR: Turn on the power switch INT: Press the INTERRUPT key E/S: Press the ENERGY SAVER key 2460 ADJUSTMENT 1 - 4 September 1997 © TOSHIBA CORP.

[Page 8](#) While all the displays on the control panel are lit (“01” mode), copying is disabled. When the copier enters the standby status by the pressing of the CLEAR/STOP key, copying is enabled. September 1997 © TOSHIBA CORP. 1 - 5 2460 ADJUSTMENT...

[Page 9](#) PFP lower size SW Bypass width size SW [0] Key Paper size Lighting/ SW off LED lit in above condition (Signal level : H) ORIGINAL COPY A4/LD A3/LG B4/LT A5/ST UNIVERSAL/ OTHER 2460 ADJUSTMENT 1 - 6 September 1997 © TOSHIBA CORP.

[Page 10](#) 3: Fuser thermistor-2 condition ORIGINAL COPY A4/LD A3/LG B4/LT A5/ST UNIVERSAL/ OTHER <Procedure> START Digital keys LED ON ENERGY SAVER (To clear) 03 → With initialization before test mode is entered Note: September 1997 © TOSHIBA CORP. 1 - 7 2460 ADJUSTMENT...

[Page 11: Output Signal Check](#)

Duct fan motor 1 ON/OFF Scanning motor (automatically stops at the limit position, its speed is variable using the ZOOM keys) 1: Functional when the developer unit is not installed. 2460 ADJUSTMENT 1 - 8 September 1997 © TOSHIBA CORP.

[Page 12](#) Warm-up Code START START (ON) code (OFF) Group (2) Test mode standby Operation Code START (ON) Warm-up Group (3) Test mode standby Operation Operation Code START START (ON) (OFF) Warm-up September 1997 © TOSHIBA CORP. 1 - 9 2460 ADJUSTMENT...

[Page 13](#) Operation Code START Warming up (Test print) Note: Though errors are displayed when generated, recovery is not carried out. This is remedied by turning the power OFF then ON again. 2460 ADJUSTMENT 1 - 10 September 1997 © TOSHIBA CORP.

[Page 14](#) (Note 1): Refer to 1.3. (Note 2): Functional with the developer unit removed and the service jig attached. However, the jig is not necessary for the developer bias adjustment. Refer to 1.9. September 1997 © TOSHIBA CORP. 1 - 11 2460 ADJUSTMENT...

[Page 15](#) 433 Bottom margin Standard PPC -94~255 If the value is increased by “1”, the white area of the trailing edge is increased by approx. 0.04233 mm. 435 Reserved 436 Reserved 437 Reserved 2460 ADJUSTMENT 1 - 12 September 1997 © TOSHIBA CORP.

[Page 16](#) 0~255 PPC (Text) 514 Reserved 515 Reserved 580 Automatic gamma adjustment - -

Corrects the image quality after reading the test pattern of the test print for adjustment. (Note 3) September 1997 © TOSHIBA CORP. 1 - 13 2460 ADJUSTMENT...

[Page 17](#) Extended PPC :Extended specification PPC brought by the PM board "PPC" :Includes "Standard PPC" and "Extended PPC" "GDI", "DSI" :For optional board "ALL" :Includes "Standard PPC", "Extended PPC", "PPC", "GDI" and "DSI" 2460 ADJUSTMENT 1 - 14 September 1997 © TOSHIBA CORP.

[Page 18](#) ** Test copying is not available using the E/S key in the duplex copy mode. In this case, the adjustment mode must be cleared by inputting "09"; then duplex copying can be performed in the normal way. September 1997 © TOSHIBA CORP. 1 - 15 2460 ADJUSTMENT...

[Page 19: Setting Mode](#)

- See page 1-3 254 ADU/Copier cassette loading status 0: Automatic 1: Copier upper cassette is loaded 2: ADU is loaded 3: Neither ADU nor copier upper cassette is loaded 2460 ADJUSTMENT 1 - 16 September 1997 © TOSHIBA CORP.

[Page 20](#) 4: 190°C, 5: 195°C, 6: 200°C, 7: Temp. control ON 412 Fuser temperature in the energy 0: OFF, 1: 120°C, 2: 130°C, 3: 140°C, 4: 150°C, saver mode 5: 160°C September 1997 © TOSHIBA CORP. 1 - 17 2460 ADJUSTMENT...

[Page 21](#) 1: Functional 601 Secondary scanning reproduction EUR=0 0: 100 % ratio adjustment UC=1 1: 101 % 603 Automatic duplexing mode 0: Not functional 1: One-sided/Dual-sided 2: Dual-sided/Dual-sided 3: User selection 2460 ADJUSTMENT 1 - 18 September 1997 © TOSHIBA CORP.

[Page 22](#) Not mounted : - - - - 902 ROM version indication - - Ver.XXX (Engine ROM) (Note) Refer to the (Note 4) of the 1.2.4 for the meaning of the mode September 1997 © TOSHIBA CORP. 1 - 19 2460 ADJUSTMENT...

[Page 23](#) "0525 001960" displayed Warm-up "— — —" START displayed (To cancel) Warm-up "0525 001960" START (To clear) Memorizing Key in 000000 Warm-up HELP START Next ID code (To skip) displayed 2460 ADJUSTMENT 1 - 20 September 1997 © TOSHIBA CORP.

[Page 24](#) (5) After a short time, the B displays on the message display will automatically stop changing and, at the same time, the message will also change as shown below, indicating that the auto-toner adjustment has finished completely. 240% ADJUST MODE September 1997 © TOSHIBA CORP. 1 - 21 2460 ADJUSTMENT...

[Page 25](#) Press the INTERRUPT key. The drum, developer unit, etc., will stop operating and the following display will appear. 100% 100% TEST MODE READY Turn off the power switch. Install the toner cartridge. 2460 ADJUSTMENT 1 - 22 September 1997 © TOSHIBA CORP.

[Page 26: Image Density](#)

Notes:1) Only one copy of single-sided originals can be made. 2) Duplex copying and memory copying cannot be carried out. Make test copies in these modes after canceling the adjustment mode. September 1997 © TOSHIBA CORP. 1 - 23 2460 ADJUSTMENT...

[Page 27: Print Image Adjustment](#)

Secondary scanning position Scanner secondary scanning deviation (305) e) Cutting of scanner image leading edge (313) f) Top margin (430) g) Left margin (431) h) Right margin (432) i) Bottom margin (433) 2460 ADJUSTMENT 1 - 24 September 1997 © TOSHIBA CORP.

[Page 28](#) : test print SAVER 100% WAIT WARMING UP If the test print does not satisfy the specifications, return to COPYING and repeat the adjustment. : Adjustment mode canceled. September 1997 © TOSHIBA CORP. 1 - 25 2460 ADJUSTMENT...

[Page 29: Adjustment Of Paper Aligning Value](#)

Therefore, make sure that no registration shifting occurs while adjusting the value. 2. Long size adjustment is used as the base when there are both long and short adjustments. 2460 ADJUSTMENT 1 - 26 September 1997 © TOSHIBA CORP.

[Page 30](#) 2. In order to make a test print, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is effective within the range of 114 ~ 142. The default adjustment value is 128. September 1997 © TOSHIBA CORP. 1 - 27 2460 ADJUSTMENT...

[Page 31](#) 2. In order to make a test print, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of 0 ~ 255. The default adjustment value is 80. 2460 ADJUSTMENT 1 - 28 September 1997 © TOSHIBA CORP.

[Page 32](#) 2. In order to make a test print, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of 1 ~ 255. The default adjustment value is 140. September 1997 © TOSHIBA CORP. 1 - 29 2460 ADJUSTMENT...

[Page 33](#) 0~40 (Default adjustment value is 13). 4. Since the lower cassette adjustment value becomes a standard for all adjustments, this adjustment must always be performed in the order stated above. 2460 ADJUSTMENT 1 - 30 September 1997 © TOSHIBA CORP.

[Page 34](#) 2. In order to make a test copy, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is effective within the range of 114 ~ 142. The default adjustment value is 128. September 1997 © TOSHIBA CORP. 1 - 31 2460 ADJUSTMENT...

[Page 35](#) 2. In order to make a test copy, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of 5 ~ 251. The default adjustment value is 85. 2460 ADJUSTMENT 1 - 32 September 1997 © TOSHIBA CORP.

[Page 36](#) 2. In order to make a test copy, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of 0 ~ 255. The default adjustment value is 128. September 1997 © TOSHIBA CORP. 1 - 33 2460 ADJUSTMENT...

[Page 37](#) 2. In order to make a test copy, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of "85 ~ 171". The default adjustment value is 135. 2460 ADJUSTMENT 1 - 34 September 1997 © TOSHIBA CORP.

[Page 38](#) 2. In order to make a test copy, make sure the message indicates [100 % after the INT key is pressed. 3. Adjustment value is able to be input within the range of "128 ~ 255". The default adjustment value is 128. September 1997 © TOSHIBA CORP. 1 - 35 2460 ADJUSTMENT...

[Page 39](#) The default adjustment value is 0. 4. In order to input a minus (-) value, use the # key. (ex. if the value is "-15": key in # 1 5) 2460 ADJUSTMENT 1 - 36 September 1997 © TOSHIBA CORP.

[Page 40](#) The default adjustment value is 0. 4. In order to input a minus (-) value, use the # key. (ex. if the value is "-15": key in # 1 5) September 1997 © TOSHIBA CORP. 1 - 37 2460 ADJUSTMENT...

[Page 41](#) When released, the display on the control panel returns to the stand-by status. Check the position, direction and skew of the gradation pattern on the original glass, and repeat the steps from (5). 2460 ADJUSTMENT 1 - 38 September 1997 © TOSHIBA CORP.

[Page 42](#) : Ends the adjustment : Clear the adjustment error 100% Return to to repeat adjustment : Exit the adjustment mode Abnormal: (Clear using C/S key) 100% TEST MODE ERROR September 1997 © TOSHIBA CORP. 1 - 39 2460 ADJUSTMENT...

[Page 43: Test Mode](#)

2) Duplex copying and memory copying cannot be carried out. Make test copies in these modes after canceling the adjustment mode. Return to to repeat adjustment. : Adjustment mode canceled. 2460 ADJUSTMENT 1 - 40 September 1997 © TOSHIBA CORP.

[Page 44: Gamma Slope Correction](#)

Extended PPC Gamma slope correction If the value is increased, the image is darkened. (Center value is 5) Input procedure of the adjustment value is same as the 1.4 image density adjustment. September 1997 © TOSHIBA CORP. 1 - 41 2460 ADJUSTMENT...

[Page 45: High-Voltage Adjustment](#)

Machine frame Main charger case (frame grounding) Current measuring Jig detection connector Brown Green Dev. unit connector of the copier d terminal White e terminal d terminal e terminal 2460 ADJUSTMENT 1 - 42 September 1997 © TOSHIBA CORP.

[Page 46](#) How to turn the power ON Pre-cleaning Discharge Machine frame (frame grounding) Current measuring jig Dev. unit connector of the copier Brown Jig detection connector d terminal White e terminal September 1997 © TOSHIBA CORP. 1 - 43 2460 ADJUSTMENT...

[Page 47](#) For shipping, adjustment is made using a 100 MΩ input resistance tester. Connect the digital testers as instructed in (1) and follow the procedure below to adjust the main charger, developer bias, transfer, separation, and pre-cleaning discharger outputs. 2460 ADJUSTMENT 1 - 44 September 1997 © TOSHIBA CORP.

[Page 48](#) Note: The "adjustment value" indicates the output voltage of the D/A converter (IC75) on the logic board. The relationship between the output voltage and adjustment value is as follows: output voltage = (adjustment value + 1) ÷ 256 × 5 V September 1997 © TOSHIBA CORP. 1 - 45 2460 ADJUSTMENT...

[Page 49](#) • The adjustment code varies according to where pockmarks occur. Select the required adjustment code while referring to the following diagram. Approx. 14 mm Approx. 10 mm "220" "221" "222" Adjustment code Copy leading edge Copy trailing edge 2460 ADJUSTMENT 1 - 46 September 1997 © TOSHIBA CORP.

[Page 50](#) • The adjustment code varies according to where the defective transfer occurs. Select the required adjustment code while referring to the following diagram. Approx. 10 mm "230" "232" Adjustment code "230" "232" Copy leading edge Copy trailing edge September 1997 © TOSHIBA CORP. 1 - 47 2460 ADJUSTMENT...

[Page 51](#) 2. Use care to prevent damage to the edge of the separation claws. 3. High-voltage adjustment is rejected if the jig detection connector is not connected (except the developer bias adjustment). 2460 ADJUSTMENT 1 - 48 September 1997 © TOSHIBA CORP.

[Page 52](#) (front side). (4) Also while pressing carriages 1 and 2 against the exit side frame (C & D), tighten the carriage-1 fixing screws. Carriage 2 Exit side frame September 1997 © TOSHIBA CORP. 1 - 49 2460 ADJUSTMENT...

[Page 53](#) <Front side> <Rear side> Pulley (Rear) Spherical terminal Boss Spherical terminal Hook Pulley (Front) Hook Boss (Rear) Spherical terminals Wire winding pulley Wires Hooks (Front) Wire holder jig Wire winding pulley 2460 ADJUSTMENT 1 - 50 September 1997 © TOSHIBA CORP.

[Page 54](#) The jigs will not be installed if its installation direction is wrong, it is floating on the pulley. <Installation phase> ← → Front side Rear side Spherical terminal Projection Wire holder jig Wire holder jig Pulley Projection September 1997 © TOSHIBA CORP. 1 - 51 2460 ADJUSTMENT...

[Page 55](#) In case of A • Move the original scale in the direction indicated In case of B • Move the original scale in the direction indicated 2460 ADJUSTMENT 1 - 52 September 1997 © TOSHIBA CORP.

[Page 56](#) Step 1 In case of A: Tighten the mirror-2 adjustment screw (CW). → Go to C In case of B: Loosen the mirror-2 adjustment screw (CCW). Mirror-2 → Go to D September 1997 © TOSHIBA CORP. 1 - 53 2460 ADJUSTMENT...

[Page 57](#) Step 2 In case of C: Tighten the mirror-1 adjustment screw (CW). → Normal image In case of D: Loosen the mirror-1 adjustment screw (CCW). → Normal image Mirror-1 2460 ADJUSTMENT 1 - 54 September 1997 © TOSHIBA CORP.

[Page 58: Lens Unit](#)

Notes 1. Do not touch the screws H (paint lock: 7pcs.) when replacing the lens unit. Lens Front side Rear side 2. Take sufficient care when handling the unit not to hold the adjustment portion.

September 1997 © TOSHIBA CORP. 1 - 55 2460 ADJUSTMENT...

[Page 59](#) When loosening the screw for disassembly, etc., remember the position of the adjustment plate and reinstall it where it was. (During the replacement of the magnetic roller, adjust the developer the developer polarity position.) 2460 ADJUSTMENT 1 - 56 September 1997 © TOSHIBA CORP.

[Page 60](#) 3. After reassembling the upper cover, pay attention to avoid overlapping of the side seal (front and rear) and the rubber seal. September 1997 © TOSHIBA CORP. 1 - 57 2460 ADJUSTMENT...

[Page 61](#) After moving the bracket, initialize the ADU. Check the gap between the side guide and the paper. 1.5 ± 1 mm Side guide Side guide ADU motor Stacked bracket sheets Side switch bracket 2460 ADJUSTMENT 1 - 58 September 1997 © TOSHIBA CORP.

[Page 62](#) Front right side Right feed side 1.17 Adjusting Cassette Side Deviation The procedure for adjusting cassette side deviation for the copier and the PFP is the same as in 1.16.2. September 1997 © TOSHIBA CORP. 1 - 59 2460 ADJUSTMENT...

[Page 63: Periodical Maintenance](#)

(RC60) S: Silicone Oil Same thereafter Machine : Cleaning with soft pad, W: White grease (Molycoat) Replace in event of > cloth, or cleaner deformation or other Inspector (vacuum cleaner) damage Remarks September 1997 © TOSHIBA CORP. 2 - 1 2460 MAINTENANCE...

[Page 64: Periodic Inspection Check List](#)

34. Paper feed system drive gears Paper (tooth faces) feed 35. Aligning roller > system 36. Paper guide > 37. Brush > 38. Transport belt > 39. Separation pad 80> 2460 MAINTENANCE 2 - 2 September 1997 © TOSHIBA CORP.

[Page 65](#) 72. Feed roller (main) 73. Feed roller (sub) 74. Separation roller 75. Transport roller 76. Empty sensor 77. Jam sensor 78. Side guide sensor 79. End sensor Lubrication times: None September 1997 © TOSHIBA CORP. 2 - 3 2460 MAINTENANCE...

[Page 66](#) 16 22 23 24 25 12 15 17 28 29 36 37 35 45 48 40 42 23 24 72 73 Front sectional view 2460 MAINTENANCE 2 - 4 September 1997 © TOSHIBA CORP.

[Page 67](#) Rear side view September 1997 © TOSHIBA CORP. 2 - 5 2460 MAINTENANCE...

[Page 68](#) If toner adhering to the scraper claw is forcibly scraped off, it may be damaged. Therefore, if the tip of the claw is heavily coated with toner, replace the claw. 2460 MAINTENANCE 2 - 6 September 1997 © TOSHIBA CORP.

[Page 69](#) *15 Heat roller cleaning blade Refer to section "3.6 Checking and Cleaning Heat Roller Cleaning Blade" of this Service Handbook. *16 Apply white grease to the main motor drive unit gears (shown arrow). September 1997 © TOSHIBA CORP. 2 - 7 2460 MAINTENANCE...

[Page 70](#) HR-2060-U Rubber roller (lower heat roller) HR-2060-L Cleaning felt roller SR-2060-H Scraper (for heat roller) - * The number is the same as that in the Periodic Inspection Check List. 2460 MAINTENANCE 2 - 8 September 1997 © TOSHIBA CORP.

[Page 71](#) Parts List Name Page Item Door switch jig Developer nozzle jig Grid cleaning pad Wire holder jig Doctor sleeve jig Developer unit cap jig Current measuring jig Drum shaft jig September 1997 © TOSHIBA CORP. 2 - 9 2460 MAINTENANCE...

[Page 72: Precautions For Storing And Handling Supplies](#)

3. PRECAUTIONS FOR STORING AND HANDLING SUPPLIES 3.1 Precautions for Storing TOSHIBA Supplies Toner and Developer Toner and developer should be stored in a place where the ambient temperature is below 35°C (95°F) and should also be protected against direct sunlight during transportation.

[Page 73](#) Do not put solvents such as thinner, etc. on the edge. Do not deposit dirt such as paper fibers, etc. on the blade. Do not place the blade near a heat source. 2460 SUPPLIES 3 - 2

September 1997 © TOSHIBA CORP.

[Page 74](#) 2. When the heat roller has been replaced, 0 (zero) must be input to clear the power-on time counter (mode "08", code "402") and the fuser running counter (mode "08", code "403"). September 1997 © TOSHIBA CORP. 3 - 3...

[Page 75](#) Do not allow a hard object to hit on or rub against the blade edge. Checking When the blade edge becomes dirty, clean it with a cloth soaked in alcohol. If the cleaning blade is damaged, replace it. 2460 SUPPLIES 3 - 4 September 1997 © TOSHIBA CORP.