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MAJOR DIFFERENCES BETWEEN THE PIGEON AND N220 SERIES

The Pigeon A and B are developed based on the N220 and N230.

The following table shows the major differences between the Pigeon and the N220 series.

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
	Major Features		
1	Copy Speed	Pigeon A: 20 copies/minute (A4/11" x 8 1/2" sideways) 10 copies/minute (A3/11" x 17")	N220: 18 copies/minute (A4/11" x 8 1/2" sideways) 10 copies/minute (A3/11" x 17")
		Pigeon B: 22 copies/minute (A4/11" x 8 1/2" sideways) 11 copies/minute (A3/11" x 17")	N230: 20 or 21 copies/minute (A4/11" x 8 1/2" sideways) 11 copies/minute (A3/11" x 17")
2	Energy Saver Function	The energy saver function reduces power consumption by decreasing the fusing temperature when the copier is not in use. The energy saving ratio can be changed by SP mode. The automatic energy saver mode is selected by SP mode.	—
3	User Program Mode	Pigeon A: Yes Pigeon B: Yes	N220: No N230: Yes
4	Edge Erase, Center Erase, Edge/Center Erase	The edge erase, center erase and edge/center erase modes are added as preset user program modes. The erase margin can be changed by SP mode.	—
	Copier Installation		
1	Shipping Retainers	The following shipping retainers are removed to reduce the installation time: • Optics Lock Pins • Scanner Lock Plate and Plugs • Drum Protective Sheet	—
2	Toner Supply Unit Initial Setting (SP63)	The toner supply unit initial setting (SP63) is not required. For the color development unit installation, SP63 must be performed as for the N220 series.	SP63 must be performed to prevent toner end from being falsely detected because the toner supply unit is empty.

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
3	220 V to 230 V and 240 V Conversion	A110 copier: The conversion for the transformer is required. The conversion for the exposure lamp is not required. A111 copier: The conversion for the transformer and the exposure lamp is not required.	The conversion for the transformer and exposure lamp is required.
	Peripheral		
1	Duplex Unit	The duplex unit is unique to the Pigeon series. The differences from the N220 series duplex unit are as follows: 1) A projection is added to actuate all the paper size switches. 2) Duplex front cover 3) Duplex main board (Communication signal between the duplex and copier main boards is different from the N220 series.) 4) A ground wire is added to the duplex frame in order to absorb electrical noise. The duplex unit for the N220 series cannot be installed on the Pigeon series.	The duplex unit for the Pigeon series cannot be installed on the N220 series.
2	Optional DC Power Supply Unit	**Pigeon A only** The optional dc power supply unit (Model Code: A525) is unique to the Pigeon A. The optional dc power supply unit consists of the following parts: • DC power supply board • Transformer • DF interface harness The optional dc power supply unit is required when the DF and/or duplex unit is installed on the Pigeon A.	**N220 only** The optional dc power unit (Model Code: A494) consists of the following parts: • DC power supply board • Transformer • Interface board • DF/Sorter/Duplex interface harness The optional dc power supply unit is required when the DF, duplex, and/or sorter is installed on the N220.

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
	Peripheral Installation		
1	Sorter Installation	The optional dc power supply unit (A525) is not required. The interface harness is an accessory of the sorter.	N220: The optional dc power supply unit (A494) is required. The sorter interface harness is an accessory of the optional dc power supply unit.
			N230: The optional dc power supply unit and the sorter interface harness are installed on the machine at the factory.
2	DF Installation	Pigeon A: The optional dc power supply unit (A525) is required. The DF interface harness is an accessory of the optional dc power supply unit.	N220: The optional dc power supply unit (A494) is required. The DF interface harness is an accessory of the optional dc power supply unit.
		Pigeon B: The optional dc power supply unit is not required. The DF interface harness is not required either.	N230: The optional dc power supply unit and the DF interface harness are installed on the machine at the factory.
3	Duplex Installation	Pigeon A: The optional dc power supply unit (A525) is required. The duplex harness is an accessory of the duplex unit.	N220: The optional dc power supply unit (A494) is required. The duplex interface harness is an accessory of the optional dc power supply unit.
		Pigeon B: The optional dc power supply unit is not required. The duplex interface harness is an accessory of the duplex unit.	N230: The optional dc power supply unit and the duplex interface harness are installed on the machine at the factory.
	Drum		
1	Drum	The drum is common with that of the A7 and N440 series. The expected yield is increased to 80K copies.	The expected yield is 60K copies.

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
	Drum Charge		
1	Vp Correction	The interval of the grid voltage increment is changed as the drum changes. Drum Counter — Vp Correction Factor 0 to 1,999 copies — ±0 volt Over 2,000 copies — –20 volts	Drum Counter — Vp Correction Factor 0 to 999 copies — ±0 volt 1,000 to 1,999 copies — –20 volts Over 2,000 copies — –40 volts
	Optics		
1	1st Scanner	The configuration of the main and sub reflectors is changed. The proportion of the light reflected from the main and sub reflectors is almost 50%. Under this condition, both the lead and trail edges of the pasted parts of an original will not make shadows. This mechanism is the same as for the N440 series.	The light intensity reflected from the main reflector is stronger than that reflected from the sub reflector (about 65% to 35%).
2	Dirty Background Copy	To prevent the dirty backgrounds on copies caused by dust accumulated on optics parts, the following items are modified. 1) The toner shield glass is removed and a green color filter is installed on the lens unit. 2) V_L correction is added. The exposure voltage increases at set intervals of the machine on time.	—
3	Drum Wear Correction	The interval of the exposure lamp voltage increment is changed because the drum is a new type. Drum rotation time — Change of exposure lamp data 0 to 24h — ±0 25 to 49h — +1 50 to 74h — +2 75 to 99h — +3 More than 99h — +4	Drum rotation time — Change of exposure lamp data 0 to 9h — ±0 10 to 19h — +1 20 to 29h — +2 : — : : — : More than 80h — +8

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
4	Scanner Motor Drive Circuit	The scanner motor drive circuit is located on the ac drive board. The main board sends the control signal to the scanner motor drive circuit to regulate the scanner motor speed.	The main board directly controls the scanner motor.
	Development		
1	Bias Voltage in ADS mode	The number of base bias voltage levels corresponding to the ADS output voltage is increased (6 levels). This change will minimize the possibility of dirty background copies with the various originals. This change also helps to prevent dirty background copies caused by dust accumulated on the exposure glass, 1st, 2nd, and 3rd mirrors.	4 levels
2	Development Unit Set Sensor	No	Yes
	Toner Density Detection And Toner Supply		
1	Black Toner End Detection	The ID sensor is used for black toner end detection. The black development unit for the Pigeon series cannot be used for the N220 series. The toner end detection for the color toner is the same as that of the N220 series.	The toner end sensor is used for both black and color toner end detection. The ID sensor is used as a back-up system
2	Black Toner End Recovery	If the front cover is opened and closed, or the main switch is turned off and on in the near end and toner end conditions, no copy can be made. For the color toner, only one copy can be made (same as for the N220 series).	Only one copy can be made in black and color.
	Cleaning		
1	Cleaning Blade	The plate on the rubber blade is removed. (The plate minimizes the noise from vibration at high temperature.)	—

No.	Section/Item	Pigeon A and B (A110 and A111)	N220 and N230 (A048 and A054)
	Paper Feed		
1	Paper Size Detection in 2nd and 3rd Feed Station	The paper size switches are actuated by a paper size detection block. To change the paper size, it is necessary to set the paper size detection block of the paper tray to match the paper size.	When the paper end guide is pushed against the paper stack, the actuator plate slides into position and actuates the appropriate paper size switches.
2	2nd and 3rd Paper Feed Roller	To achieve 22 CPM from the 3rd paper feed station, the stop angle of the paper feed roller is changed. To prevent the corner of the feed roller from hitting the paper stack when the paper tray is pulled out, the corner of the paper feed roller is cut.	—
3	Corner Separators on Paper Tray	To reduce the occurrence of dog ear and double feed, the shape of the corner separators on the paper tray is changed.	—
4	Tray Lock Solenoid	No U7 is displayed when the duplex unit is opened during the duplex operation.	Yes
	Others		
1	RAM Clear	To prevent the RAM clear problem, the following items are modified. 1) To minimize the fluctuation of electrical ground due to electrical noise, the main board is secured by four ground screws. 2) The interface circuit for the optional equipment is on the main board.	—

MAJOR UNIQUE PARTS FOR PIGEON SERIES
(Compare with N220 Series)

PM Parts

Parts Number	Description	Remarks
A0699510	Drum	Common with the A7 series
A0063570	Cleaning Blade	Common with the F11
A1109500	Paper Feed Roller (4 pcs/set) for 2nd and 3rd feed stations.	This roller will be used for the N220 series.
AA010072	Ozone Filter	This ozone filter will be used for the N220 series.

Electrical Parts

Parts Number	Description	Remarks
A1105160	Main Board for Pigeon A	
A1115160	Main Board for Pigeon B	
AZ230039	DC Power Supply Board for Pigeon B	
A1115520	AC Drive Board - 115 V	
A1115620	AC Drive Board - 220 V	
AZ320069	Power Pack - CC/Grid/Bias	
AX530017	Exposure Lamp - 115 V	
AX530016	Exposure Lamp - 220 V	
A1105235	Erase Lamp	
AX440066	Fusing Lamp - 115 V	
AX440067	Fusing Lamp - 220 V	
A1105640	Noise Filter Board (for 220 V only)	
AX200095	Registration Clutch Relay Roller Clutch	
A1105214	Scanner Motor	
A1105550	Operation Panel Ass'y - LT, Pigeon A (Ricoh)	
A1115551	Operation Panel Ass'y - LT, Pigeon B (Ricoh)	
A1105650	Operation Panel Ass'y - A4, Pigeon A (Ricoh)	
A1115651	Operation Panel Ass'y - A4, Pigeon B (Ricoh)	
A1106692	Operation Panel Ass'y - Pigeon A (SAVIN)	
A1116692	Operation Panel Ass'y - Pigeon B (SAVIN)	
A1106492	Operation Panel Ass'y - LT, Pigeon A (GES)	

Parts Number	Description	Remarks
A1116492	Operation Panel Ass'y - LT, Pigeon B (GES)	
A1106292	Operation Panel Ass'y - A4, Pigeon A (GES)	
A1116292	Operation Panel Ass'y - A4, Pigeon B (GES)	
A1106094	Operation Panel Ass'y - Pigeon A (Infotec)	
A1116094	Operation Panel Ass'y - Pigeon B (Infotec)	

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