Chapter 8 Service Functions

8-1. Error codes 8-1

8-2. User setting mode 8-4
8-2-1. Setting procedure 8-4
8-2-2. Setting item list 8-4

8-3. Service mode 8-6
8-3-1. Entering the service mode 8-6
8-3-2. 25 mode 8-7
8-3-3. 36 mode 8-9
8-3-4. 47 mode 8-11

8-4. Backup data 8-13

8-5. Automatic paper size detection 8-13

8-6. General operation mode 8-14

8-1. Error codes

Order of display priority	Code	Symptom	Cause	Unit operation	Releasing method
1	F34	Fusing high temperature abnormality	* The fusing temperature exceeds the specified temperature. (Detection temperature = 225°C)	* Copy operation impossible. * Main unit instantaneously stops. * Main relay turns OFF.	* 25-47 * Power ON/ OFF
2	F35	Fusing low temperature abnormality	* The unit does not warm up even after the set time (60 sec.) has passed from the warm up start. * After warming up, the fusing lamp does not turn OFF for the specified time (30 sec.) or more.	* Copy operation impossible. * Main unit instantaneously stops. * Main relay turns OFF.	* 25-47 * Power ON/ OFF
3	F36	Fusing sensor abnormality	* Fusing low temperature/thermistor open/wire breakage. * The temperature does not exceed -5°C even after 10 sec. from the warm up start.	* Copy operation impossible. * Main unit instantaneously stops. * Main relay turns OFF.	* 25-47 * Power ON/ OFF
4	F43	AVR abnormality	* The exposure lamp error signal is ON continuously for 15 sec. or more. (The lamp is continuously lit, or the lamp or temperature fuse is blown.) * The exposure lamp does not light. (For two seconds)	* Copy operation impossible. * Main unit instantaneously stops. * Main relay turns OFF.	* Power ON/ OFF
5	F54	Fan motor lock	* The fan's unlock signal is detected for two continuous seconds while the fan is operating.	* Copy operation impossible. * Main unit instantaneously stops. * Main relay turns OFF.	* Power ON/ OFF
⚠1 6	F49	SDH temperature abnormality	* When using the SDH, the platen temperature rises to the specified temperature.	* Instantaneous stop.	* Power ON/ OFF
7	F41	Scanner return abnormality	* The Scanner HP sensor does not turn ON even after a set time passed from the return drive ON.	* Copy operation impossible. * Main unit instantaneously stops * Main relay turns OFF.	* Power ON/ OFF
8	F42	Scanner feeding abnormality	* The Scanner HP sensor does not turn OFF even after a set time passed from the feed drive ON.	* Copy operation impossible. * Main unit instantaneously stops * Main relay turns OFF.	* Power ON/ OFF
9	F52	Main motor drive abnormality	* The unlock signal is detected for one continuous second during the main motor drive.	* Copy operation impossible.. * Main unit instantaneously stops * Main relay turns OFF.	* Power ON/ OFF
10	F45	Lens drive abnormality	* The initialization is not completed within a set time during the lens drive motor drive.	* Copy operation impossible. * Main unit instantaneously stops * Main relay turns OFF.	* Power ON/ OFF
11	F26	Developer initialization abnormality	* Developing unit initialization error	* Copy operation impossible. * Main unit instantaneously stops.	* Insialize of Developing unit
12	F50	Engine section EEPROM abnormality	* Engine section EEPROM access error	* Main unit instantaneously stops.	* Power ON/ OFF
13	P51	Upper cover open	* The upper cover is open.	* Copy operation impossible. * Main unit instantaneously stops.	* Close the upper cover.
14	J32	Fusing paper exit jam	* The JAM2 sensor does not turn OFF within 2.85 to 3.13 seconds after JAM1 sensor turned OFF. (During copying) * Paper on the JAM2 sensor. (When stationary)	* Instantaneous stop * The fusing heater turns OFF.	* Open the upper cover and remove the jammed paper.

Order of display priority	Code	Symptom	Cause	Unit operation	Releasing method
15	J16	Paper feed jam	* Paper on the JAM1 sensor. (Only when stationary)	* Maintains the stop state. * The fusing heater turns OFF.	* Open the jam lid on the side of the unit, and remove the jam paper. * Then, open and close the upper cover.
16	J31	Conveyance jam	* The JAM2 sensor (fusing paper exit sensor) does not turn OFF within 2.85 to 3.54 sec. after the regist clutch turned ON.	* Instantaneous stop * The fusing heater turns OFF.	* Open the upper cover and remove the jam paper.
17	J61	SDH open	* The SDH is open while SDH is driven.	* The SDH instantaneously stops. * Operation stops after the previous paper exits.	Close the SDH cover
18	J62	SDH jam	* Jam during the SDH document feed, conveyance or exit.	* The SDH instantaneously stops. * Operation stops after the previous paper exits.	* Remove all documents from the SDH once.
19	J11	Paper feed jam	* Paper is incorrectly supplied from the unit standard cassette (upper cassette). * The paper does not reach the JAM1 sensor within 1.30 sec. after the upper cassette paper feed solenoid turned ON.	*Operation stops after the previous paper exits.	* Open the jam lid on the side of the unit, and remove the jam paper. * Then, open and close the upper cover.
20	J12	Paper feed jam	* Paper is incorrectly supplied from the operation cassette feeder (lower level). * The paper does not reach the JAM1 sensor within 3.21 sec. after the lower level paper feed solenoid turned ON.	* Operation stops after the previous paper exits.	* Open the cassette feeder or jam lid on the side of the unit, and remove the jam paper. * Then open and close the upper cover.
21	P20	Drum cartridge not mounted	* The drum cartridge is not installed.	* Copy operation impossible.	* Mount the drum cartridge.
△1 22	P20	Developing unit not mounted	* The developing unit is not installed. * The recycle pipe is not set.	* Copy operation impossible.	* Mount the developing unit. * Set the recycle pipe.
23	P26	Developing unit initialization	* The developing unit is not initialized.	* Copy operation impossible.	* Initialize the developing unit.
24	P24 (Blink)	Change drum	*This appears to indicate that the drum must be replaced when 500 sheets have been copied after the check drum display.	* Copy operation stops after the previous paper exits.	* Replace and initialize the drum.
25	P29 (Blink)	Change developer	* This appears to indicate that the developing unit must be replaced when the toner is emptied after the check developer display.	* Copy operation stops after the previous paper exits.	* Replace and initialize the developing unit.

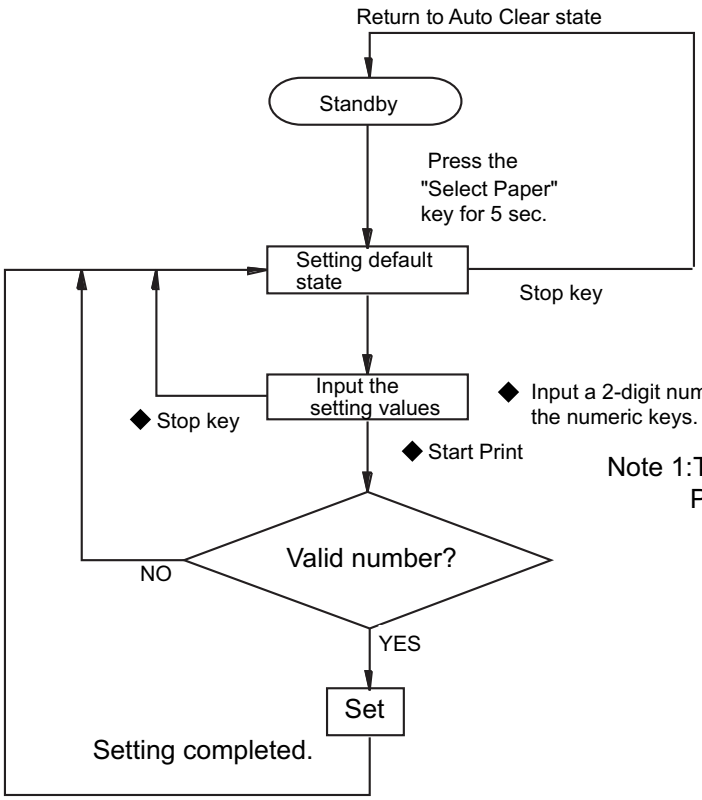
Order of display priority	Code	Symptom	Cause	Unit operation	Resetting method
26	P25	Supplying toner	* The toner level is low. * A document with a high black ratio was continuously copied.	* The copy operation is suspended. After forced supply, the remaining copies are automatically made.	* Automatically reset. Note when there is no toner left in the core, Toner empty (P25 blink) will appear.
△1 27	P49	Cooling SDH	* When using the SDH, the platen section rose to the specified temperature.	* The copy operation is suspended to cool the unit. * The copy operation will resume when the unit cools to the specified temperature.	* Automatically reset.
28 (Note 1)		Out of paper	* No paper in the selected cassette.	* Copy operation stops after the previous paper exits.	* Supply paper.
29 (Note 3)	P25 (Blink)	Toner empty	* Toner empty	* After copying 30 sheets, copy operation stops according to the toner empty.	* Supply toner.
30 (Note 2)	P27	Check developer/ drum	* This appears when check drum and check developer occur simultaneously.	* This is only a display. The copy operation will continue.	* If the change developer or change drum display appears, follow the instructions.
31 (Note 2)	P24	Check drum	* This indicates that the No. of copies made by the drum has reached 24500 sheets, and the drum replacement interval is nearing.	* This is only a display. The copy operation will continue.	* When the change drum display appears, replace and initialize the drum.
32 (Note 2)	P29	Check developer	* This indicates that the No. of copies made with the developer has reached 25000 sheets, and the developer replacement interval is nearing.	* This is only a display. The copy operation will continue.	* When the change developer display appears, replace and initialize the developing unit.
33 (Note 3)	P11	Upper cassette paper size error	* The size setting for the upper cassette is incorrect.	* After the copy operation is completed, a warning will appear. However, the copy operation is not be prohibited.	* Set the correct size for the upper cassette.
34 (Note 3)	P12	Lower cassette paper size error	* The size setting for the lower cassette is incorrect.	* After the copy operation is completed, a warning will appear. However, the copy operation is not be prohibited.	* Set the correct size for the lower cassette.

(Note 1) This is not displayed by the code.The cassette LED will blink.
(Note 2) This appears at Auto Clear or when the power is turned ON. The error display will go out when the numeric keys, Stop key or Copy key are pressed.
(Note 3) This is displayed again at Auto Clear or when the power is turned ON after the copy operation is completed. The error display will go out when the numeric keys, Stop key or Start Print key are pressed.

8-2. User setting mode

8-2-1. Setting procedure

◆ : Indicates key operation.



Note 1:The key operation is ignored if press the "Start Print" key after the input of the 1-digit number.

Note 2: The “Magnification”, “Enlarge”, “Reduce” and “Select Paper” keys are invalid in this mode.
Note 3: Auto Clear and Power Save operations are invalid in this mode.

8-2-2. Setting item list

C-00 to C-09: Standard cassette paper size setting	
Item No.	Details
C-00	LT
C-01	LG
C-02	A4
C-03	B5
C-04	A5
C-05	F4-1: 8X13"(203X330mm)
C-06	F4-2: 8.5X13"(216X330mm)
C-07	F4-3: 8.25X13"(210X330mm)
C-08	F4-4: 206X337mm
C-09	-

△1

Option cassette paper size setting	
Item No.	Details
C-10	LT
C-11	LG
C-12	A4
C-13	B5
C-14	A5
C-15	F4-1: 8X13"(203X330mm)
C-16	F4-2: 8.5X13"(216X330mm)
C-17	F4-3: 8.25X13"(210X330mm)
C-18	F4-4: 206X337mm
C-19	-

C-20 to C29: –	
Item No.	Details
C-20	
C-21	
C-22	
C-23	
C-24	
C-25	
C-26	
C-27	
C-28	
C-29	

⚠1

C-30 to 33: Auto reset time	
Item No.	Details
C-30	30 sec.
C-31	60 sec.
C-32	90 sec. (Default)
C-33	120 sec.
C-34	
C-35	
C-36	
C-37	
C-38	
C-39	

C-40 to C-42: Counter read	
⚠1 Item No.	Details
C-40	Total counter read
C-41	Drum counter read
C-42	Developer counter read
C-43	
C-44	
C-45	
C-46	
C-47	
C-48	
C-49	

The display for each counter is displayed in the order of 3 high-order digits (3 sec.), blank (1 sec.) and 3 low-order digits (3 sec.)

C-50 to C51: Initialization	
Item No.	Details
C-50	Drum initialization (Note 1)
C-51	Developer initialization (Note 2)
C-52	
C-53	
C-54	
C-55	
C-56	
C-57	
C-58	
C-59	

C-60 to C62: Automatic paper length check	
Item No.	Details
C-60	OFF (Note 3)
C-61	ON (Note 4)
C-62	ON (Default) (Note 5)
C-63	
C-64	
C-65	
C-66	
C-67	
C-68	
C-69	

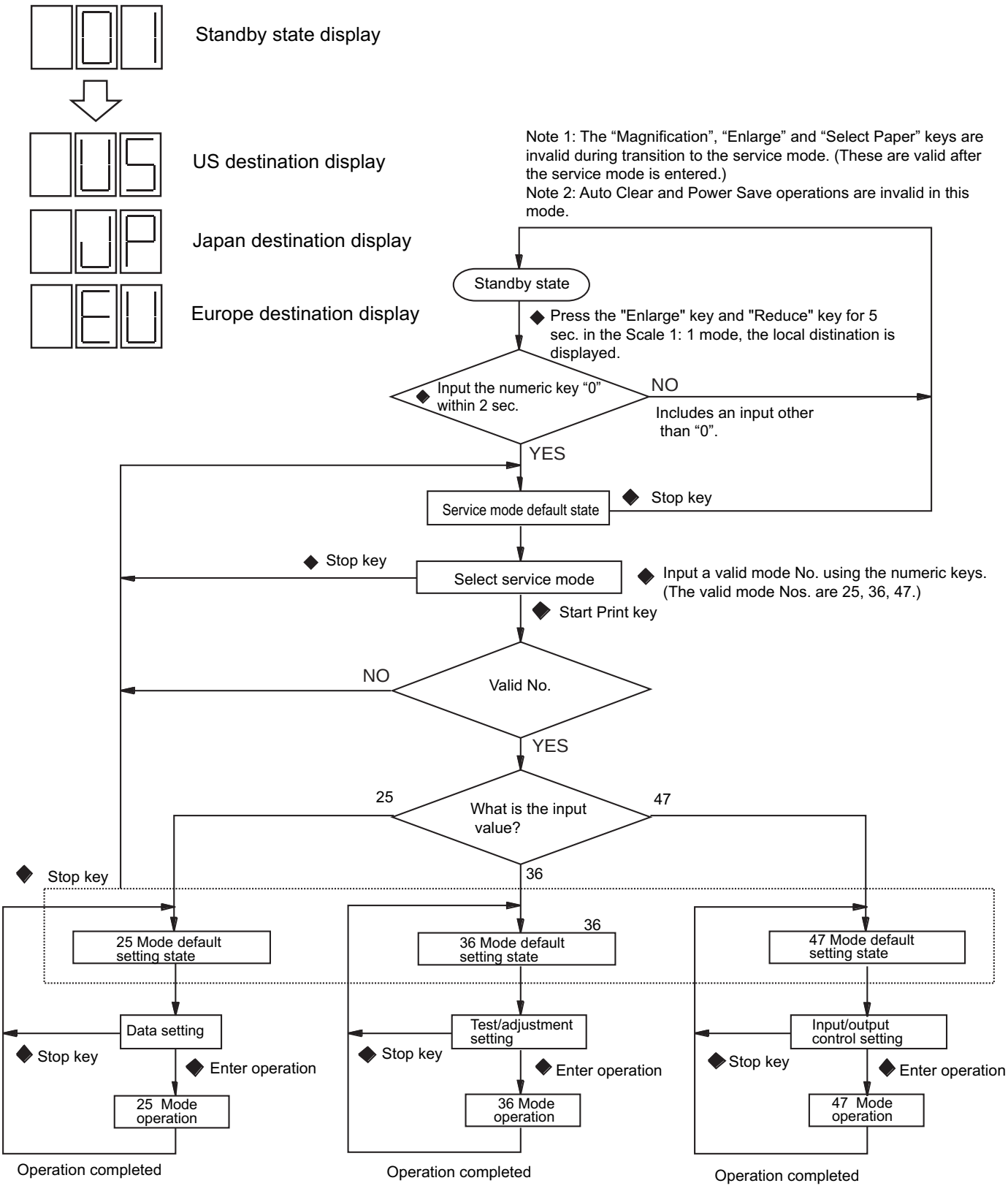
(Note 1) Aging the drum and reset the drum counter.
(Note 2) Adjust the L detection data and reset the developer counter.
(Note 3) The side erase lamp is controlled with the user registered paper size.
(Note 4) The side erase lamp at the first copy is controlled with the user registered paper size during continuous copies. From the second copy, it is controlled with the detected paper size at the first copy. The paper size is detected with the paper passing time on JAM1 sensor.
(Note 5) The side erase lamp at the first copy is controlled with LT size during the continuous copies. From the second copy, it is controlled with the detected paper size at the first copy. The paper size is detected with the paper passing time on JAM1 sensor.

8-3. Service mode

8-3-1. Entering the service mode

◆ : Indicates key operation.

The destination display appears during and after transition to the service mode.



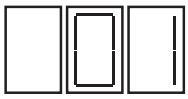
8-3-2. 25 mode

25 mode is used to change the data written in the involute memory.

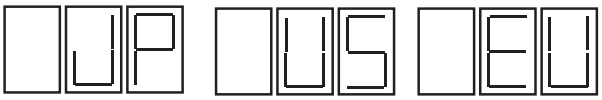
Operation example: To change the address 35 data. (Example: 6 ->5)

◆ : Indicates key operation.

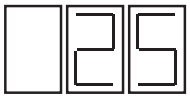
Standby state display



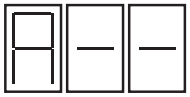
Destination display



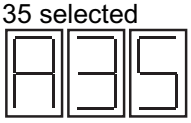
State with 25 mode elected



25 Mode address input wait



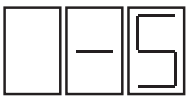
Example: State with address 35 selected

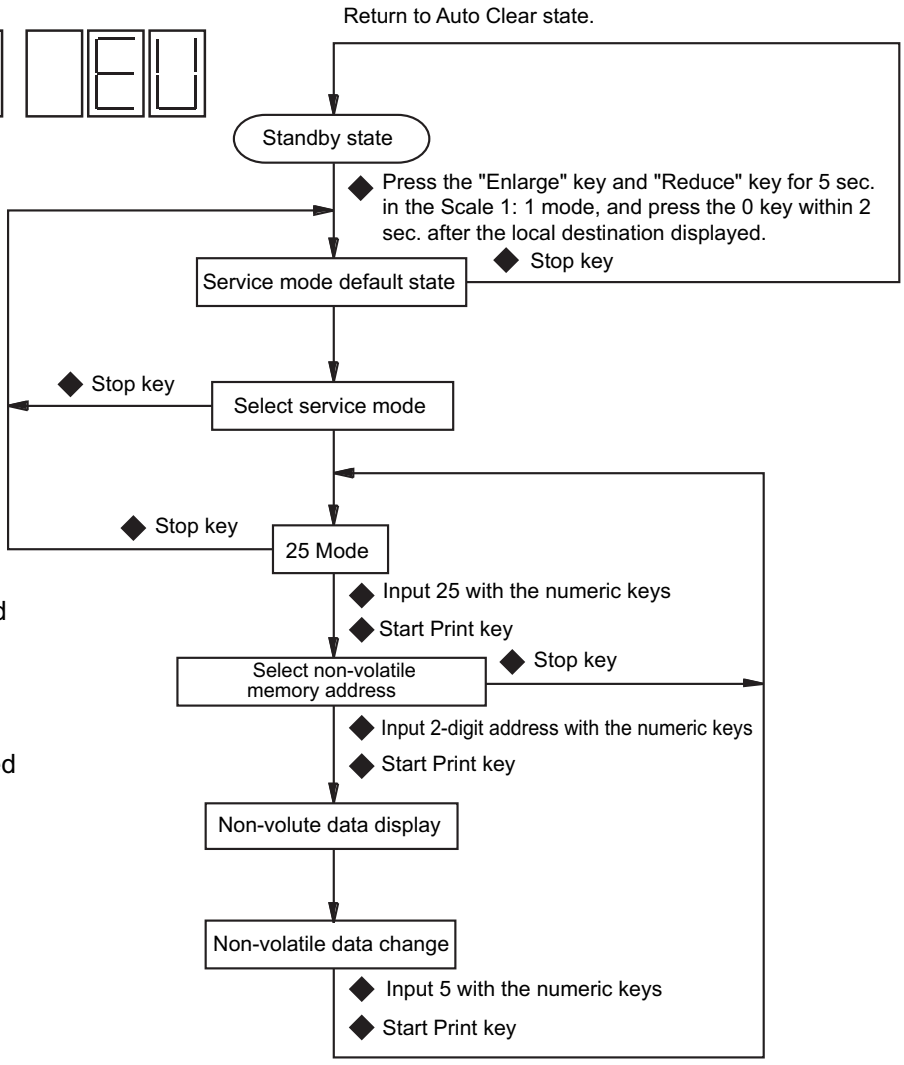


Example: Data already registered



Example: State with data changed





25 mode list

	Address	Details	Setting value
	20	Setting for time to enter power save mode (spare) 1: Address 62 setting takes precedence 2: OFF 3: 60 min. 4: 120 min. 5: 240 min.	1 to 5 (default: 1)
1	30	Destination setting (Note 1) 1:Japan (Fixed scale: Japan, paper size default setting: A4) 2: US (Fixed scale: US, paper size default setting: LT) 3: Europe (Fixed scale: Europe, paper size default setting: A4)	1 too 3 (default:3)
	32	Total counter setting (10^5)	0 to 9
	33	Total counter setting (10^4)	0 to 9
1	34	Total counter setting (10^3)	0 to 9
	35	Total counter setting (10^2)	0 to 9
	36	Total counter setting (10^1)	0 to 9
	37	Total counter setting (10^0)	0 to 9
	39	Drum counter setting (10^5)	0 to 9
	40	Drum counter setting (10^4)	0 to 9
1	41	Drum counter setting (10^3)	0 to 9
	42	Drum counter setting (10^2)	0 to 9
	43	Drum counter setting (10^1)	0 to 9
	44	Drum counter setting (10^0)	0 to 9
	47	Reset fusing error (Reset by inputting "0", and turning power ON/OFF.) Fusing high temperature error (F34) detection (hardware) Fusing sensor error (F36) detection (hardware) Fusing high temperature error (F34) detection (software) Fusing low temperature error (F35) detection (software) Fusing sensor error (F36) detection (software)	0 (default) 1 3 4 5 6
1	62	Setting for time to enter power save mode (normal use) 1: 30 min. 2: 2 min. 3: 5 min.	1 to 3 (default: 1)
	80	Fusing temperature control setting 1: 182 ˚C 2: 185 ˚C 3: 188 ˚C 4: 190 ˚C 5: 193 ˚C	1 to 5 (default: 3)
	81	User/service selection setting for drum initialization and developer initialization 1: Released to user 2: Only service mode (47 mode) valid	1 to 2 (default: 1)
1	84	Toner density control setting 1: 5.5% 2: 6.0% 3: 6.5% 4: 7.0% 5: 7.5%	1 to 5 (default: 3)
	85	Developer count setting (10^5)	0 to 9
	86	Developer count setting (10^4)	0 to 9
1	87	Developer count setting (10^3)	0 to 9
	88	Developer count setting (10^2)	0 to 9
	89	Developer count setting (10^1)	0 to 9
	90	Developer count setting (10^0)	0 to 9

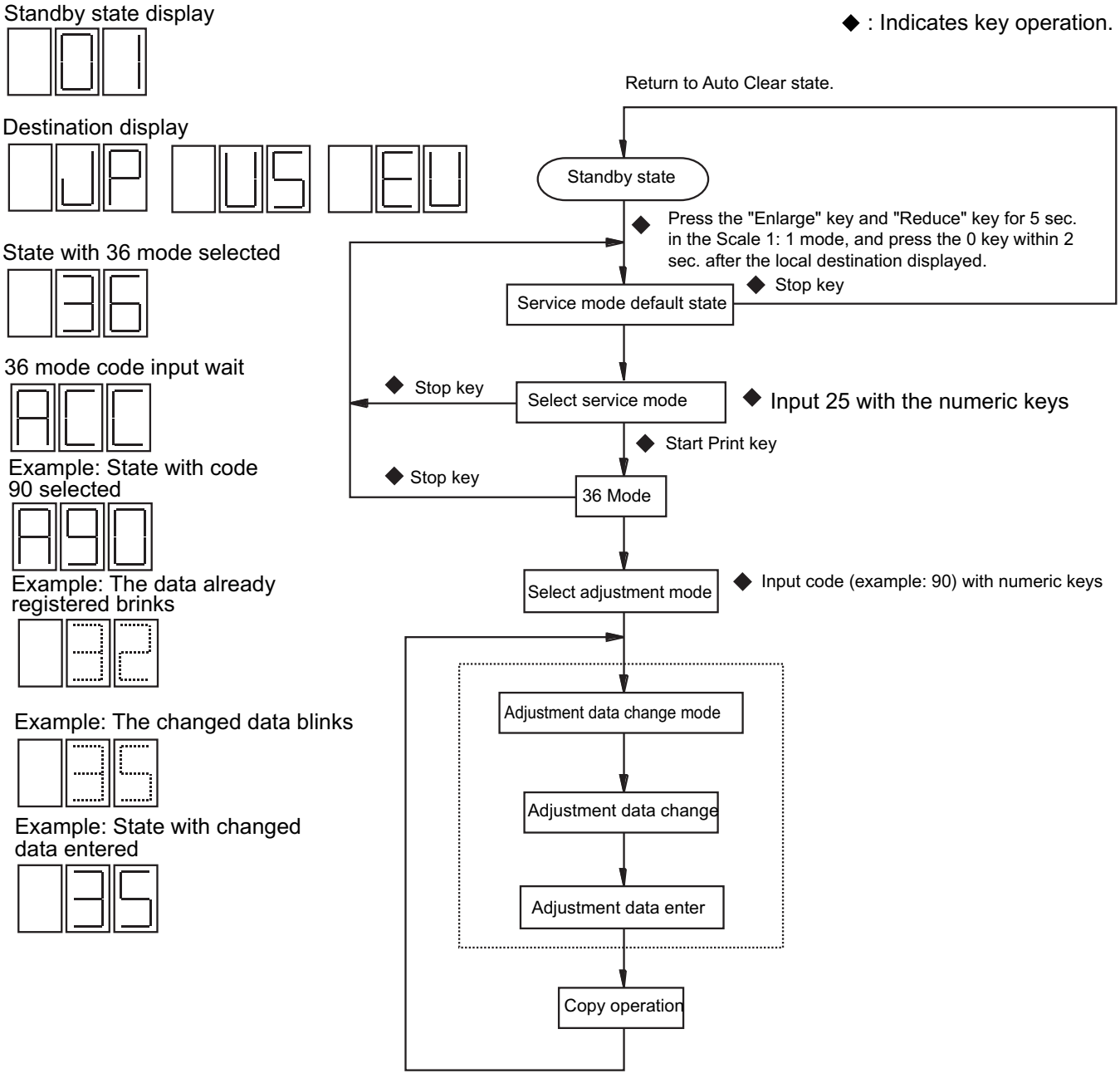
(Note 1) Fixed scale Japan: B5>A4(115%), B4>A4(82%), B4>B5(71%)
US: 5.5 x 8.5>8.5 x 11(129%), 8.5 x 14>8.5 x 11(77%)
Europe: A5>A4(141%), B4>A4(82%), A4>A5(71%)

8-3-3. 36 mode

36 mode is used to carry out the running test and to make various adjustments.

(Note) When doing the running test, close the upper cover. If the upper cover is open, the developing unit will be locked, or the scanner operation failure will occur.

Operation example: To carry out AVR adjustment (address 90) of the equal magnification MIN. position.



36 mode list

	Code	Details	Adjustment range
	01 02 10 11 12 13 14	No paper copy running (Mechanical counter: No count up) Copy running test (Mechanical counter: No count up) x100 copy running test (Mechanical counter: Count up) No paper copy running test (Mechanical counter: Count up) x100 no paper copy running test (Mechanical counter: Count up) Intermittent copy running test (Mechanical counter: Count up) Intermittent copy + no paper copy running test (Mechanical counter: Count up)	
△1	40	Paper leading edge transfer start timing adjustment Adjustment range: Approx. +9 ~ -13mm	01 to 64
△1	41	Paper trailing edge transfer end timing adjustment Adjustment range: Approx. +15 ~ -7mm	01 to 64
	86	AVR adjustment 1 Enlargement center (Light amount adjustment) Adjustment range: Approx. 43V ~ 67V	01 to 64
	87	AVR adjustment 2 Reduction center (Light amount adjustment) Adjustment range: Approx. 43V ~ 67V	01 to 64
	88	AVR adjustment 3 Life size Max. (Light amount adjustment) Adjustment range: Approx. 55V ~ 80V	01 to 64
	89	AVR adjustment 4 Life size Center (Light amount adjustment) Adjustment range: Approx. 43V ~ 67V	01 to 64
	90	AVR adjustment 5 Life size Min. (Light amount adjustment) Adjustment range: Approx. 30V ~ 55V	01 to 64
	91	Copy leading edge timing (Paper feed timing adjustment) Adjustment range: Approx. ±5mm	01 to 64
△1	92	Image leading edge erase Adjustment range: Approx. ±10mm	01 to 64
	93	Scanner speed adjustment (Vertical magnification adjustment) Adjustment range: Approx. ±6 mm in respect to A4 length	01 to 64
	95	Lens home position adjustment (Horizontal magnification adjustment) Adjustment range: Approx. ±6mm in respect to A4 width	01 to 64
	96	SDH copy leading edge timing(Document feed timing adjustment) Adjustment range: Approx. ±5mm	01 to 64
	97	SDH scanner speed adjustment (Vertical magnification adjustment) Adjustment range: Approx. ±6mm in respect to A4 length	01 to 64
△1	98	Image trailing edge erase Adjustment range: Approx. ±10mm in respect to default setting	01 to 64

Note 1: The Enlarge, Scale and Reduce mode is apply for codes 91 and 96.
Note 2: For codes 02 and 10, if the original is set to theSDH and operation is started, the SDH copy operation will take place. (No. of copies setting is invalid.)
Note 3: For codes 01, 11 and 12, if the SDH original sensor is turned ON and operation is started, no paper operation will also take place with the SDH.

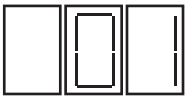
8-3-4. 47 mode

47 mode is used to check the input and output. The operation of each electrical part can be confirmed. This mode is also used to initialize the drum, developer and settings.

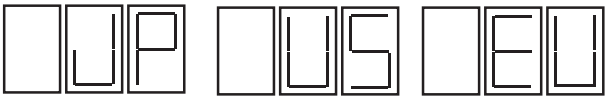
Operation example: To carry out the JAM2 sensor check (code 22).

◆ : Indicates key operation.

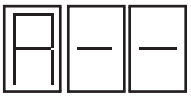
Standby state display



Destination display



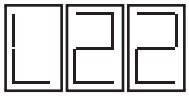
47 Mode code input wait



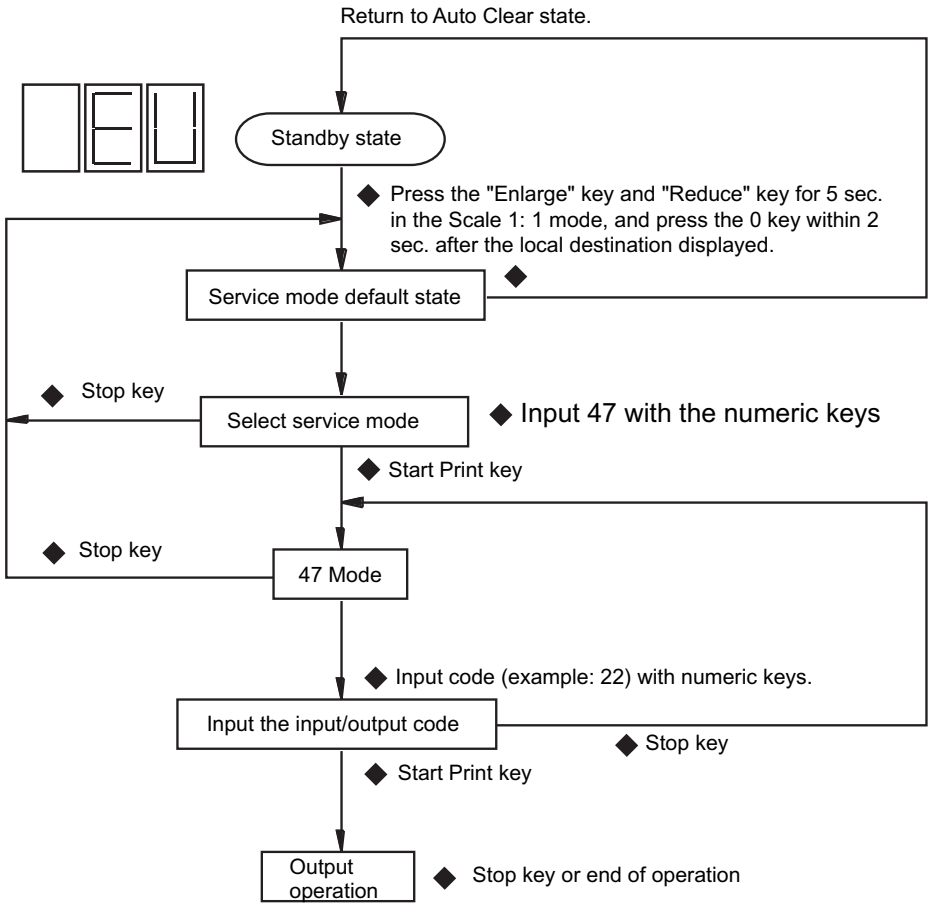
Example: State with code 22 selected



JAM2 sensor "OFF"



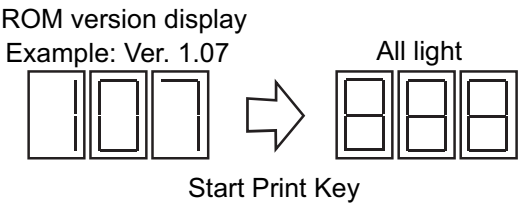
JAM2 sensor "ON"



Mode 47 list

Code	Input details	Output details
00		Exposure lamp continuous lighting (Mirror moves to shipping position after lit for 6 sec.)
△1 01		Toner motor forced rotation mode (Stops after 4 sec.)
△1 02		High voltage output (Adjustment not possible) (Charging) (Stops after 1 min. output)
△1 03		High voltage output (Adjustment not possible) (Transfer +) (Stops after 1 min. output)
△1 04		High voltage output (Adjustment not possible) (Transfer -) (Stops after 1 min. output)
20	JAM1 sensor input	
22	JAM2 sensor input	
30	Mirror HP sensor input	
31		Scanner running mode (Optical reciprocation drive) (Stops with Stop key)
32	Lens HP sensor input	
41		Developing unit running mode (Steps after 1 min.)
42		Cooling fan high-speed rotation (5 sec.)
43		Mechanical counter, count up (Counts one with each press of Start Print key)
48	ROM version read (After once Start Print key press)	All LEDs on the operation panel light (After two Start Print key presses) (Note 1)
49		All side erase lamps light (Goes out after 3 sec. or Stop key)
69		SDH scanner running mode
91		Drum initialization(Aging the drum and reset the drum counter)
92		Setting initialization (initial reset) (Note 2)
93		Developer initialization(Adjust the L detection data and reset the developer counter)

Note 1: When the Start Print key is pressed after inputting code 48, first the ROM version displays. When the Copy key is pressed again, the 7-segment LED and all LEDS on the other operation panels light.



Note 2: Initializied data
"Cassette paper size data", "Time data to enter Power save mode", "Auto clear time data", "Counter value", Drum counter value", "Developer counter value"," Developer initialization data","Fusing temperature selection data" are initializied.

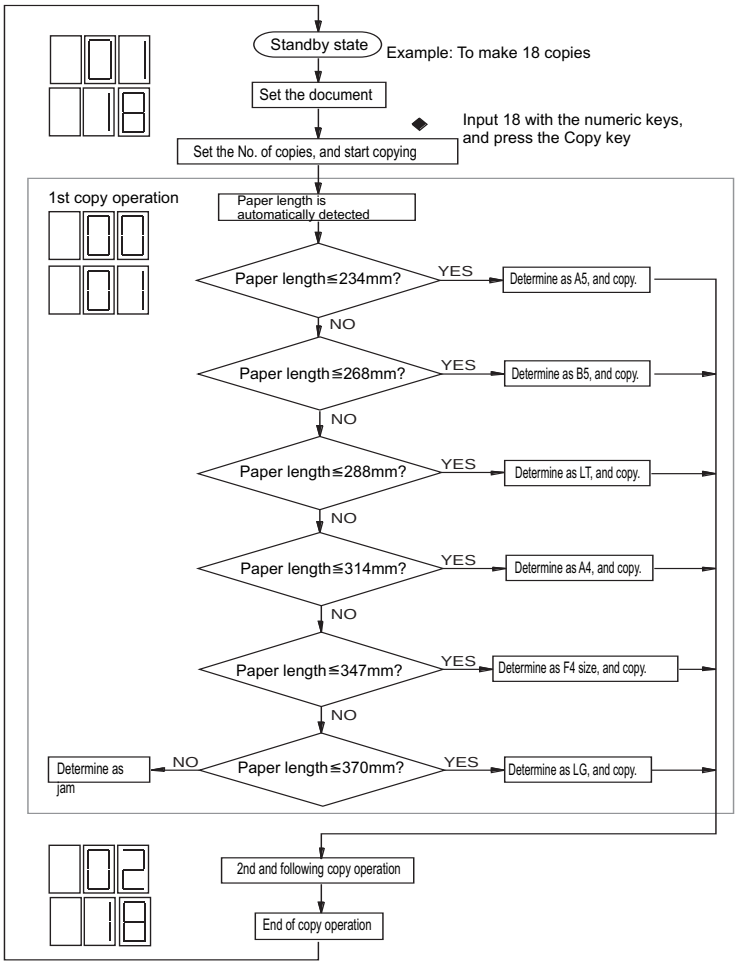
8-4. Backup data

The following data is backed up in the non-volatile memory (EEPROM) on the main CB(unit main).

⚠1 Data item	Setting method
Cassette paper size(U)	User setting mode C-00~08
Cassette paper size(L)	User setting mode C-10~18
Time to enter power save mode	25 mode: 20
Auto clear time	User setting mode C-30~33
Total counter value	25 mode: 32 to 37
Drum counter value	25 mode: 39 to 44
Developer counter value	25 mode: 85 to 90
Image leading edge timing value	36 mode: 91
Image leading edge erase amount adjustment value	36 mode: 92
Image trailing edge erase amount adjustment value	36 mode: 98
AVR adjustment value	36 mode: 86 to 90
Developer initialization data (L detection data)	Re-initialization
Toner density control selection value	25 mode: 84
Fusing temperature control selection value	25 mode: 80
Scanner speed adjustment value	36 mode: 93
Lens unit home position adjustment value	36 mode: 95
SDH copy leading edge timing value	36 mode: 96
SDH speed adjustment value	36 mode: 97
Destination setting value	25 mode: 30

Note 2: When the paper length is from 314mm to 347 mm, if the paper size set with the cassette paper setting and the detected paper size differ, an error code (P11, P12) will appear.

Note 3: When the paper size error code does not appear, the detected paper size will be detected. (The cassette paper setting's paper size will be reset.)



8-5. Automatic paper size detection

When the automatic paper size detection is selected with the user setting mode (C-61, 62), the paper length will be automatically checked by JAM 1 sensor.

Note 1: The paper length is detected during the first copy operation, so the 1st copy time will not satisfy 12CPM.
(When feeding from lower cassette.)

8-6. General operation mode

