Service Manual

MODEL : VCDM

REV. : 1.1

DATE : 2010. 09. 28

PULOON Technology Inc.

Revision History

Ver.	Date	Item		Edit
		Title	Details	
1.0	2010.04.16	Released		Y.H.KIM J.H.KIM S.G.JEON
1.1	2010.09.28	Changed	- Changed pictures (p6,9,18,20,22,24,33,44,45,46, 47,49,55,56,57,63,64,66,67, 68,69,75,76) - Changed Interface (RS232C,USB 2.0 → RS232C) - Changed DVT Sensor (PIE/PID-310→Photo Sensor) - Added 4 Denomination - Deleted Cash out sensor - Add Error Code 0x26	J.H.KIM S.W.KIM S.G.JEON Y.H.KIM

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1 PREVIEW

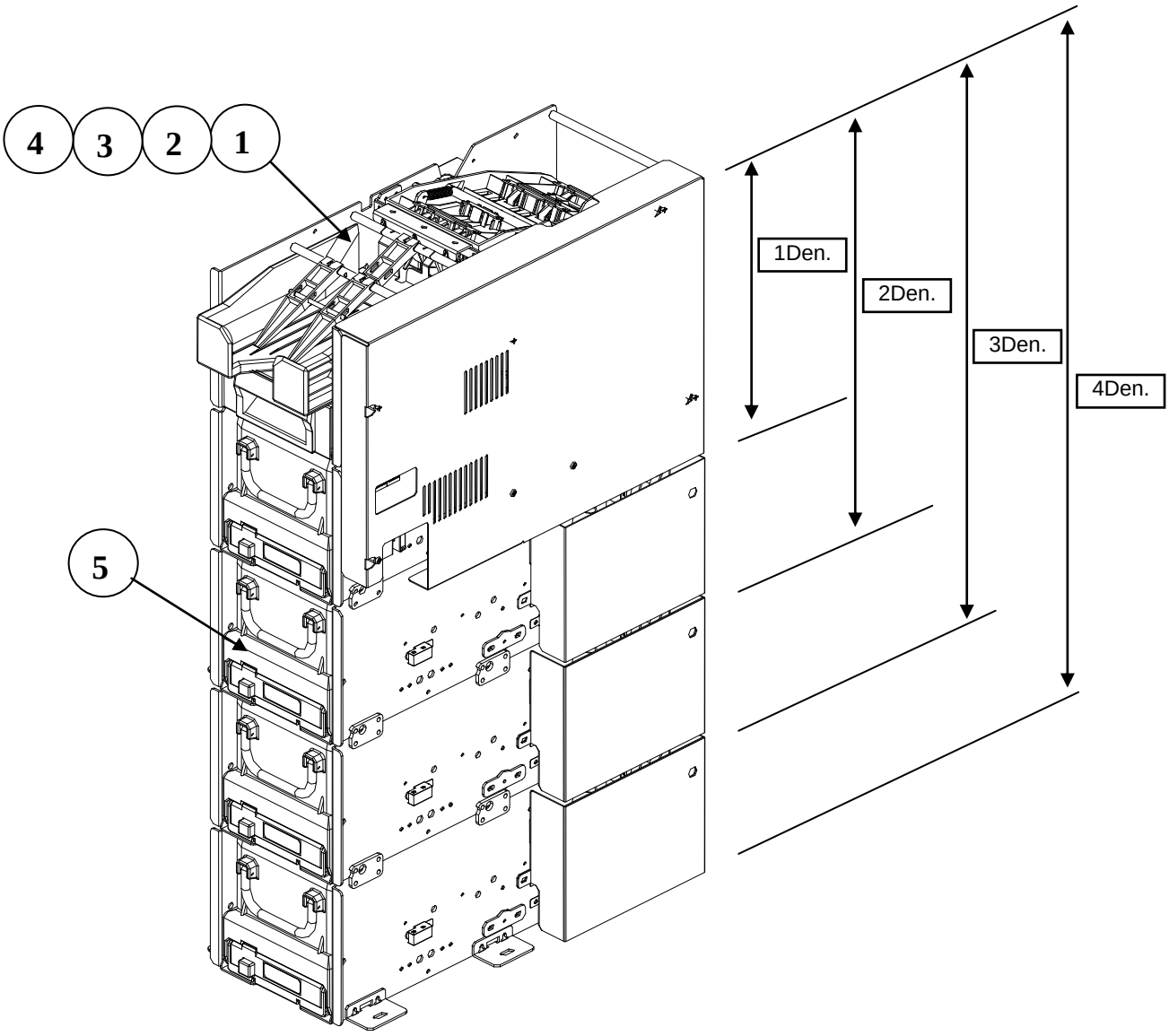
The document is user manual for service, repair and maintenance of VCDM.

2 BASIC SPECIFICATION AND STRUCTURE

2.1 BASIC SPECIFICATION

Spec	NO	Item	Details
General Specification	1	Denomination	1 / 2 / 3 / 4
	2	Cassette Capacity (mm)	60 mm
	3	Dispensing Speed (notes/sec)	3 (based on note to note)
	4	Note Size Available (mm)	Width: 120~165, Height: 62~82
	5	Double Note Detection	Ultrasonic Type
	6	Reject Capacity (notes)	Max 20 notes
	7	Access Type	Front Access Type
	8	Dimension (mm)	1 denomination: 169(W)x220(H)x349(D) 2 denomination: 169(W)x330(H)x349(D) 3 denomination: 169(W)x440(H)x349(D) 4 denomination: 169(W)x550(H)x349(D)
	9	Interface	RS232C
	10	Near End	Optional by Dip S/W 1) Disabled: All banknotes are dispensed. 2) Enabled: 5~15 of bankotes will be remained.
Electrical Specification	1	Rated Voltage	DC24V±10%
	2	Rated Consuming Current (A)	1) Standby Status : 0.28 2) Average Dispense Current : 2.6 3) Peak Current : 7.0 (120 ms)
Operation Specification	1	Operation Temperature (°C)	+0~+40
	2	Storage Temp (°C)	-10~+60
	3	Operation Humidity (%RH)	20~80
	4	Storage Humidity (%RH)	10~90

2.2 STRUCTURE

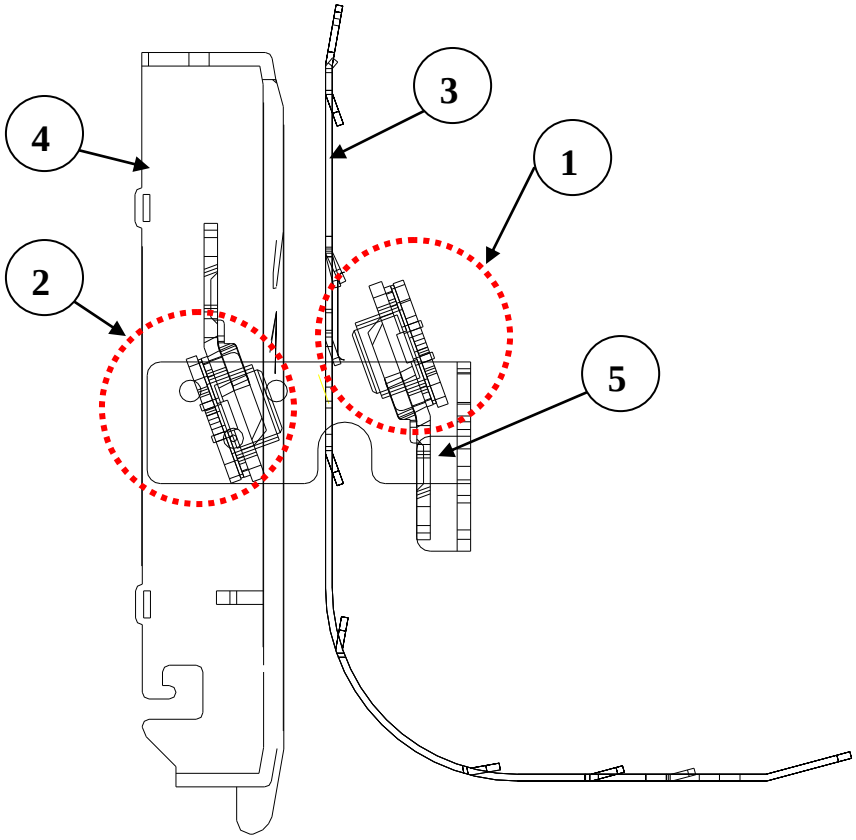


NO	PART NO	DESCRIPTION
1	B3001A0278	UNIT VCDM-100 MECHA
2	B3001A0279	UNIT VCDM-200 MECHA
3	B3001A0380	UNIT VCDM-300 MECHA
4	B3001A0280	UNIT VCDM-400 MECHA
5	B3001A0320	UNIT CASH CASSETTE VCDM V2

3 MAIN MECHANISM CONFIGURATION

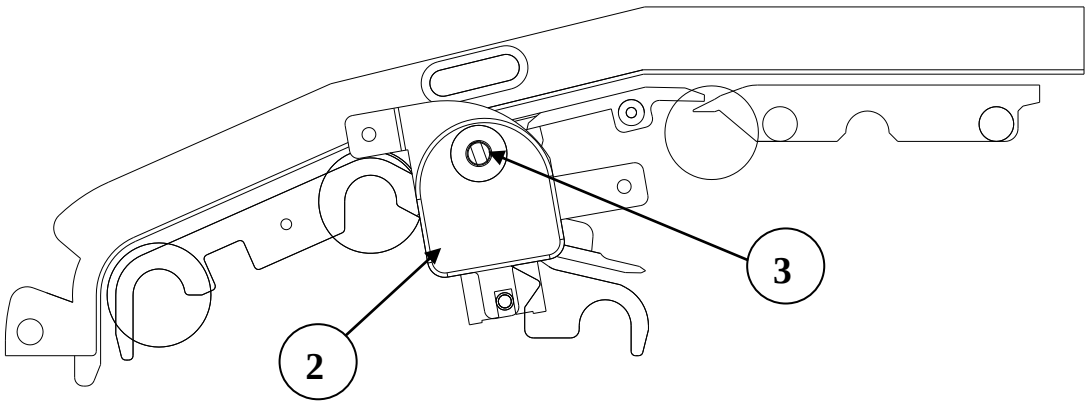
3.1 UNIT VCDM MECHA

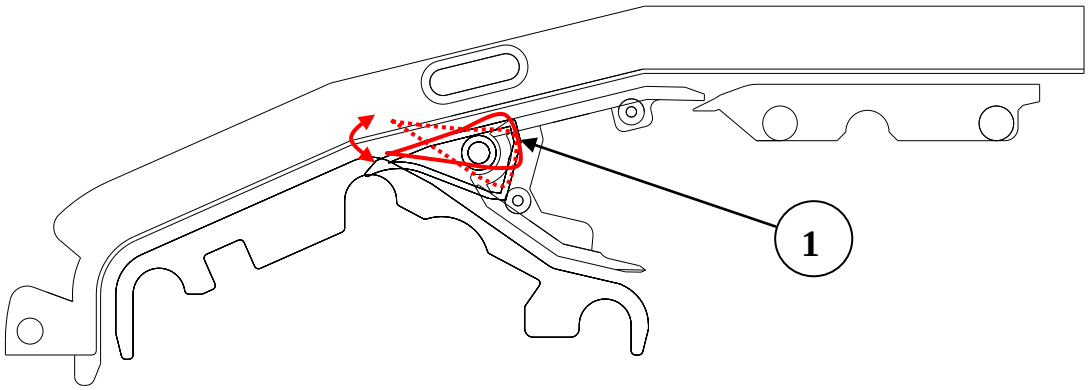
3.1.1 DOUBLE FEEDING DETECTION PART



NO	PART NO	DESCRIPTION	FUNCTION
1	RPA000049C	PWA SONAR EMIT	The mechanism detects whether double note exists or not on path during transfer as ultrasonic sensor transmission measuring the thickness and amplication
2	RPA000049D	PWA SONAR RCV	
3	B1604P0399	GUIDE CASH FEED SONIC VCDM	
4	B1604P0394	GUIDE CASH FEED 3 VCDM	
5	B1108P0654	BRACKET ULTRASONIC VCDM	

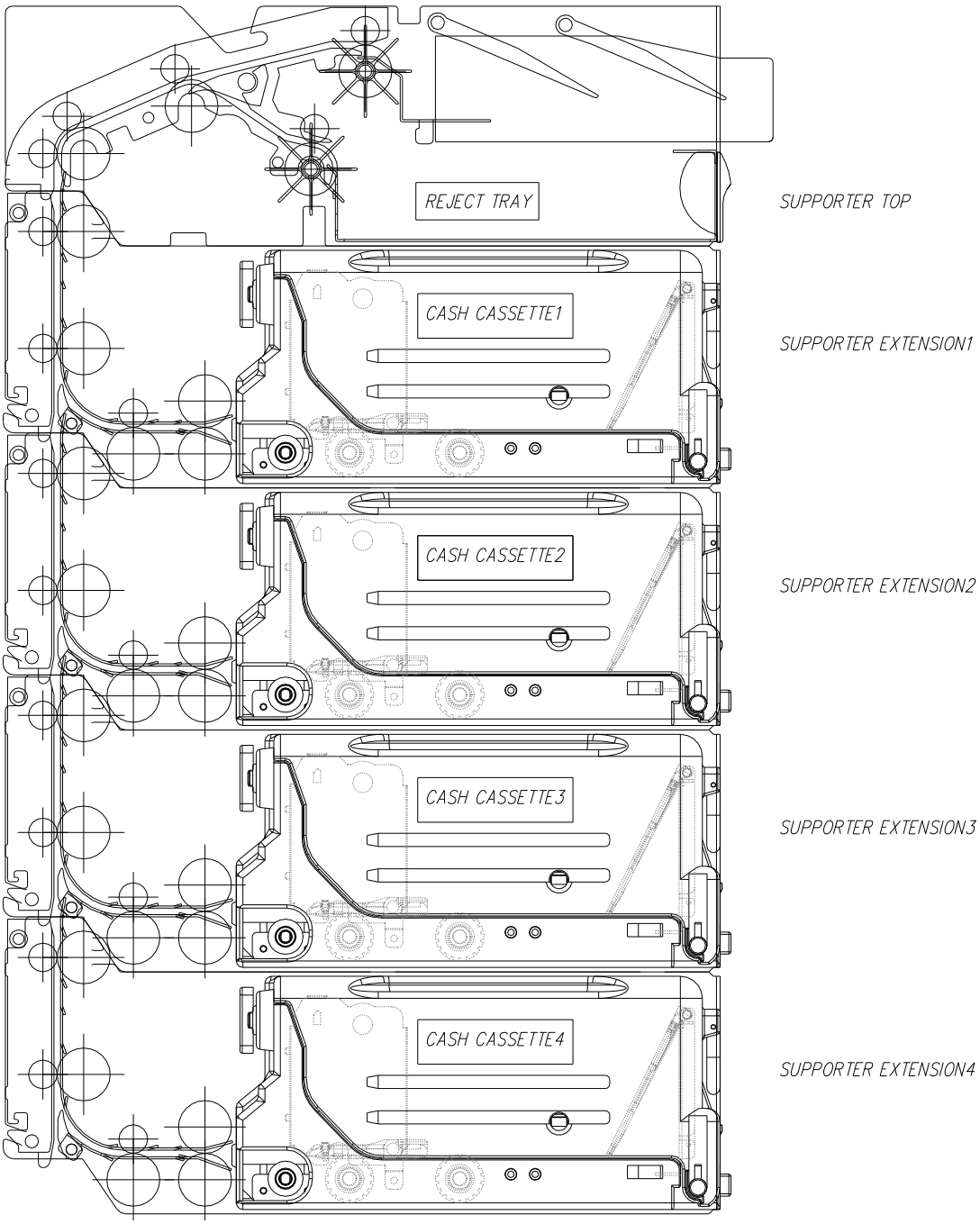
3.1.2 DIVERTING MECHANISM PART



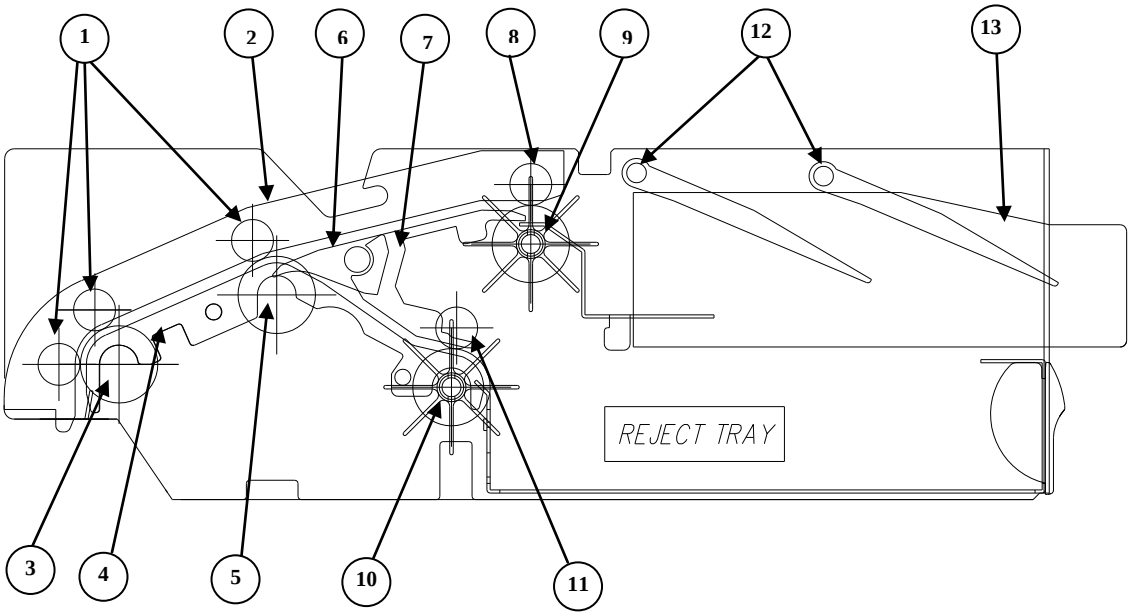


NO	PART NO	DESCRIPTION	FUNCTION
1	B1604P0397	GUIDE DIVERTER VCDM	When the damaged or doubled notes should be sent to Reject Tray, the mechasnism is activated by Swing Selector in order to divert the notes.
2	B2806P0025	SWING SELECTOR	
3	B2803P0806	SHAFT DIVERTER VCDM	

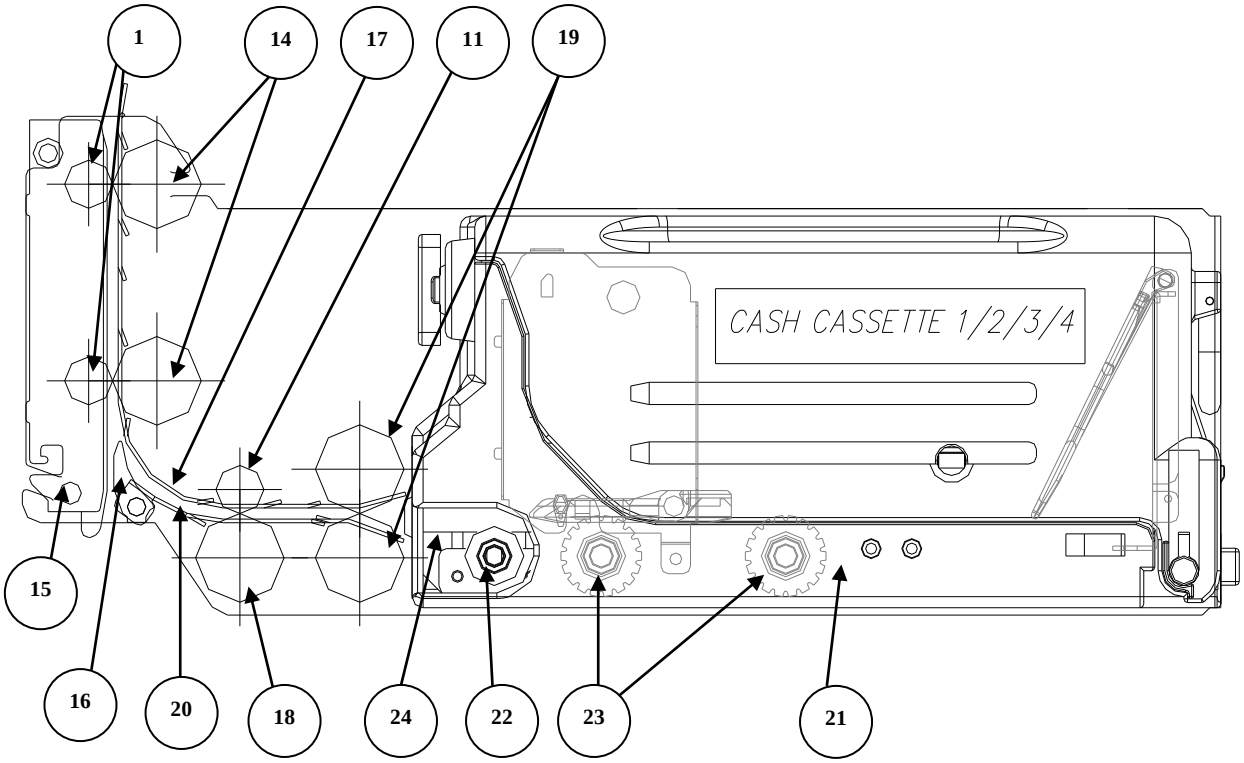
3.1.3 FEEDING PART



1) SUPPORTER TOP



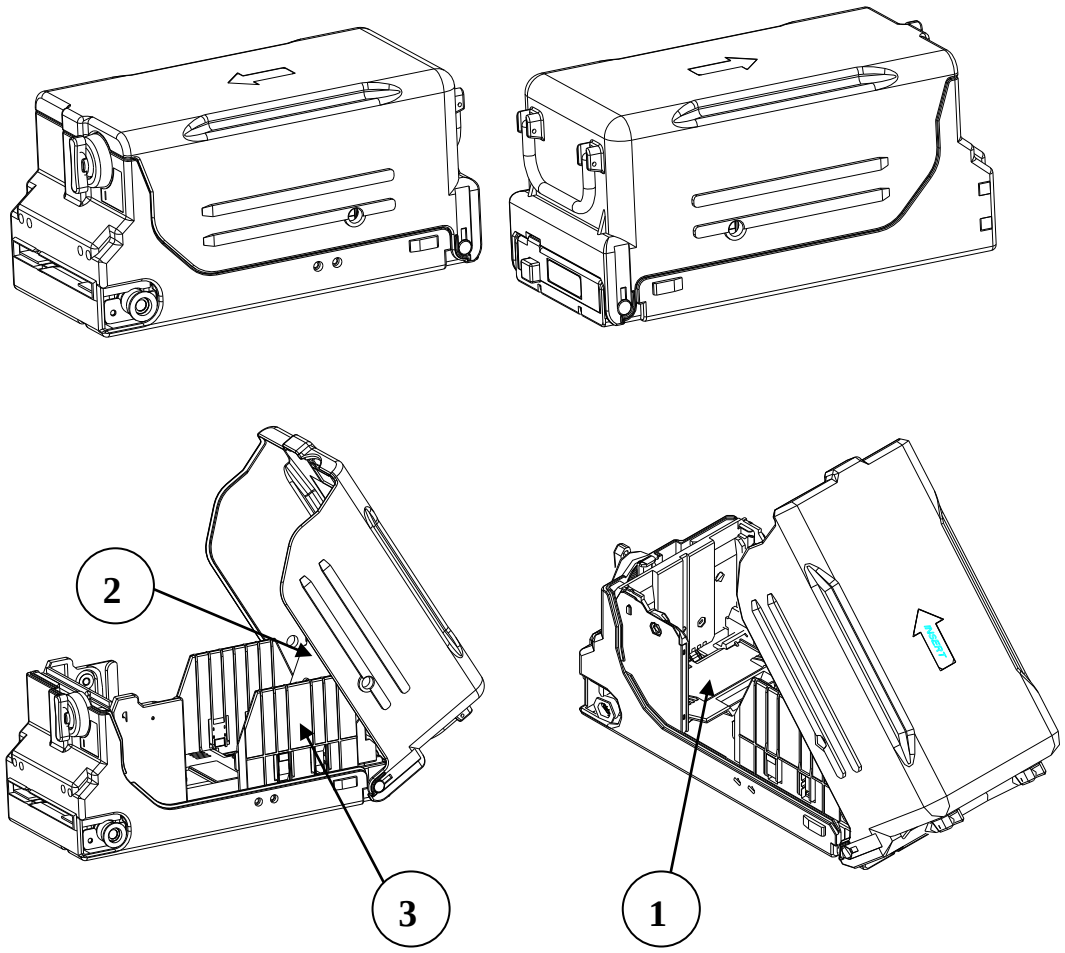
2) SUPPORTER EXTENSION 1/ 2/ 3/ 4



NO	PART NO	DESCRIPTION	FUNCTION
1	B2803P0813	SHAFT IDLE ROLLER VCDM	NOTE FEEDING
2	B1604P0396	GUIDE CASH FEED 5 VCDM	NOTE GUIDE
3	B2803A0827	SHAFT CASH FEED 4 VCDM	NOTE FEEDING
4	B1604P0395	GUIDE CASH FEED 4 VCDM	NOTE GUIDE
5	B2803A0830	SHAFT CASH FEED 7 VCDM	NOTE FEEDING
6	B2803P0806	SHAFT DIVERTER VCDM	NOTE REJECT
7	B1604P0393	SHAFT CASH FEED REJECT/EXIT	NOTE FEEDING
8	B2803P0814	SHAFT IDLE ROLLER CURL VCDM	NOTE FEEDING
9	B2803A0829	SHAFT CASH FEED 6 VCDM	NOTE FEEDING
10	B2803A0828	SHAFT CASH FEED 5 VCDM	NOTE FEEDING
11	B2803P0815	SHAFT IDLE ROLLER2 VCDM	NOTE FEEDING
12	B2803P0819	SHAFT HINGE CASH PRESS	NOTE STOP 1/2
13	B1108P0641	BRACKET PRESENTER2	NOTE STOP 3
14	B2803A0826	SHAFT CASH FEED 3 VCDM	NOTE FEEDING
15	B1604P0394	GUIDE CASH FEED 3 VCDM	NOTE GUIDE
16	B1604P0398	GUIDE IDLE DIVERTER VCDM	NOTE GUIDE
17	B1604P0399	GUIDE CASH FEED SONIC VCDM	NOTE GUIDE
18	B2803A0825	SHAFT CASH FEED 2 VCDM	NOTE FEEDING
19	B2803A0824	SHAFT CASH FEED 1 VCDM	NOTE FEEDING
20	B1604P0401	GUIDE CASH FEED 2 VCDM	NOTE GUIDE
21	B1207P0189	COVER BOTTOM CASSETTE	NOTE GUIDE
22	B2803A0820	SHAFT ASSY FEED VCDM	NOTE FEEDING
23	B2803A0821	SHAFT ASSY PICKUP VCDM	NOTE PICKUP
24	B1503P0329	FRAME BASE CASSETTE	NOTE PICKUP/FEED & GUIDE

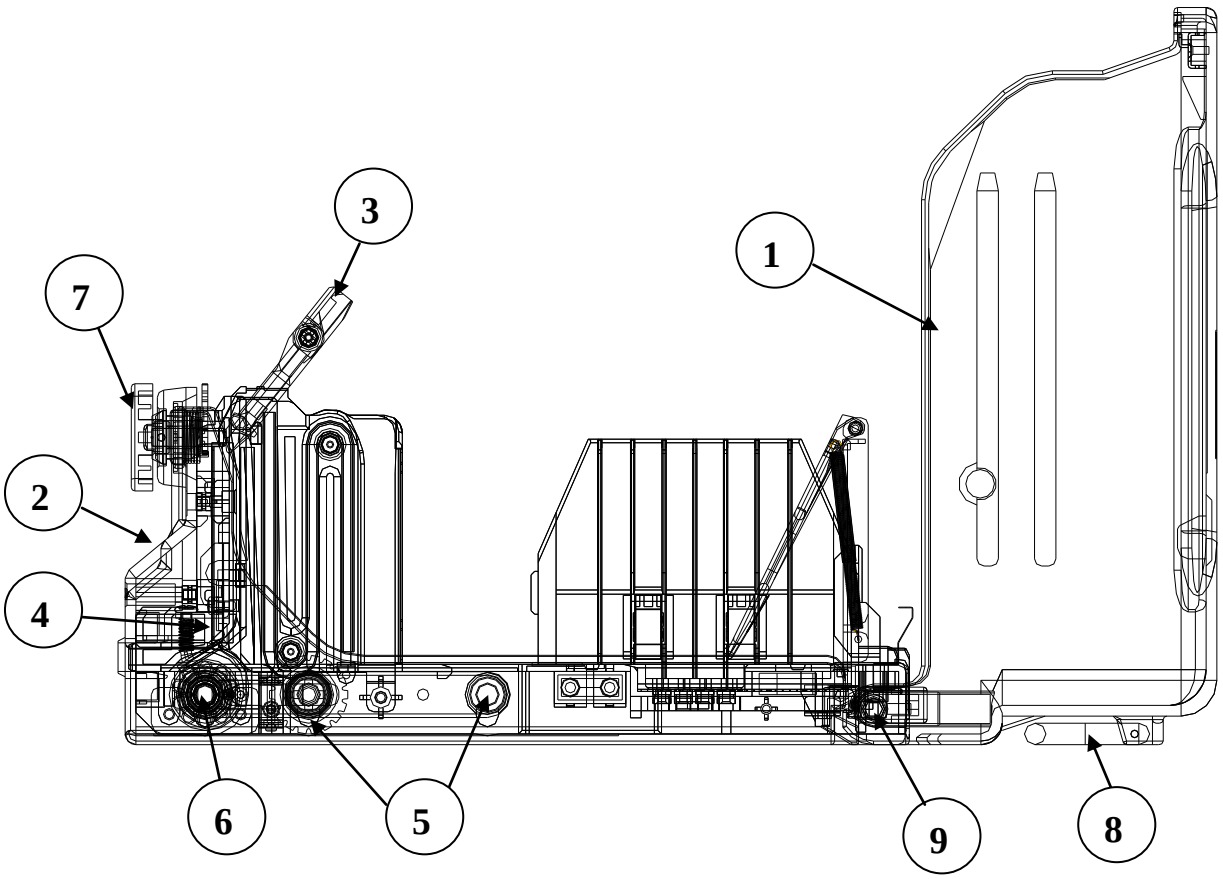
3.2 UNIT CASH CASSETTE

3.2.1 APPEARANCE



NO	PART NO	DESCRIPTION	FUNCTION
1	B2503P0229	PLATE PUSHER N VCDM	NOTE WIDTH GUIDE
2	B2503P0230	PLATE REAR PUSHER	NOTE WIDTH GUIDE
3	B1604P0479	GUIDE REAR SIDE VCDM	NOTE LENGTH GUIDE

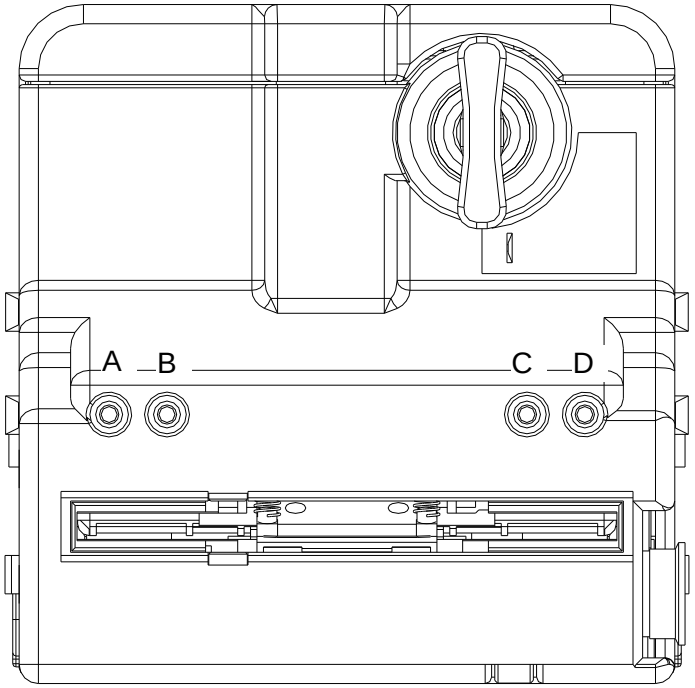
3.2.2 CONFIGURATION



NO	PART NO	DESCRIPTION	FUNCTION
1	B1207P0190	COVER TOP CASSETTE	UPPER CASE
2	B1207P0189	COVER BOTTOM CASSETTE	BOTTOM CASE
3	B2503P0171	PLATE PUSHER	PUSHER
4	B1108P1111	BRACKET SEPARATE PLATE	NOTE SAPERATOR
5	B2803A0821	SHAFT ASSY PICKUP	NOTE PICK UP
6	B2803A0820	SHAFT ASSY FEED	NOTE FEED
7	B1702P0015	ASSY LOCK(KEY/MANUAL)	LOCK/UNLOCK
8	B1702P0016	HANDLE CASSETTE	HANDLE
9	B2803P0791	SHAFT HINGE TOP	COVER TOP/BOTTOM ASSEMBLE

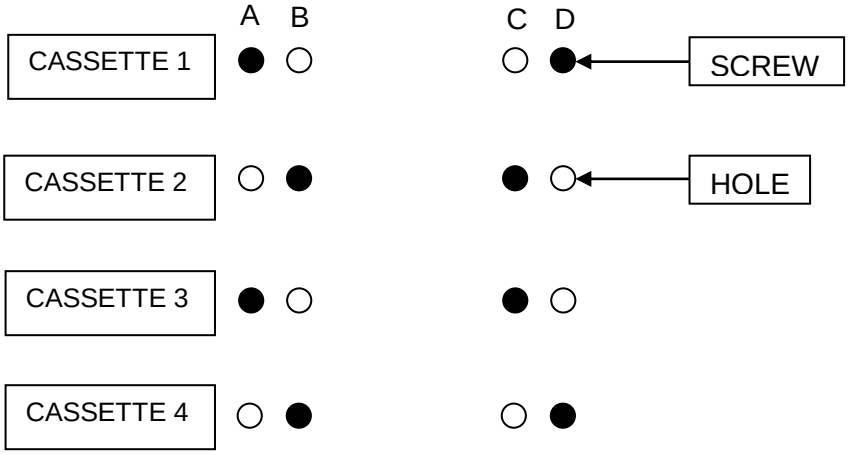
3.2.3 LEVEL CHANGE

1) Matching Mechanism to Level



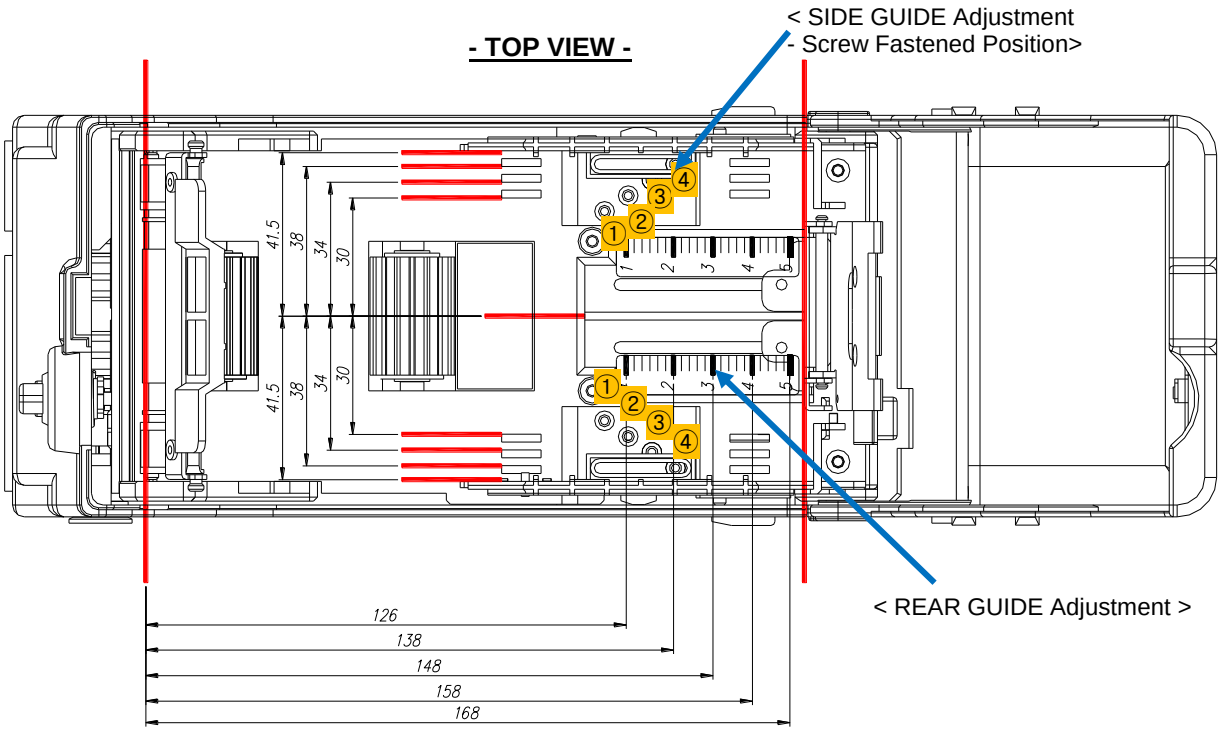
2) How to Change to Each Level

Cassettes could be distinguished as Pin position is shown the below.



3.2.4 CASSETTE GUIDE ADJUSTMENT

Each banknote need to be set to the following combination.



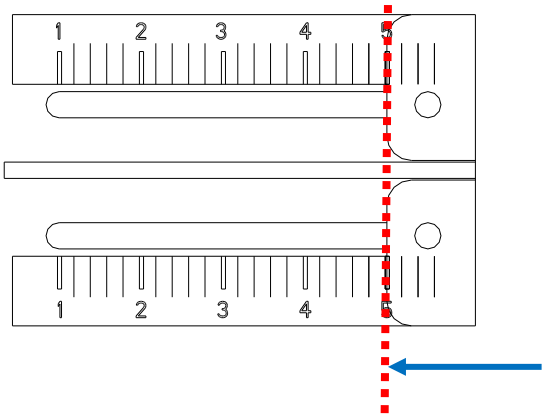
① Side Guide Adjust Method

- Side guide adjusted by one screw fastened at eash position(1~4).

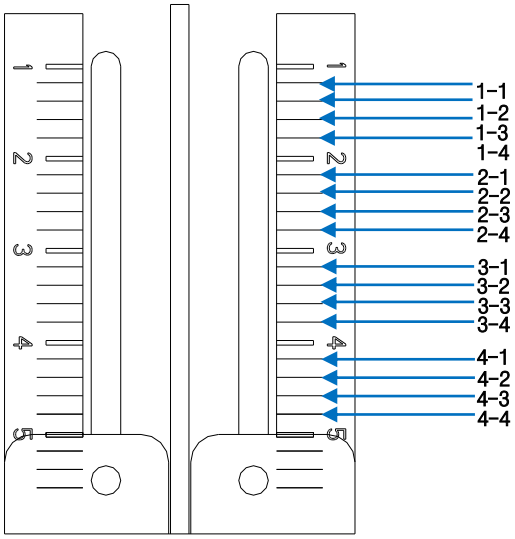
② Rear Guide Adjust Method

- Rear guide adjusted by two screws fastened at scaled position.
- Adjusting reference of rear guide is edge position of rear guide. (see below fiqure)

- DETAILED VIEW OF REFERENCE LINE -



- DETAILED VIEW OF SCALE -

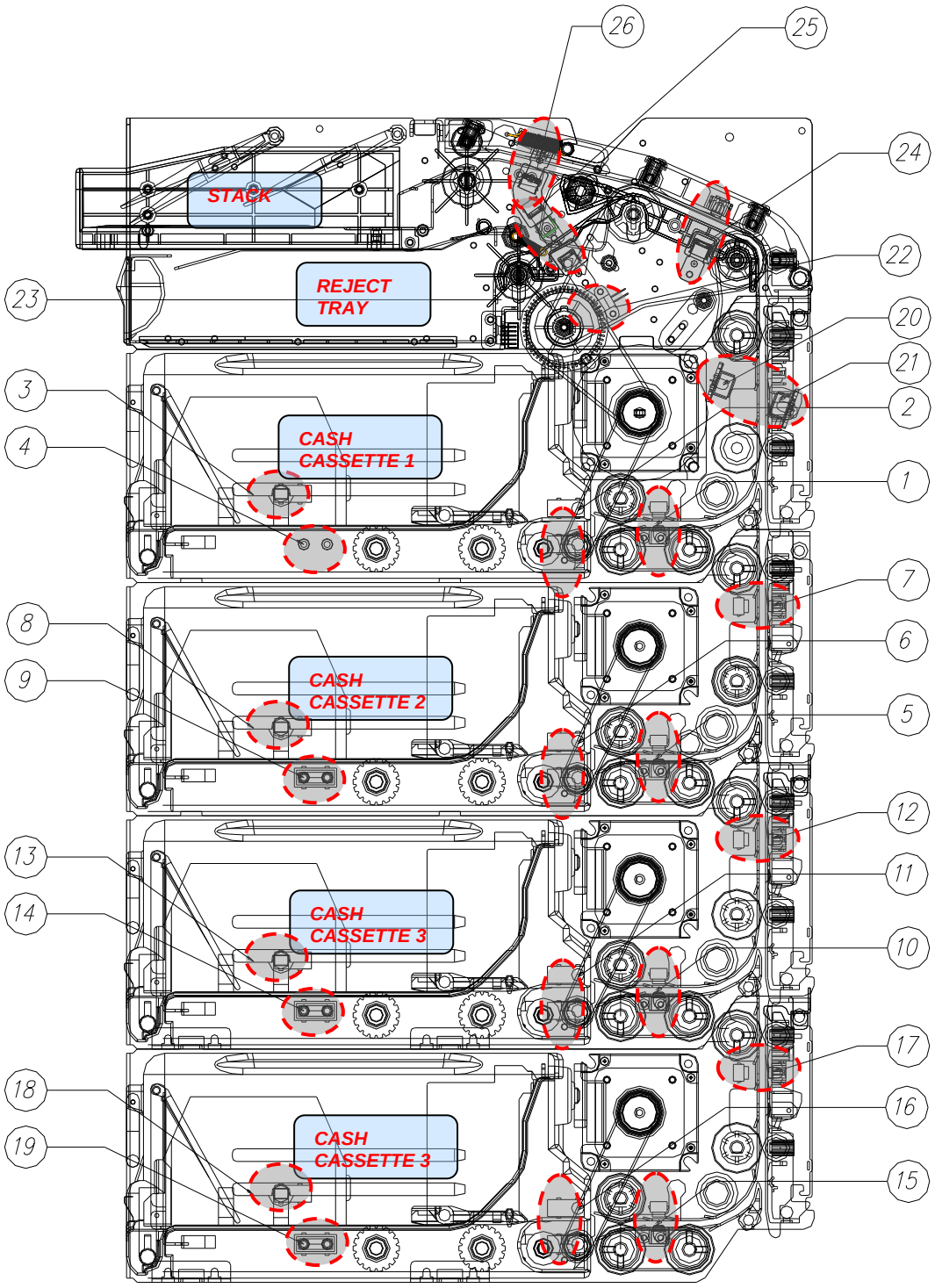


VCDM Denominations setting table by country

Country	Deno.	Parameter		Cassette			
		Length (Hex)	Opacity (Hex)	Width(Screw Fastened Position)			Length (Rear Guide Edge)
				LEFT(NO.)	RIGHT(NO.)	Dim.	Position
U.S.A (USD)	$1	C6	30	2	3	71	4-3
	$5	C6	30	2	3	71	4-3
	$10	C6	30	2	3	71	4-3
Australia (AUD)	$5	A5	30	2	3	71	2
	$10	AA	30	2	3	71	2-4
	$20	B7	30	2	3	71	3-2
	$50	C0	30	2	3	71	4-1
U.K. (GBP)	£5	AB	30	3	3	75	2-4
	£10	B4	30	3	4	79	3-1
	£20	BD	30	4	4	83	4
Canada (CAD)	$5	C1	30	3	3	75	4-1
	$10	C1	30	3	3	75	4-1
	$20	C1	30	3	3	75	4-1
Euro (EUR)	€5	98	30	1	2	63	1
	€10	A1	30	2	3	71	1-4
	€20	A9	30	3	3	75	2-2
S.Korea (KRW)	₩1000	AD	30	2	3	71	2-4
	₩5000	B4	30	2	3	71	3-1
	₩10000	BC	30	2	3	71	3-4
NewZealand (NZD)	$5	AB	30	2	3	71	2-4
	$10	B2	30	2	3	71	3
	$20	B8	30	3	3	75	3-3

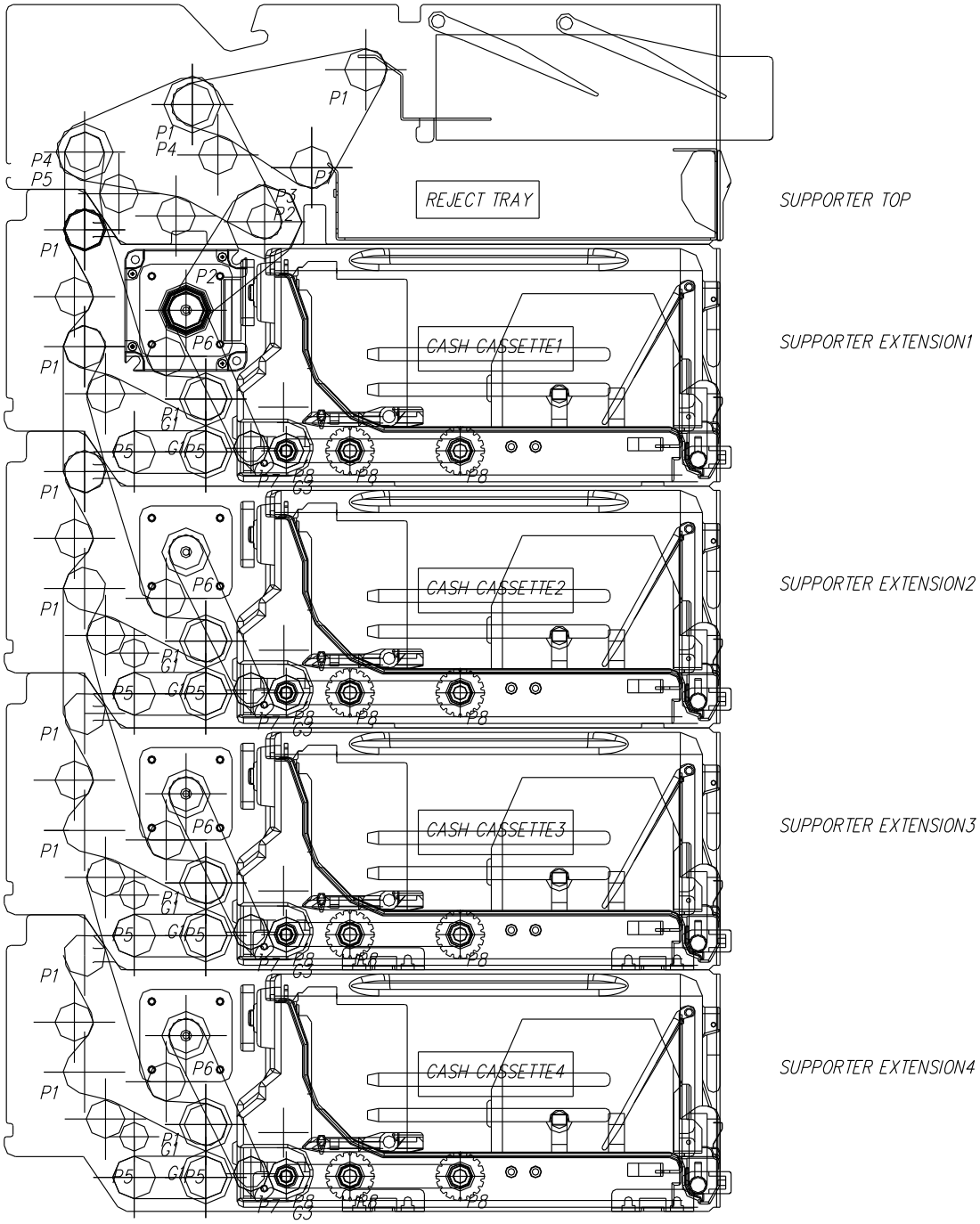
3.3 SENSOR ASSIGNMENT

The sensors assignment is shown in the below and can be checked by test program.



NO	NAME	DESCRIPTION	TYPE
1	CHK 1 SENSOR	Sensor to detect the length of the banknote picked from Top Cassette and to measure distance between bankotes	Optical
2	CST_IN 1 SENSOR	Sensor to check banknote on the path of Top Cassette	Optical
3	NEAREND 1 SENSOR	Sensor to check the remaining banknote on the path of Top Cassette	Optical
4	CST 1 SENSOR	Sensor to detect existence of Top Cassette	Optical
5	CHK 2 SENSOR	Sensor to detect the length of the banknote picked from the 2nd Cassette from Top and to measure distance between bankotes	Optical
6	CST_IN 2 SENSOR	Sensor to check banknote on the path of the 2nd Cassette from Top	Optical
7	PATH 2 SENSOR	Sensor to check banknote on the Path 2	Optical
8	NEAREND 2 SENSOR	Sensor to check the remaining banknote on the path of the 2nd Cassette from Top	Optical
9	CST 2 SENSOR	Sensor to detect existence of the 2nd Cassette from Top	Optical
10	CHK 3 SENSOR	Sensor to detect the length of the banknote picked from the 3rd Cassette from Top and to measure distance between bankotes	Optical
11	CST_IN 3 SENSOR	Sensor to check banknote on the path of the 3rd Cassette from Top	Optical
12	PATH 3 SENSOR	Sensor to check banknote on the Path 3	Optical
13	NEAREND 3 SENSOR	Sensor to check the remaining banknote on the path of the 3rd Cassette from Top	Optical
14	CST 3 SENSOR	Sensor to detect existence of the 3rd Cassette from Top	Optical
15	CHK 4 SENSOR	Sensor to detect the length of the banknote picked from the 4th Cassette from Top and to measure distance between bankotes	Optical
16	CST_IN 4 SENSOR	Sensor to check banknote on the path of the 4th Cassette from Top	Optical
17	PATH 4 SENSOR	Sensor to check banknote on the Path 4th	Optical
18	NEAREND 4 SENSOR	Sensor to check the remaining banknote on the path of the 4th Cassette from Top	Optical
19	CST 4 SENSOR	Sensor to detect existence of the 4th Cassette from Top	Optical
20	SONAR_IN SENSOR	Sensor to detect start of sampling of Untrasonic Sensor	Optical
21	SONAR SENSOR	Untransonic Sensor for doubled notes	Optical
22	WHEEL SENSOR	Wheel Count Sensor	Interrupt
23	RJT_TRAY SENSOR	Sensor to check existence of Reject Tray	Limit S/W
24	DVT SENSOR	DC Motor Control Sensor for Diverter Operation	Optical
25	RJT SENSOR	Sensor to detect rejected banknotes	Optical
26	EXIT SENSOR	Sensor to detect banknotes on Exit	Optical

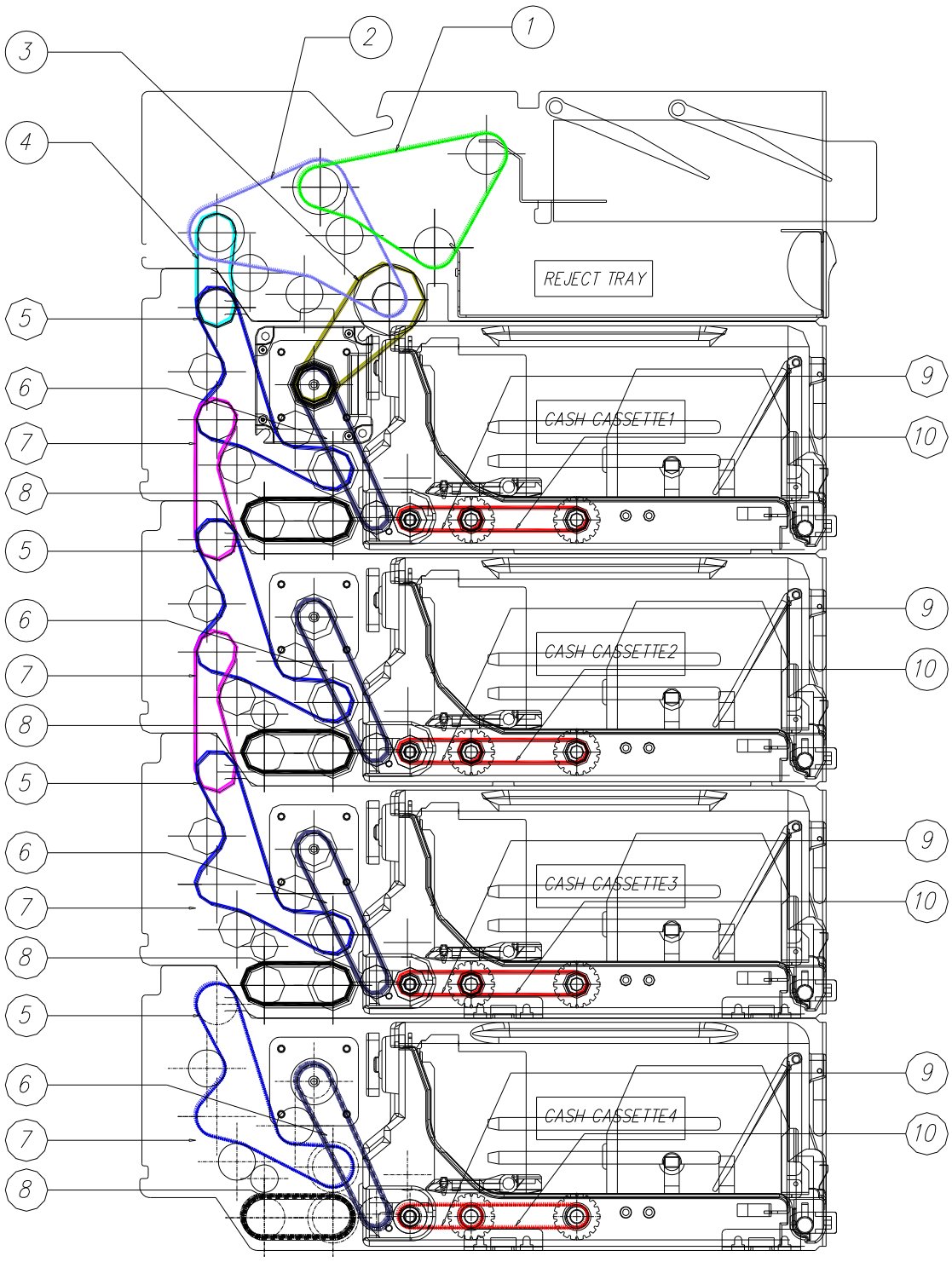
3.4 POWER TRANSMISSION



NO	NAME	PART NO	DESCRIPTION
1	G1	B1601P0096	GEAR FEED Z24(M:1.0, D: 6.0, W:8.0)
2	G2	B1601P0079	GEAR Z16 (M:1.0) PULLEY S2M 20
3	G3	B1605P0095	GEAR Z16 M1 (D:10.0, W: 4.0)
4	P1	B2505P0022	PULLEY FEED(12XL)
5	P2	B2505P0079	PULLEY FEED XL 10
6	P3	B2505P0024	PULLEY FEED(XL21.8)
7	P4	B2505P0018	PULLEY MOTOR XL 16.6
8	P5	B2505P0091	PULLEY FEED MXL28 D6.0
9	P6	B2505P0085	PULLEY S2M 25
10	P7	-	- (Same with G2)
11	P8	B2505P0080	PULLEY S2M 17
12	MOTOR	B2203P0070	MOTOR BLDC DR-5238-018 SHINANO
13	MOTOR	B2203P0054	MOTOR STP-43D2008

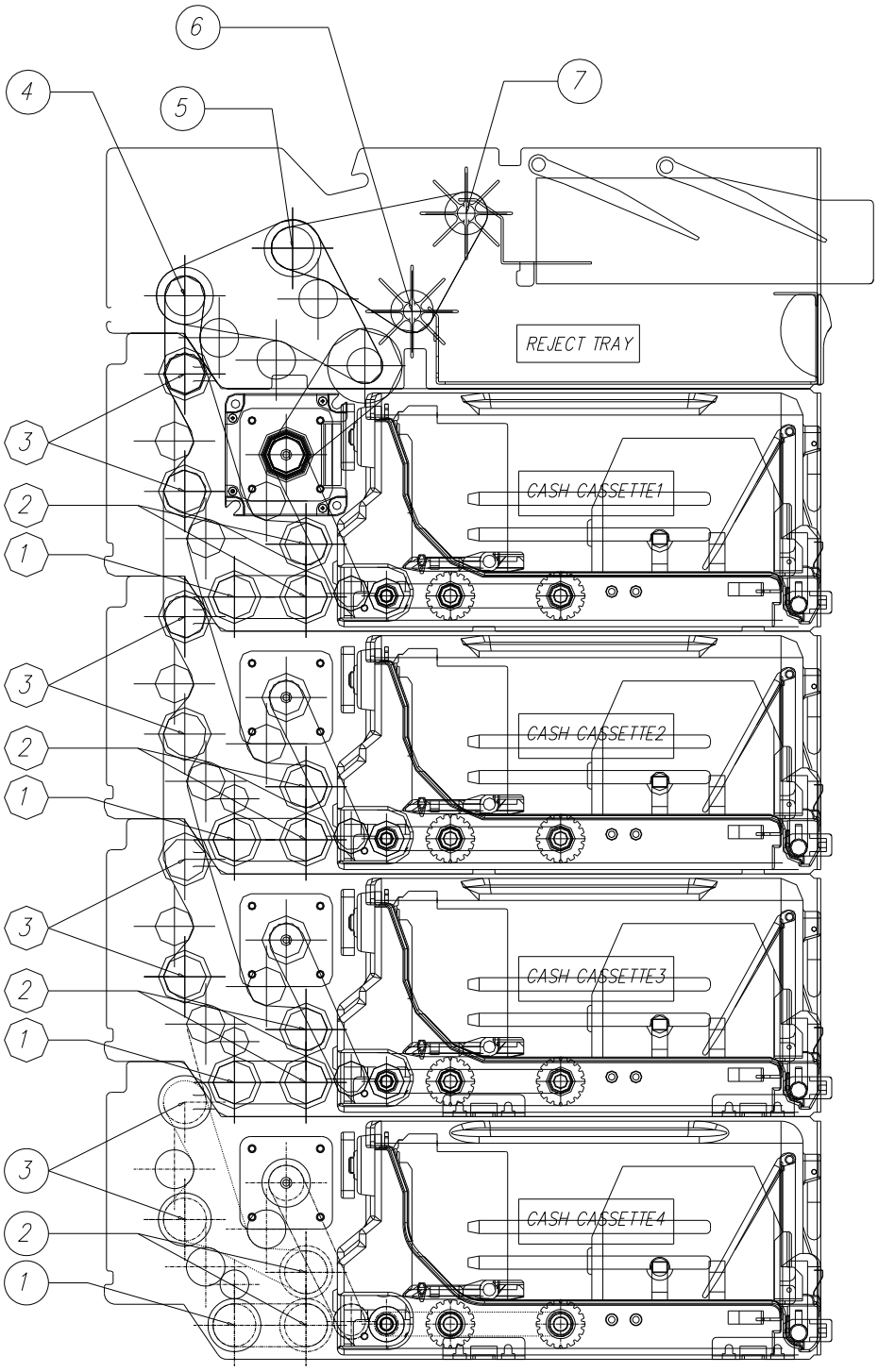
* G: Gear, P: Pulley.

3.5 TIMMING BELT CONFIGURATION



NO	PART NO	PART NAME
1	B1104P0139	BELT TIMMING 100XL (W:6.4)
2	B1104P0021	BELT TIMMING 108XL (W:6.4)
3	B1104P0141	BELT TIMMING 74XL (W:6.4)
4	B1104P0142	BELT TIMMING B63MXL (W:6.4)
5	B1104P0113	BELT TIMMING 114XL (W:6.4)
6	B1104P0138	BELT TIMMING S2M 184 (W:6.0)
7	B1104P0140	BELT TIMMING 70XL (W:6.4)
8	B1104P0143	BELT TIMMING B60MXL (W:6.4)
9	B1104P0136	BELT TIMMING S2M 92 (W : 3.0)
10	B1104P0137	BELT TIMMING S2M 134 (W:3.0)

3.6 SHAFT(DELIVERY ROLLER) CONFIGURATION



NO	PART NO	PART NAME
1	B2803A0825	SHAFT ASSY CASH FEED 2 VCDM
2	B2803A0824	SHAFT ASSY CASH FEED 1 VCDM
3	B2803A0826	SHAFT ASSY CASH FEED 3 VCDM
4	B2803A0827	SHAFT ASSY CASH FEED 4 VCDM
5	B2803A0830	SHAFT ASSY CASH FEED 7 VCDM
6	B2803A0828	SHAFT ASSY CASH FEED 5 VCDM
7	B2803A0829	SHAFT ASSY CASH FEED 6 VCDM

4 H/W CONFIGURATION

4.1 MAIN BOARD

4.1.1 SPECIFICATION

►CPU
→ STR710FZ2T6

►ROM
→ 256Kbyte, CPU Built-in Memory

►RAM
→ 64Kbyte, CPU Built-in Memory
→ 256Kbit, FRAM: FM18L08 using

►MAIN CLOCK
→ 16MHz

►SENSOR CIRCUIT
→ DAC : AD8804
→ ADC : AD9280

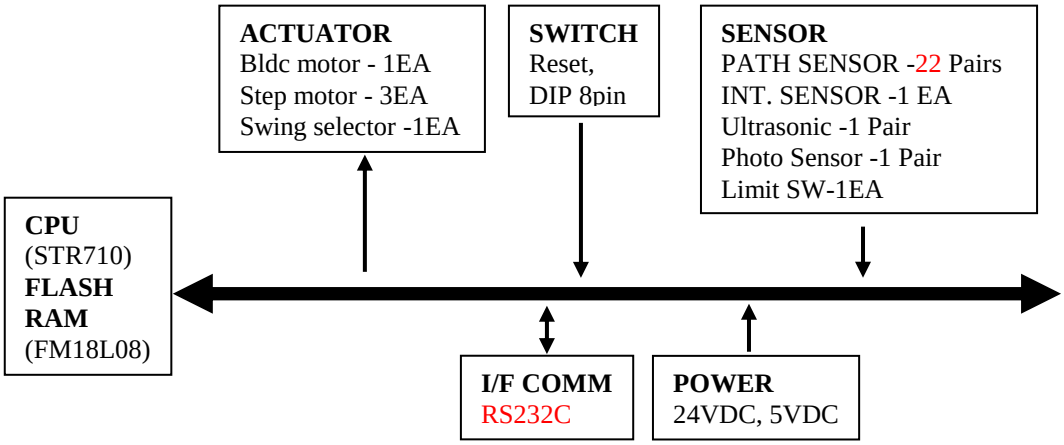
►BLDC MOTOR CONTROL
→ CONTROLLER : MC33035(CLOSED LOOP SPEED CONTROL)
→ DRIVER : SLA5064(MOSFET ARRAY)

►STEP MOTOR CONTROL
→ DRIVER : SLA7021(MOSFET)

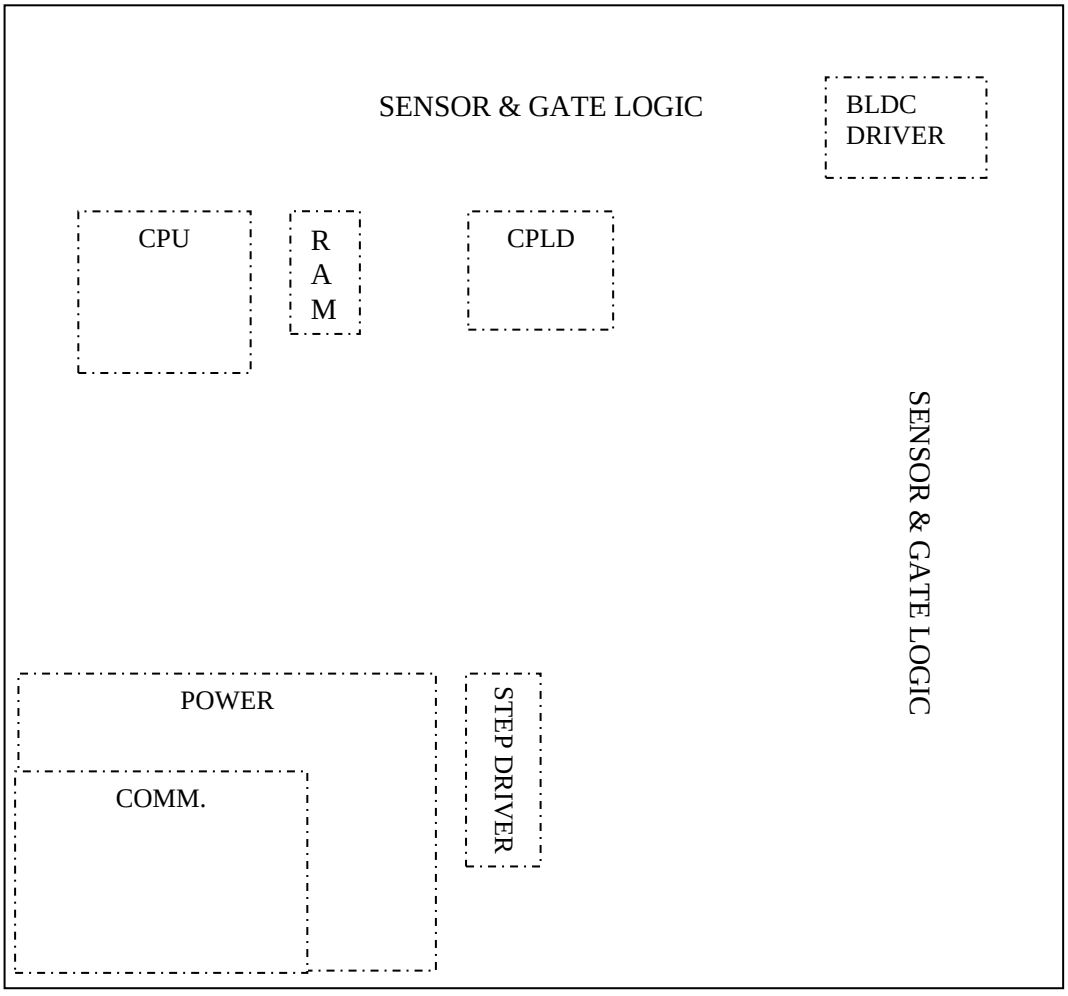
►SWING SELECTOR CONTROL
→ DRIVER : TA8428K

►COMMUNICATION
→ RS232C : SP3232ECY

4.1.2 BLOCK DIAGRAM



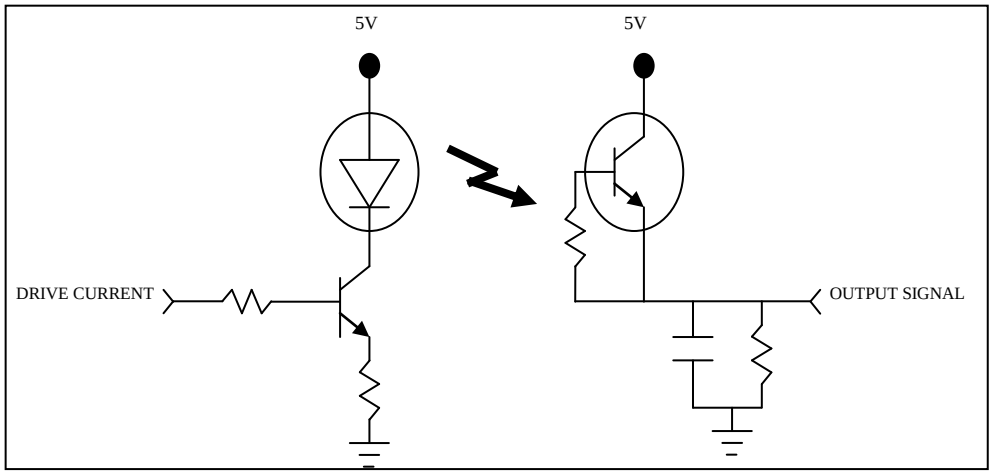
4.1.3 LAYOUT



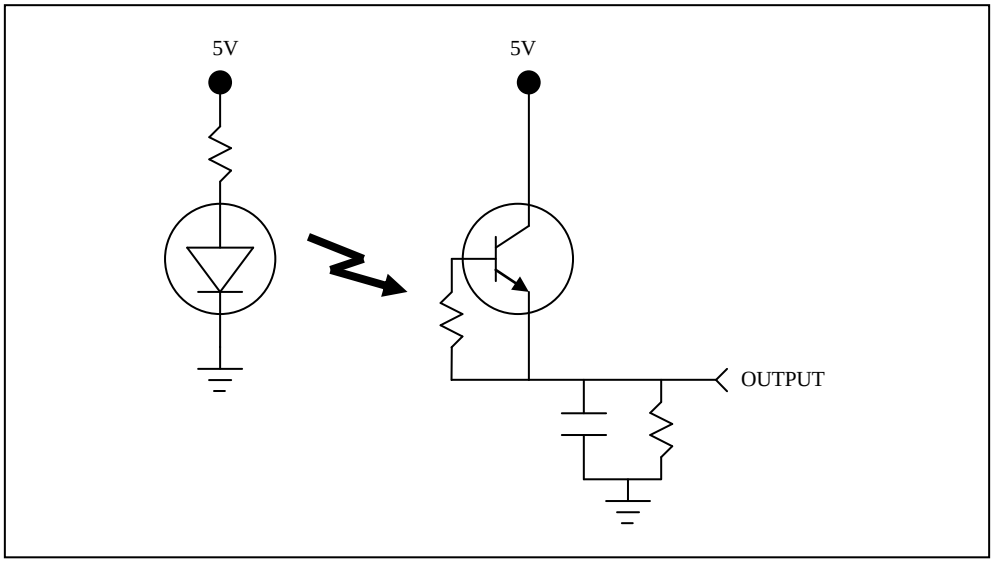
4.2 SENSOR CIRCUIT

4.2.1 PATH SENSOR

1) PHOTO DIODE : G-310 (KODENSHI)
2) PHOTO TR : ST-310 (KODENSHI)

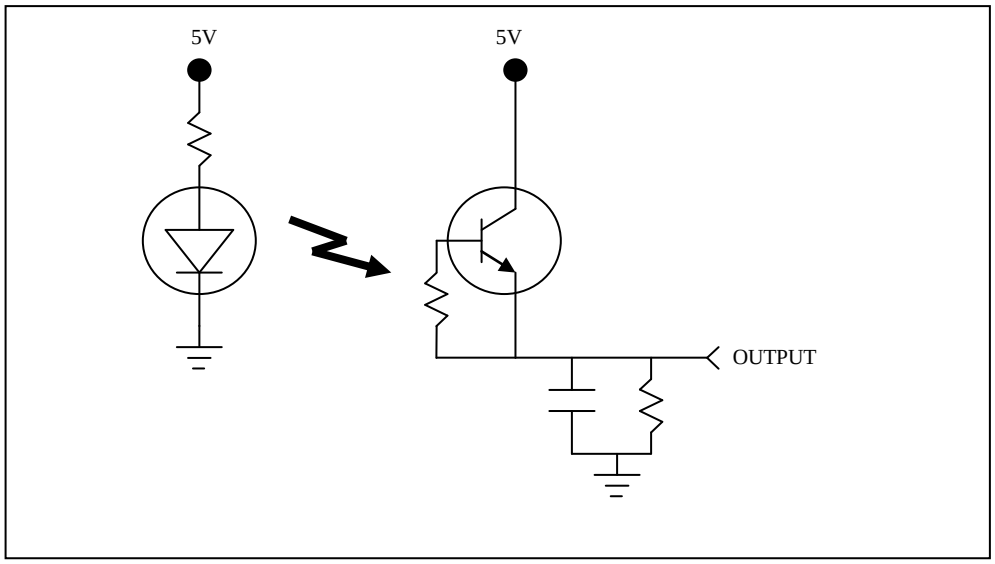


3) PHOTO DIODE : KEL-1KL2 (KODENSHI)
4) PHOTO TR : KST-1KLB (KODENSHI)



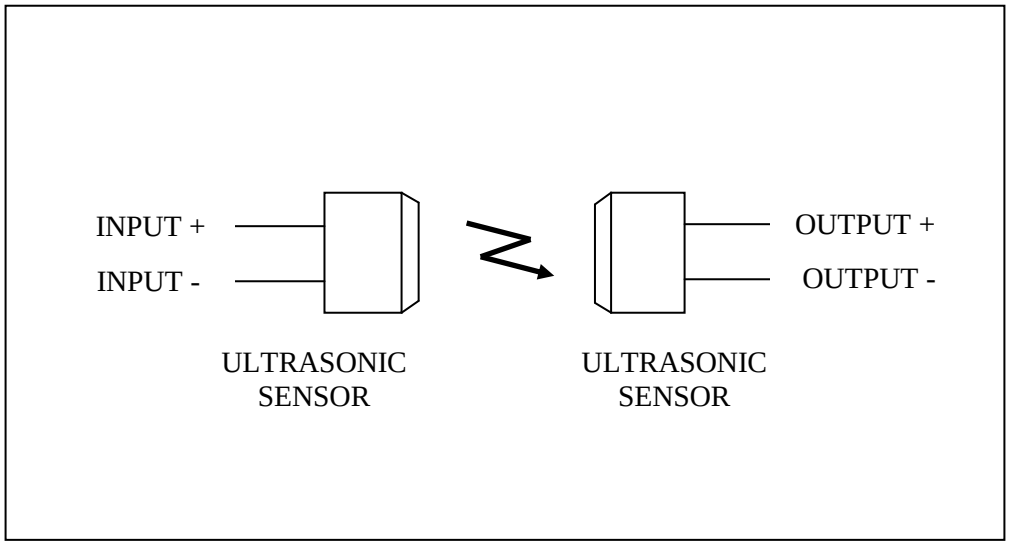
4.2.2 WHEEL SENSOR

1) PHOTO INTERRUPT : SG255 (KODENSHI)



4.2.3 ULTRASONIC SENSOR & PHOTO SENSOR

1) MA300D1-1 (MURATA)
2) PHOTO DIODE: KEL-1KL2 (KODENSHI)
3) PHOTO TR : KST-1KLB (KODENSHI)



ULTRASONIC SENSOR (MA300D1-1)

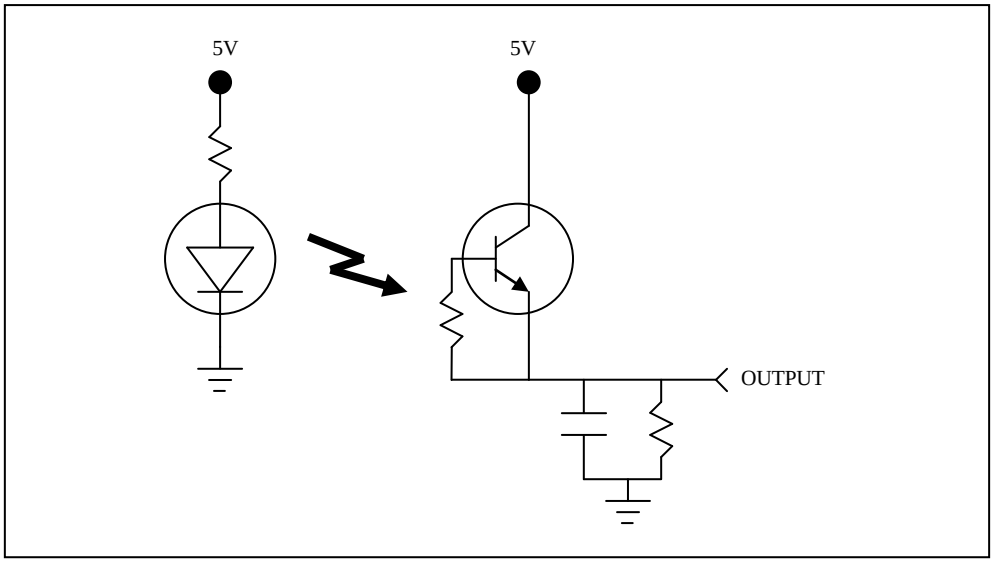
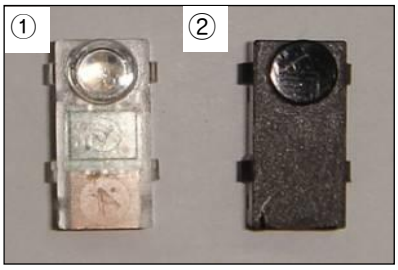


PHOTO SENSOR (KEL-1KL2, KST-1KLB)

4.3 SENSOR

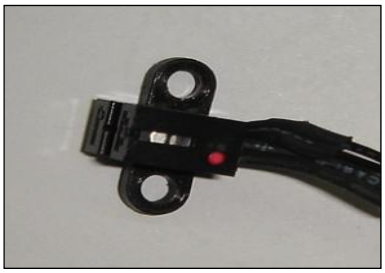
4.3.1 PATH SENSOR



①P/N: B2817P0010 (G-310)
② P/N: B2817P0011 (ST-310)
(Color: Black)

PHOTO SENSOR
③ P/N: RPA000049E
④ P/N: RPA000049F

4.3.2 PHOTO INTERRUPT SENSOR



P/N: B1212A0346 (CABLE ASSY WHEEL SENSOR)

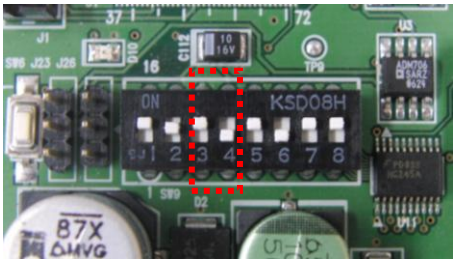
4.3.3 ULTRASONIC SENSOR & PHOTO SENSOR

ULTRASONIC & PHOTO EMIT
P/N: RPA000049C

ULTRASONIC & PHOTO RECEIVE
P/N: RPA000049D

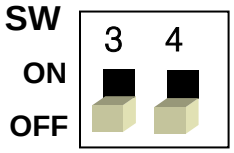
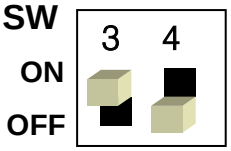
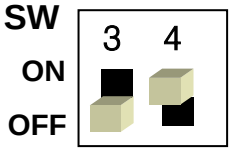
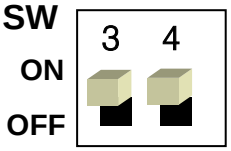
4.4 TYPE SELECTION SWITCH

4.4.1 TYPE SELECTION SWITCH



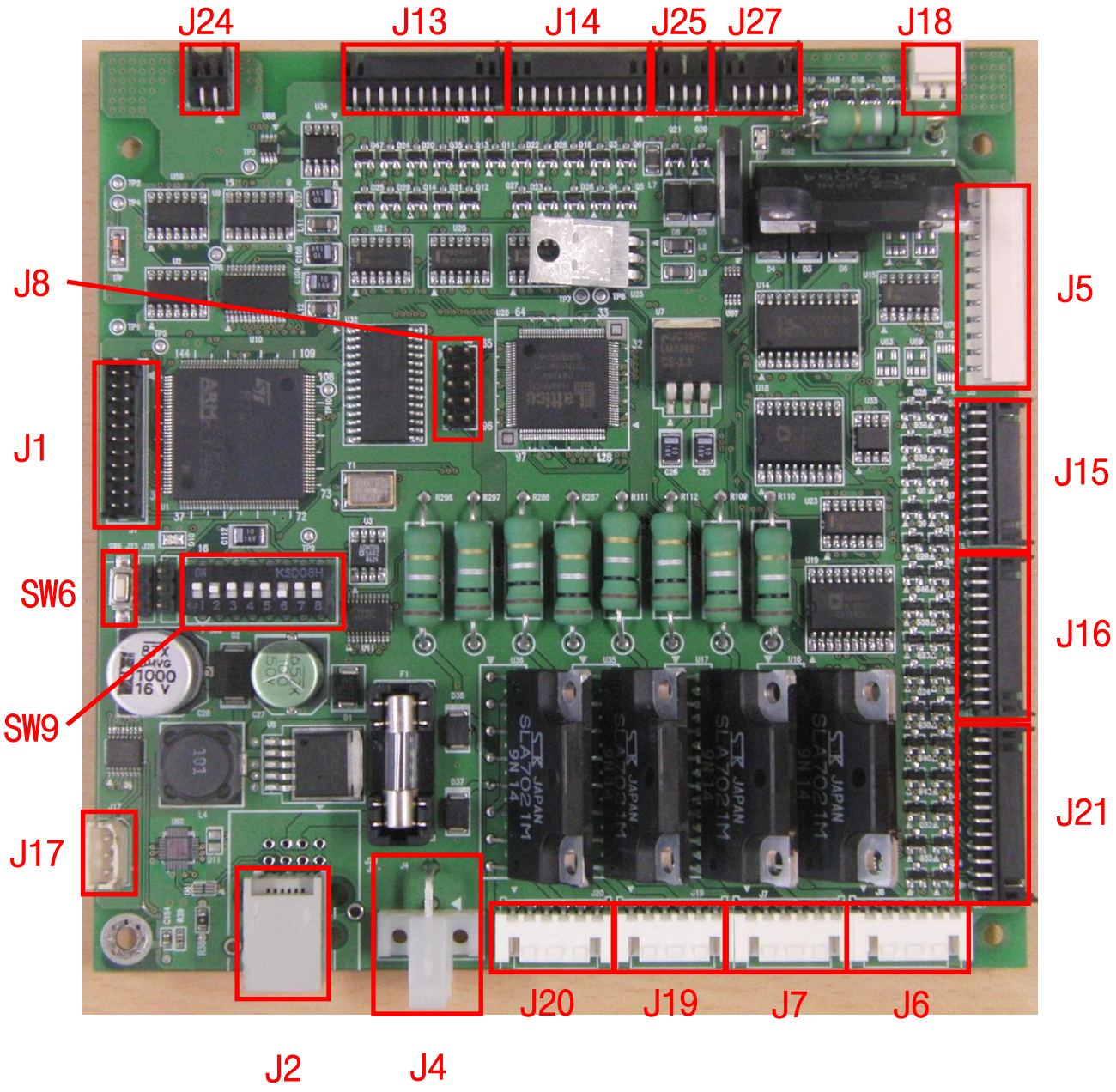
4.4.2 TYPE SELECTION METHOD

VCDM-100/200/300/400 is distinguished by “On” status of S/W 3,4.like the below.

# TYPE 1 – VCDM 400	# TYPE 2 – VCDM 300
	
# TYPE 3 – VCDM 200	**# TYPE 4 – VCDM 100**
	

4.5 BOARD CONNECTION

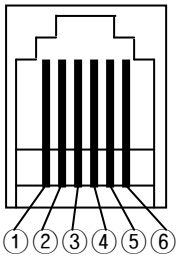
4.5.1 MAIN BOARD



NO	DESCRIPTION
J1	CPU JTAG CONNECTOR
J2	RS232C Communication CONNECTOR
J4	POWER CONNECTOR
J5	BLDC MOTOR CONNECTOR
J6	STEP MOTOR1 CONNECTOR
J7	STEP MOTOR2 CONNECTOR
J8	CPLD PROGRAMMING CONNECTOR
J13	DIV Emission and Reception Sensor, EXIT Emission and Reception Sensor, REJECT Emission and Reception Sensor, REJECT TRAY Input , WHEEL INTERRUPT Sensor
J14	PATH1 Emission and Reception Sensor, NEAR END1 Emission and Reception Sensor, CHK1 Emission and Reception Sensor, CST_IN1 Emission and Reception Sensor, CST_CHK1 Emission and Reception Sensor
J15	PATH2 Emission and Reception Sensor, NEAR END2 Emission and Reception Sensor, CHK2 Emission and Reception Sensor, CST_IN2 Emission and Reception Sensor, CST CHK2 Emission and Reception Sensor
J16	PATH3 Emission and Reception Sensor, NEAR END3 Emission and Reception Sensor, CHK3 Emission and Reception Sensor, CST_IN3 Emission and Reception Sensor, CST_CHK3 Emission and Reception Sensor
J17	Debugging CONNECTOR
J18	SWING SELECTOR CONNECTOR
J19	STEP MOTOR3 CONNECTOR
J20	STEP MOTOR4 CONNECTOR
J21	PATH4 Emission and Reception Sensor, NEAR END4 Emission and Reception Sensor, CHK4 Emission and Reception Sensor, CST_IN4 Emission and Reception Sensor, CST CHK4 Emission and Reception Sensor
J24	Ultrasonic sensor Reception CONNECTOR
J25	Ultrasonic sensor Emission CONNECTOR
J27	Reserved CONNECTOR
SW6	RESET SWITCH
SW9	DIP SWITCH For MODE Selection & Disfiguishment of Denomination

4.6 EXTERNAL CONNECTION

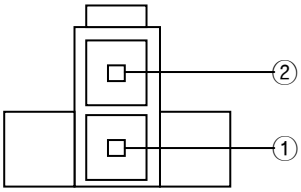
4.6.1 COMMUNICATION CONNECTOR



►Type : 52016-6616

PIN NO.	DESCRIPTION
1	Not Used
2	RXD(Received Data)
3	TXD(Transmitted Data)
4	Not Used
5	GND
6	Not used

4.6.2 POWER CONNECTOR



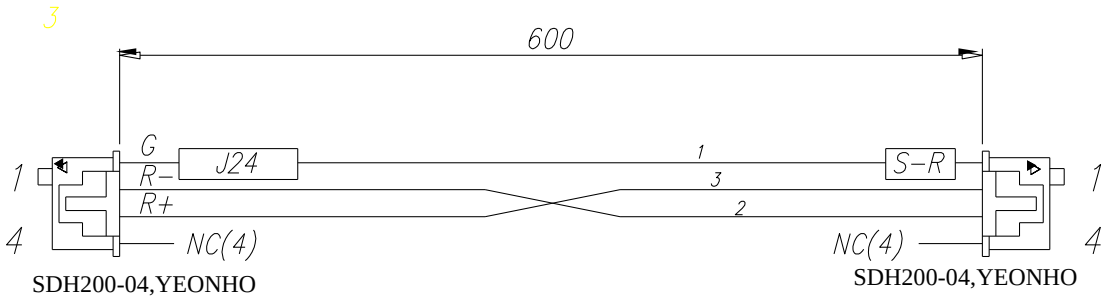
►Type : 5566VWO-02 (MOLEX)

PIN NO.	NAME
1	24VDC
2	GND

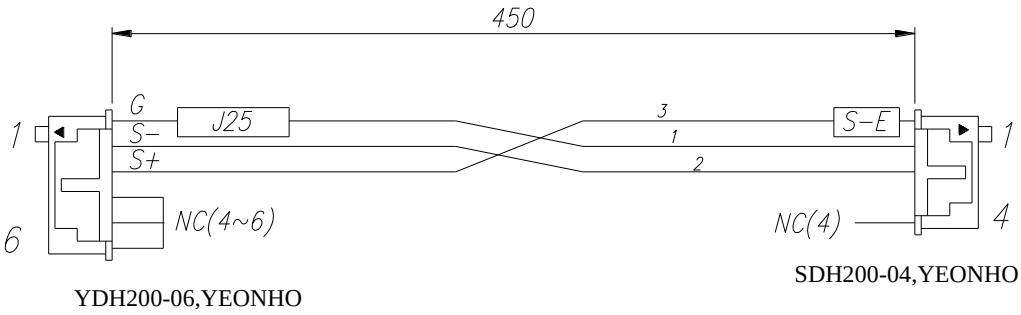
4.7 CONNECTION CABLE LIST

No.	NAME	DESCRIPTION	PART NO.	Applied to
1	J24	CABLE SONAR RCV VCDM	B1212P0409	VCDM MECHA
2	J25	CABLE SONAR EMIT VCDM	B1212P0410	VCDM MECHA
3	J13	CABLE TOP PCB SIDE VCDM	B1212P0411	VCDM MECHA
4	CONN.TOP	CABLE TOP VCDM	B1212P0412	VCDM MECHA
5	J18	CABLE SWING SELECTOR VCDM	B1212P0428	VCDM MECHA
6	REJECT-TRAY-R	CABLE LIMIT S/W VCDM	B1212P0414	VCDM MECHA
7	J5	CABLE BLDC MOTOR DR-5238-018	B2203P0070	VCDM MECHA
8	J14	CABLE FEED1 PCB SIDE VCDM	B1212P0416	VCDM-100/200/ 300/400
9	CONN.FEED1	CABLE FEED1 VCDM	B1212P0417	VCDM-100/200/ 300/400
10	STEP M1	CABLE STEP MOTOR1 VCDM	B1212P0418	VCDM-100/200/ 300/400
11	J15	CABLE FEED2 PCB SIDE VCDM	B1212P0419	VCDM-200/300/400
12	CONN.FEED2	CABLE FEED2 VCDM	B1212P0420	VCDM-200/300/400
13	STEP M2	CABLE STEP MOTOR2 VCDM	B1212P0421	VCDM-200/300/400
14	J16	CABLE FEED3 PCB SIDE VCDM	B1212P0422	VCDM-300/400
15	CONN.FEED3	CABLE FEED3 VCDM	B1212P0423	VCDM-300/400
16	STEP M3	CABLE STEP MOTOR3 VCDM	B1212P0424	VCDM-300/400
17	J21	CABLE FEED4 PCB SIDE VCDM	B1212P0425	VCDM-400
18	CONN.FEED4	CABLE FEED4 VCDM	B1212P0426	VCDM-400
19	STEP M4	CABLE STEP MOTOR4 VCDM	B1212P0427	VCDM-400

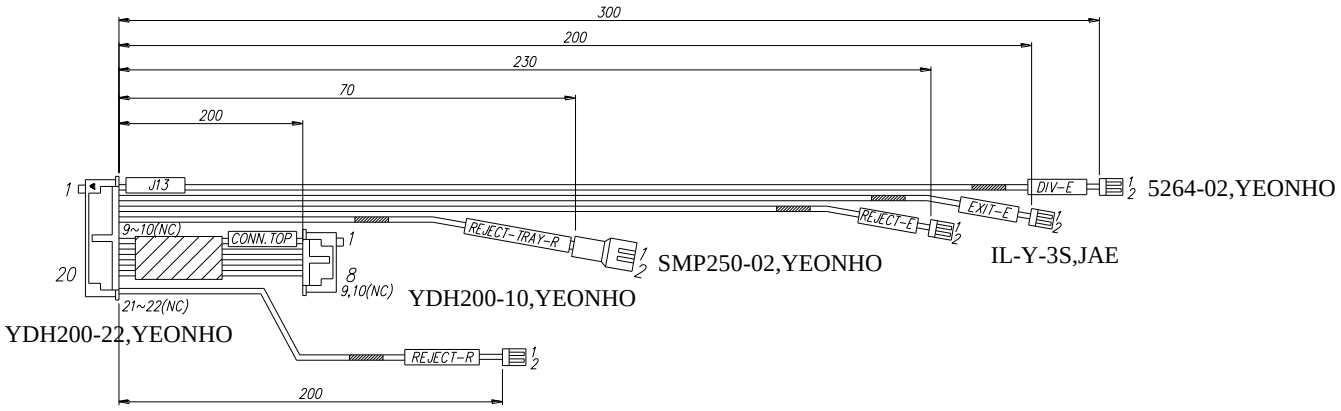
4.7.1 CABLE SONAR RCV VCDM [P/N: B1212P0409]



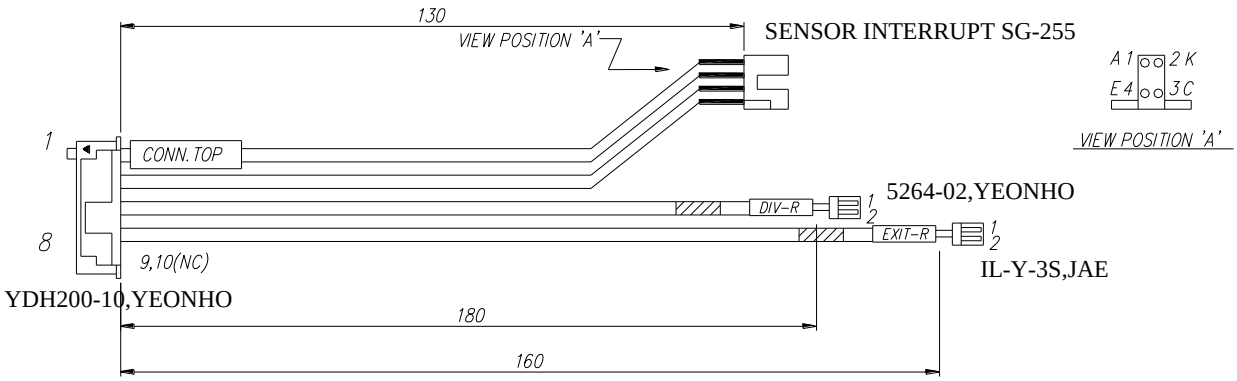
4.7.2 CABLE SONAR EMIT VCDM [P/N:B1212P0410]



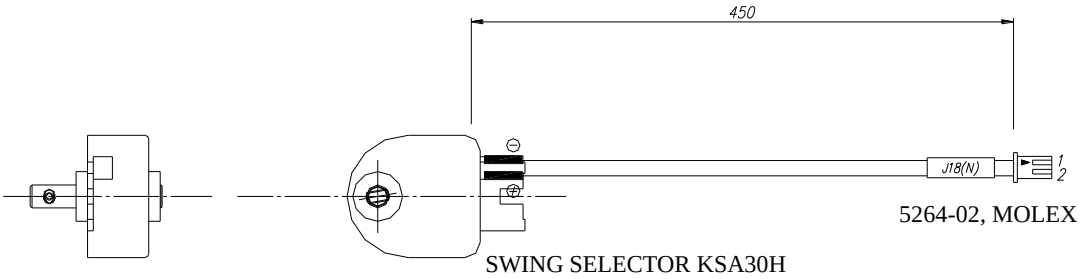
4.7.3 CABLE TOP PCB SIDE VCDM [P/N:B1212P0411]



4.7.4 CABLE TOP VCDM [P/N:B1212P0412]



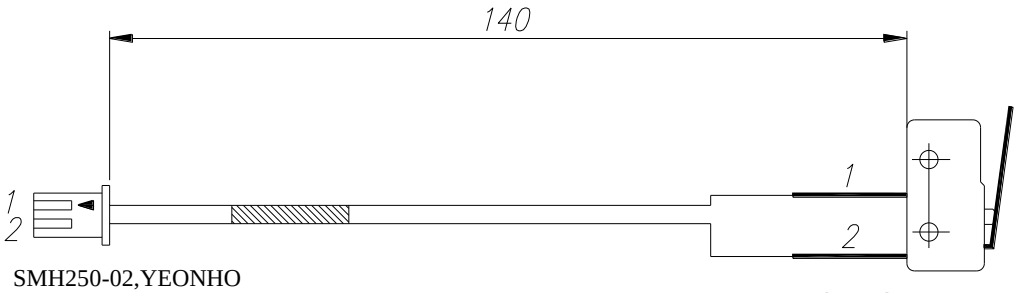
4.7.5 CABLE SWING SELECTOR VCDM [P/N: B1212P0428]



5264-02, MOLEX

SWING SELECTOR KSA30H

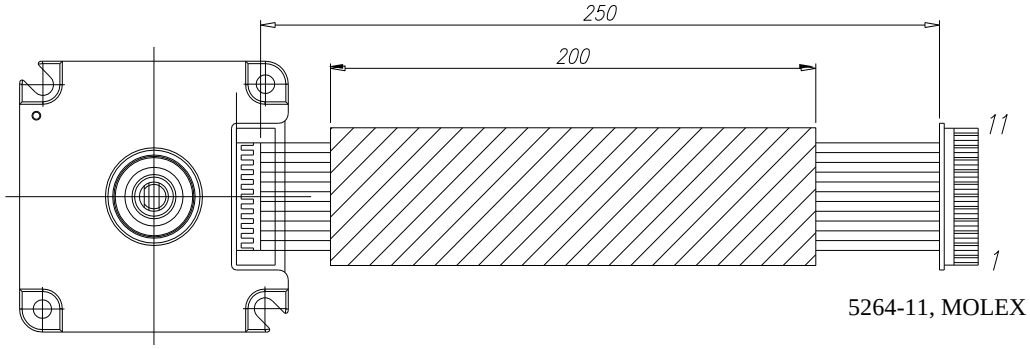
4.7.6 CABLE LIMIT S/W VCDM [P/N:B1212P0414]



SMH250-02,YEONHO

SWITCH LIMIT FLAT

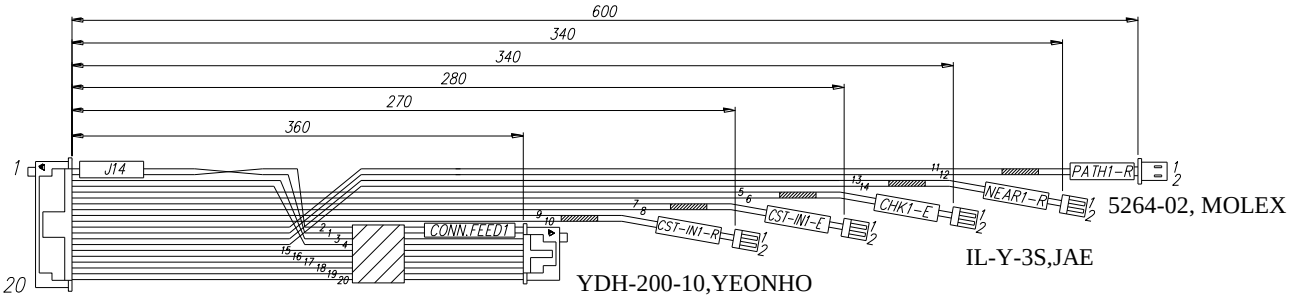
4.7.7 CABLE BLDC MOTOR [P/N:B2203P0070]



5264-11, MOLEX

DR-5238-018, SHINANO

4.7.8 CABLE FEED1 PCB SIDE VCDM [P/N: B1212P0416]



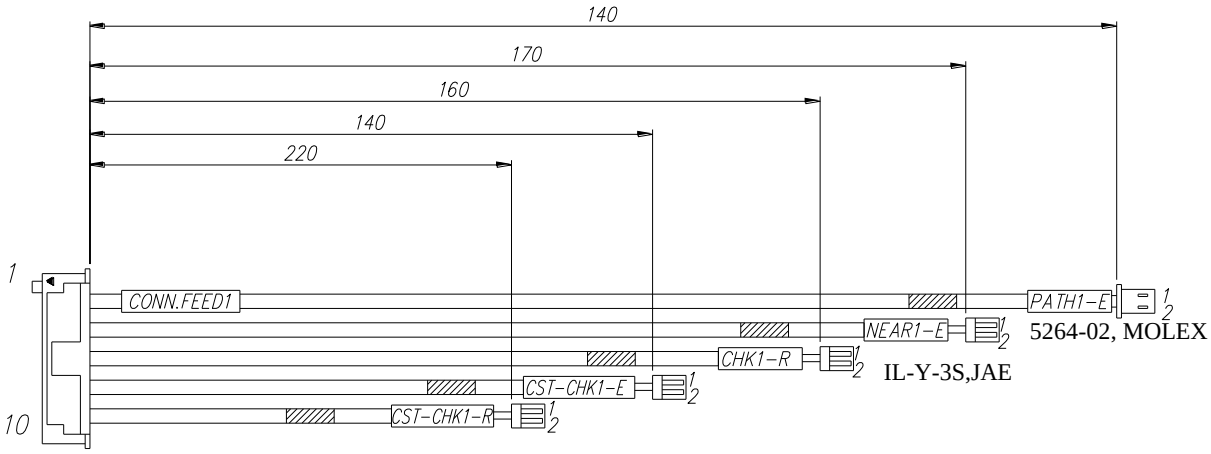
5264-02, MOLEX

IL-Y-3S,JAE

YDH-200-10,YEONHO

YDH200-20,YEONHO

4.7.9 CABLE FEED1 VCDM [P/N: B1212P0417]

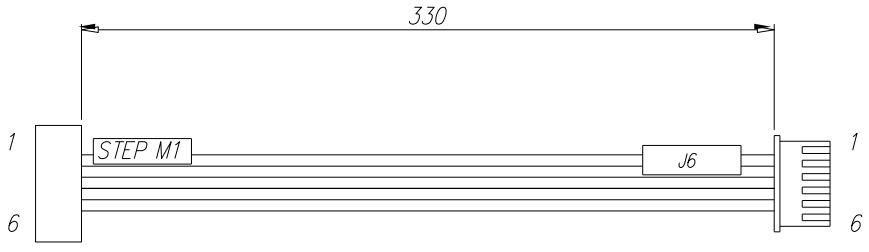


5264-02, MOLEX

IL-Y-3S,JAE

YDH200-10,YEONHO

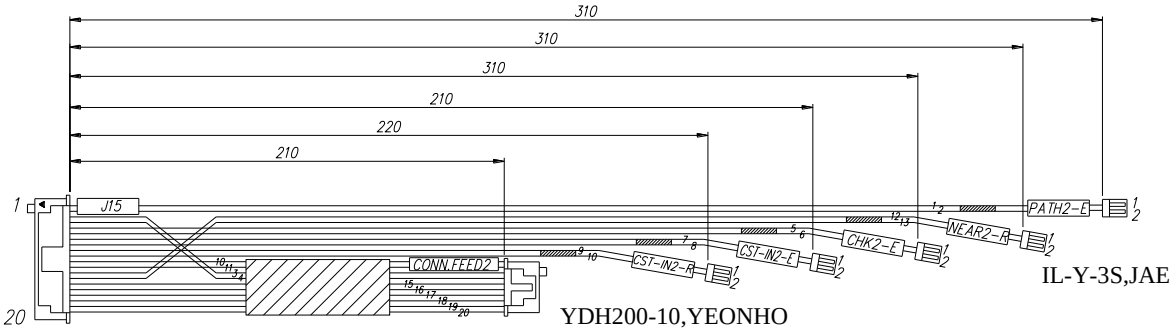
4.7.10 CABLE STEP MOTOR1 VCDM [P/N: B1212P0418]



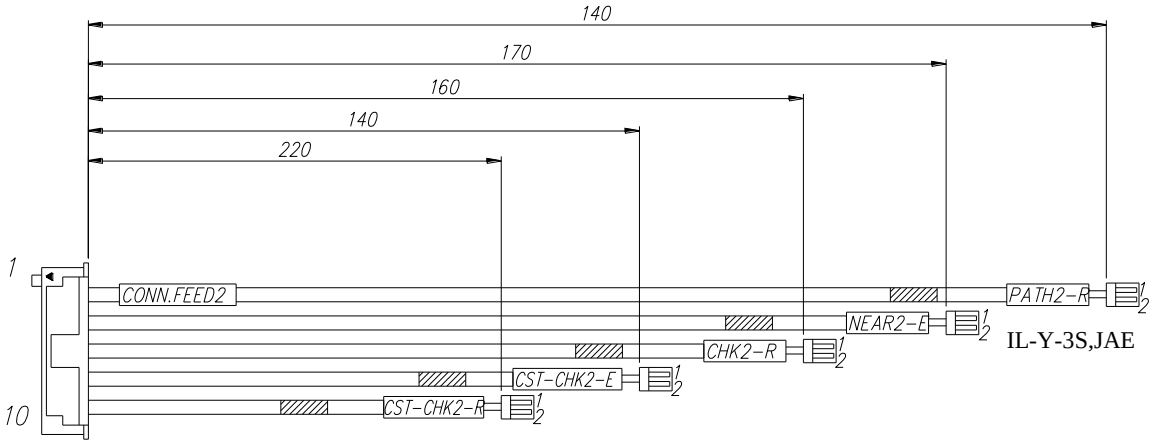
PHR-06

SMH250-06,YEONHO

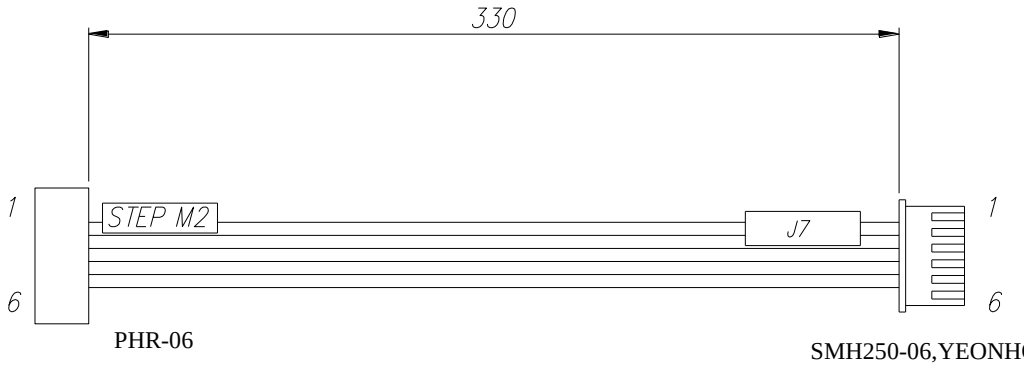
4.7.11 CABLE FEED2 PCB SIDE VCDM [P/N:B1212P0419]



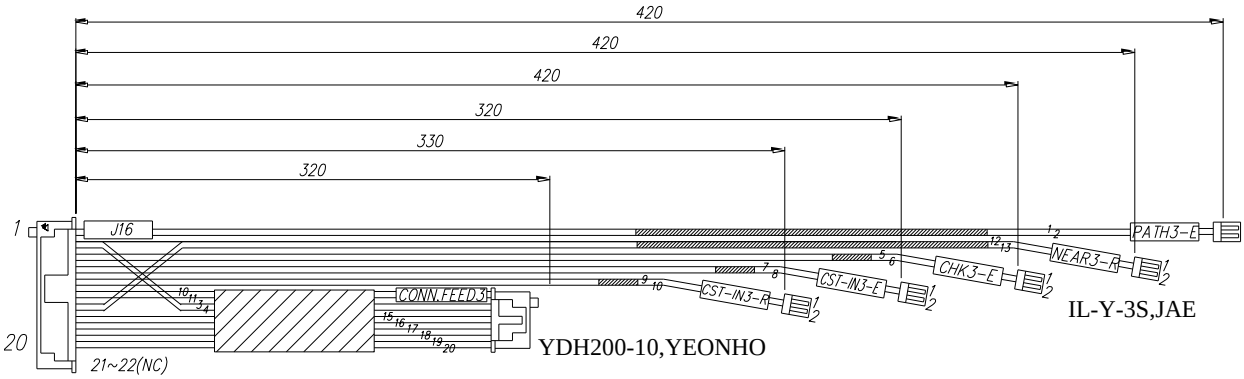
4.7.12 CABLE FEED2 VCDM [P/N:B1212P0420]



4.7.13 CABLE STEP MOTOR2 VCDM [P/N:B1212P0421]



4.7.14 CABLE FEED3 PCB SIDE VCDM [P/N:B1212P0422]

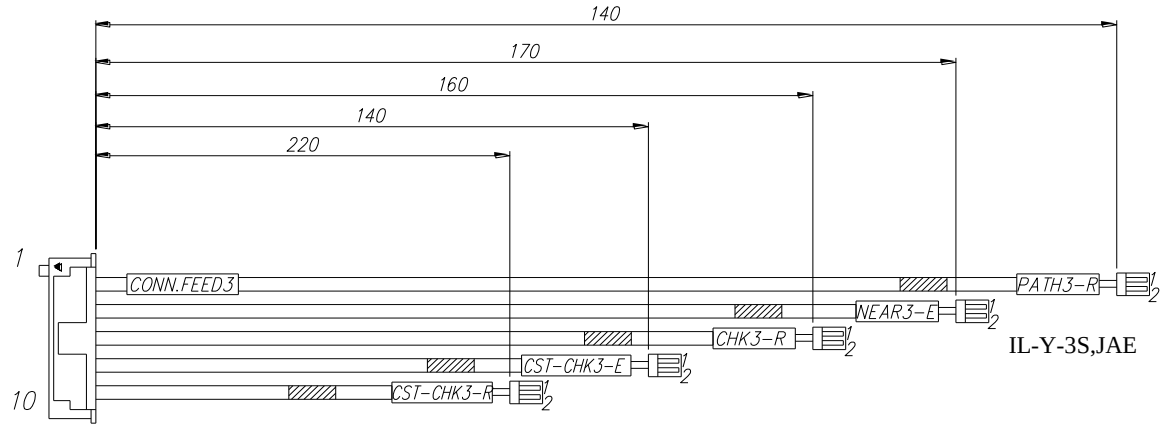


YDH200-22,YEONHO

YDH200-10,YEONHO

IL-Y-3S,JAE

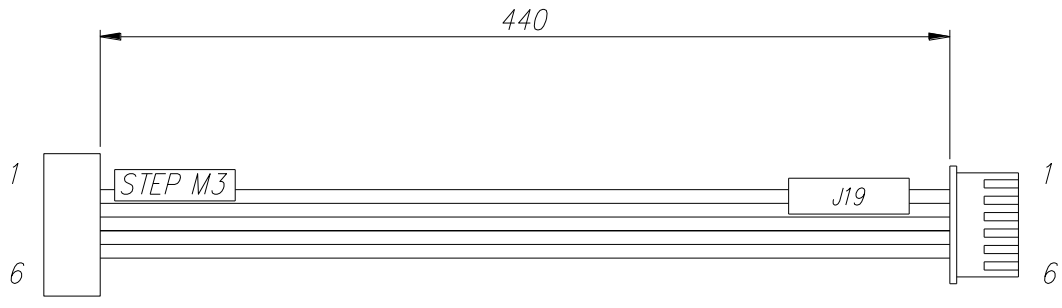
4.7.15 CABLE FEED3 VCDM [P/N:B1212P0423]



YDH200-10,YEONHO

IL-Y-3S,JAE

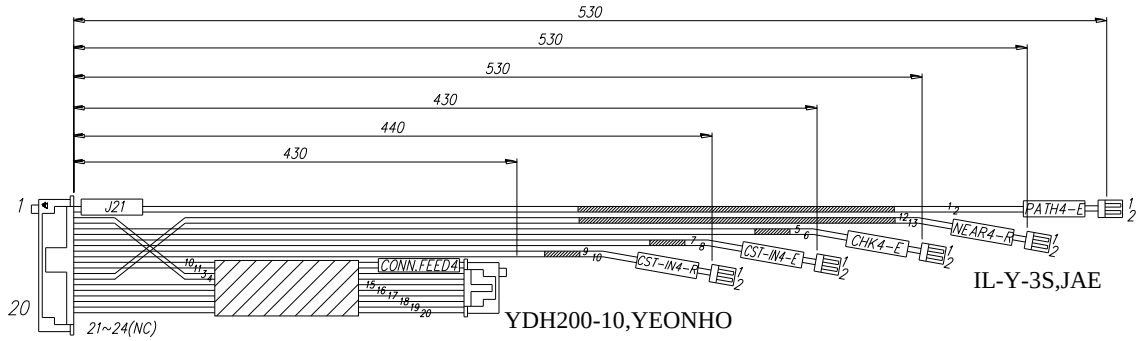
4.7.16 CABLE STEP MOTOR3 VCDM [P/N:B1212P0424]



PHR-06

SMH250-06,YEONHO

4.7.17 CABLE FEED4 PCB SIDE VCDM [P/N:B1212P0425]

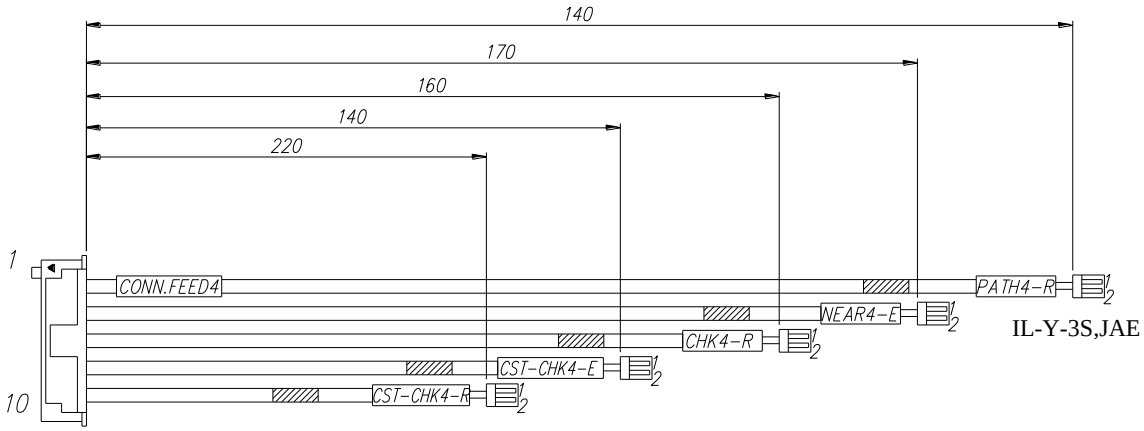


YDH200-24,YEONHO

YDH200-10,YEONHO

IL-Y-3S,JAE

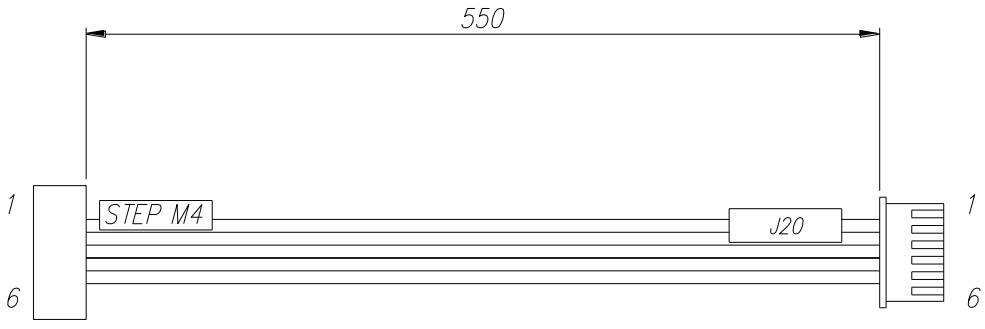
4.7.18 CABLE FEED4 VCDM [P/N:B1212P0426]



YDH200-10,YEONHO

IL-Y-3S,JAE

4.7.19 CABLE STEP MOTOR4 VCDM [P/N:B1212P0427]



PHR-06

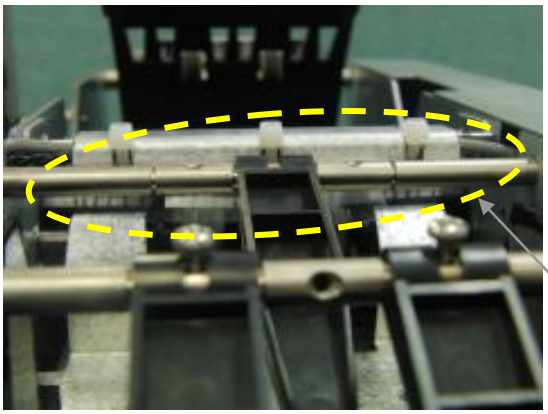
SMH250-06,YEONHO

5 MAINTENANCE

5.1 UNIT VCDM-30N MECHA

NO	Item	How to Check or Repair	Checking Point	Clean Period	Refer.
1	ANTI-STATIC BRUSH	Checking BRUSH	Visual Status	N/A	**5.1-A**
2	TIMING BELT	Checking belts status with manual feeding by driving knob	Noise, Belt Separation	N/A	**-**
3	SWING SELECTOR (DIVERTING MECHANISM PART)	1) Test Operaton by using TEST PROGRAM 2) Checking Linkage Operation by MANUAL	Test Operation	N/A	**5.1-B**
4	BLDC MOTOR	Visual checking appearance of MOTOR and cable harness	Visual Status	N/A	**5.1-C**
5	PATH SENSOR	CLEANING with Cotton swab	Checking Sensor Status After CLEANING	1YEAR or 200,000 NOTE	**5.1-D**
6	CABLE & CONNECTOR	Visual Checking	Peel-off of CABLE, CONNECTOR Assembling	N/A	**5.1-E**
7	NEAREND SENSOR	CLEANING with Cotton swab	Checking Sensor Status After CLEANING	1YEAR or 200,000 NOTE	**5.1-F**

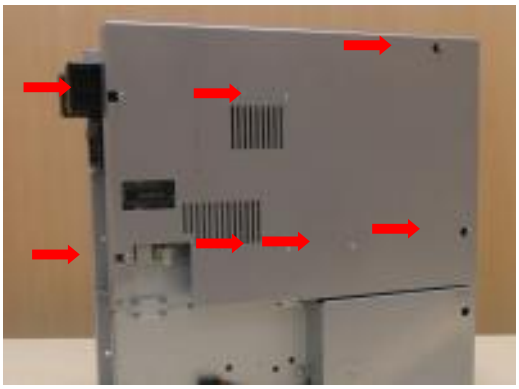
5.1.1 ANTI-STATIC BRUSH



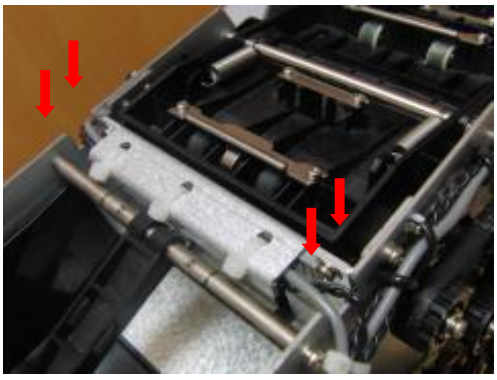
Check if Brush is damaged too much and then try to change it if it is.

[Changing Procedure]

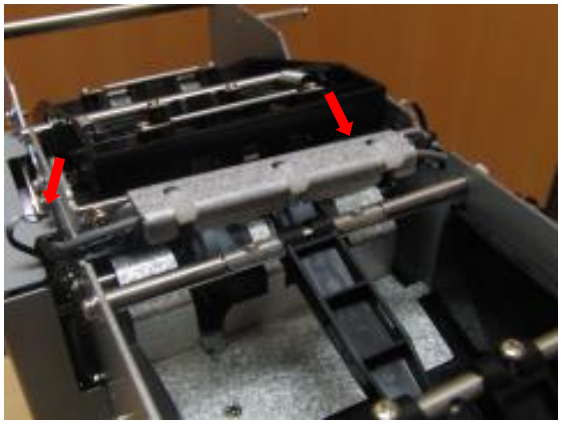
① Loosen and remove seven screws on each side of frame according to the picture.

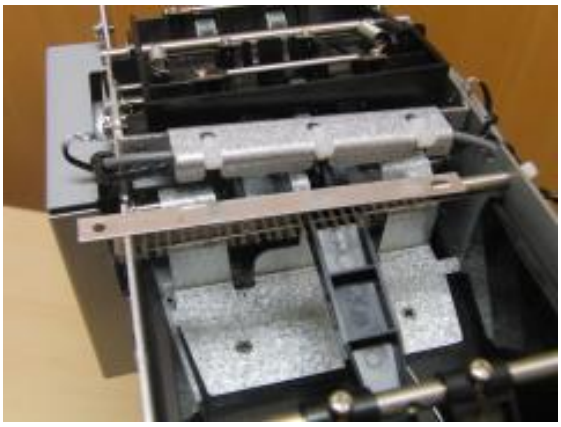


② Loosen and remove 4 screws on two side(left/right) of frame according to the picture.



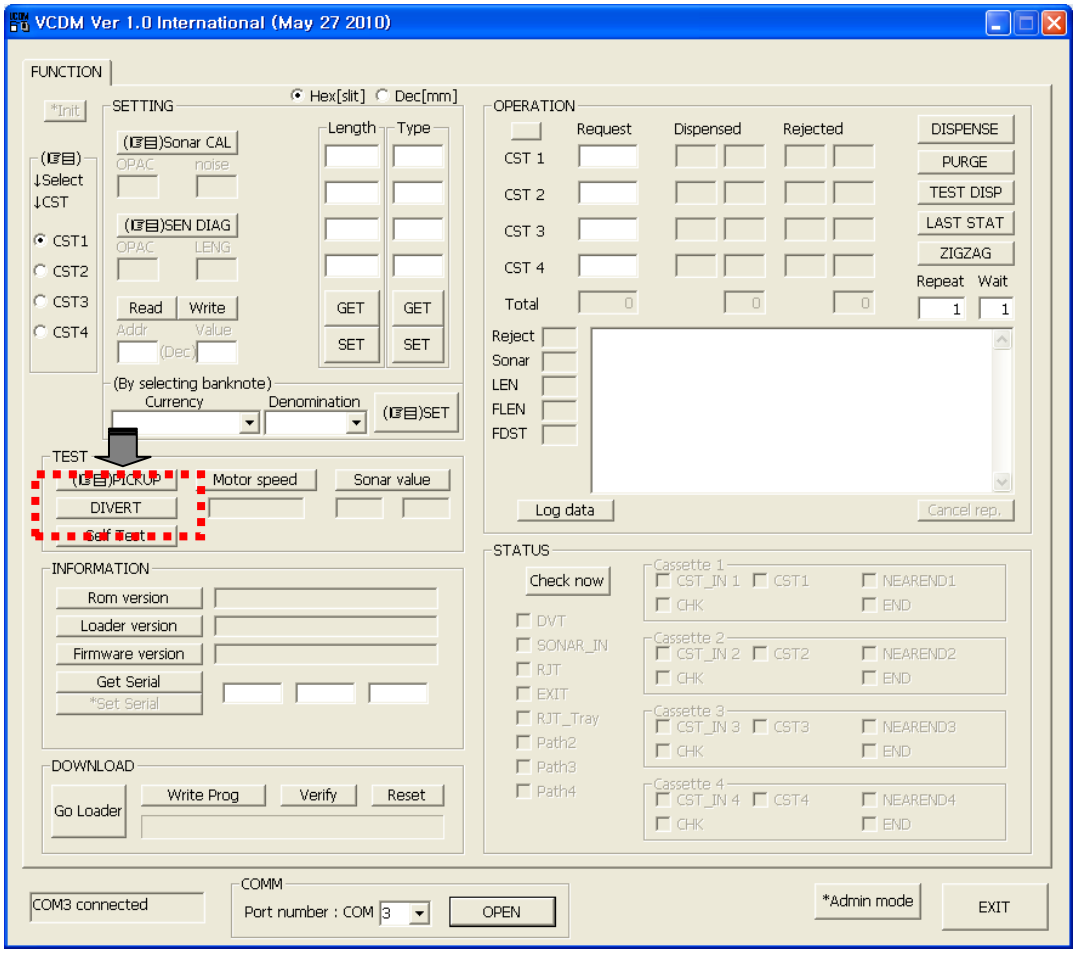
③ Loosen and remove 2 screws on brush bracket according to the picture. And replace damaged brush with new one.

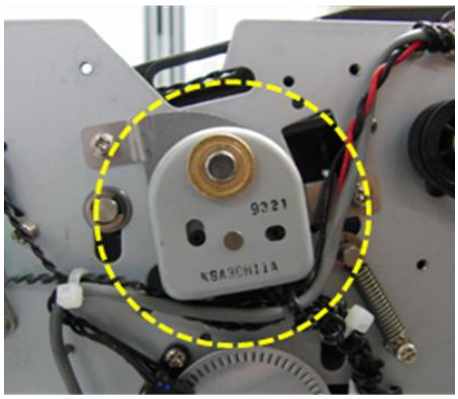




④ After replacement, assembly is reverse order of disjointing as above described.

5.1.2 DIVERTING

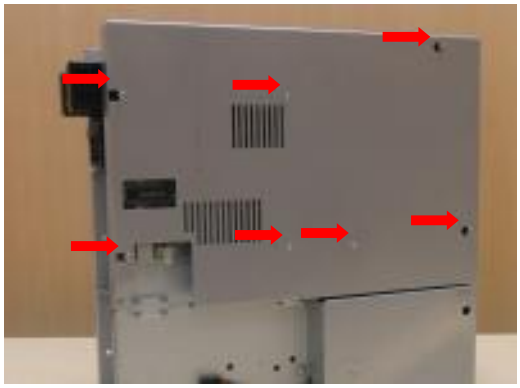


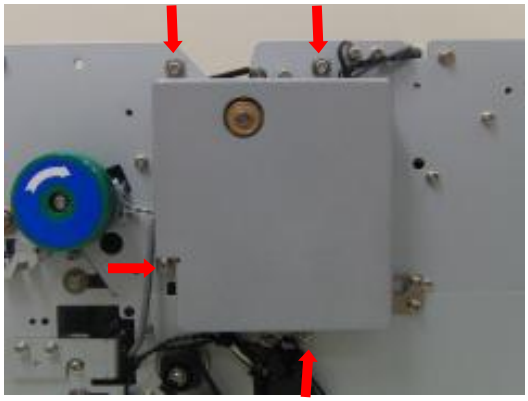


1) TEST TAB → DIVERT Button : Checking operation of SWING SELECTOR.

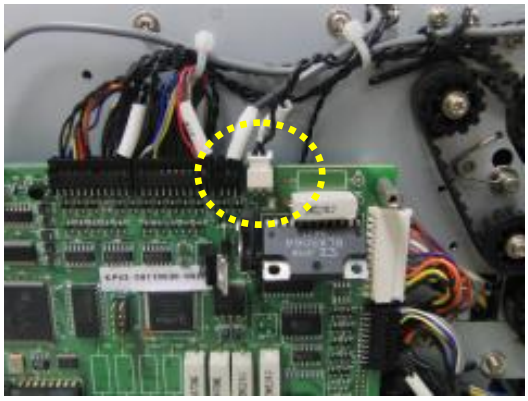
[Changing Procedure]

① Loosen and remove seven screws on each side of frame according to the picture.
② Loosen and remove four screws on each side of frame according to the picture. And remove the cover

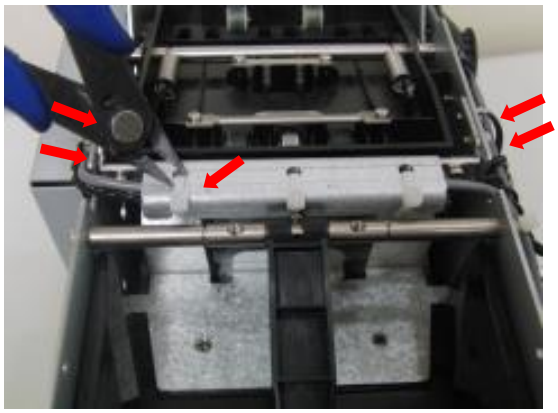




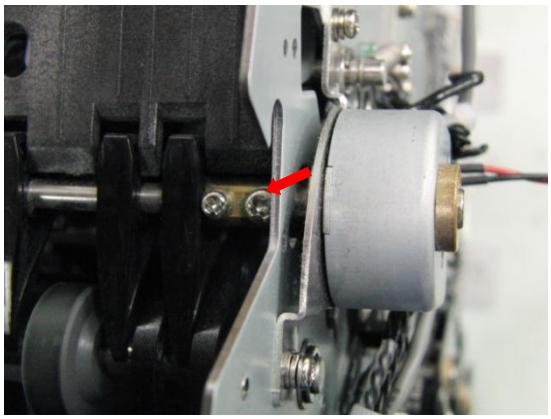
③ Unconnect the connection of swing selector.



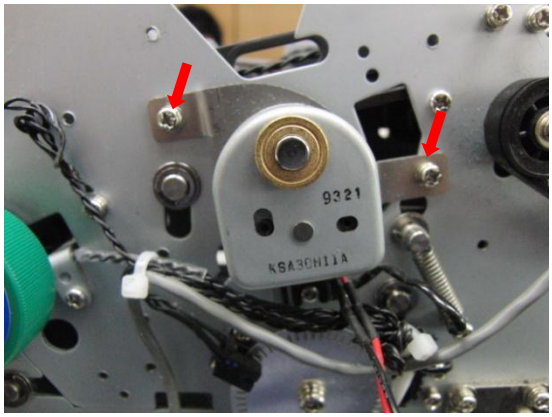
④ For removal of bill press guide, loosen and remove four screw on each side of frame according to the picture. And cut three wire clamping with cutter.



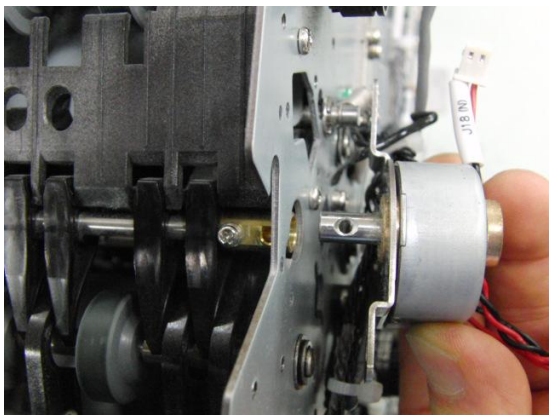
⑤ Loosen and remove one screw between diverter shaft and swing selector.
[Caution] Must be remove screw at the side of swing selector.



⑥ Loosen and remove two screw on swing selector bracket according to the picture.

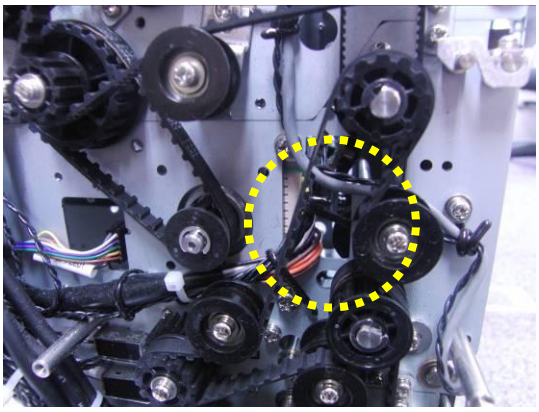


⑦ After removal of all screw, replace the swing selector with new one.



⑧ After replacement, assembly is reverse order of disjointing as above described.

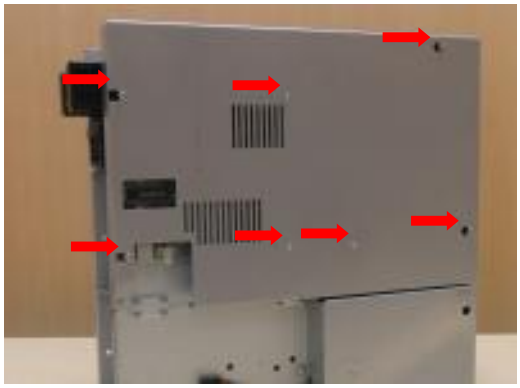
5.1.3 BLDC MOTOR

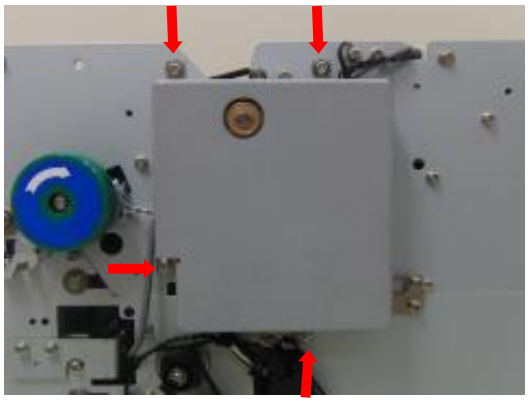


1) Please remove the cover and check if Motor related cable is okay or have problem like shortage or peel off.

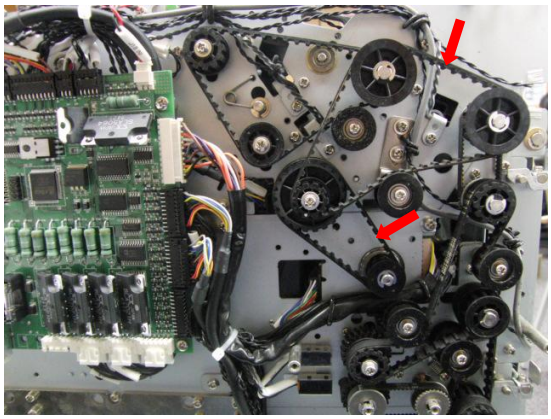
[Changing Procedure]

① Loosen and remove seven screws on each side of frame according to the picture.
② Loosen and remove four screws on each side of frame according to the picture. And remove the cover

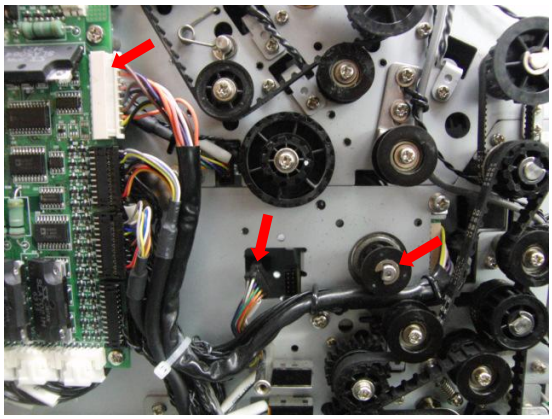




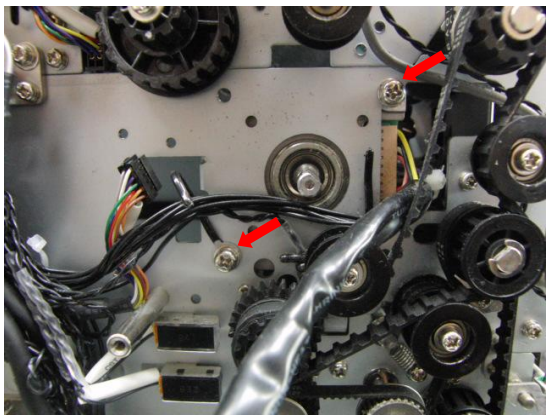
③ Remove the timming belt 1, 2 according to the picture.

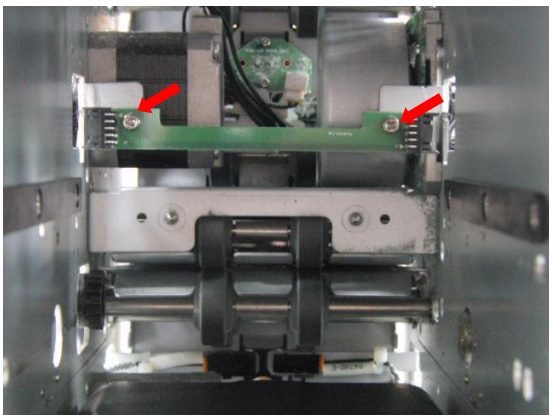


④ Unconnect the BLDC connector and sensor connector and remove one E-type ring and remove one pulley at the axis of BLDC motor according to the picture.

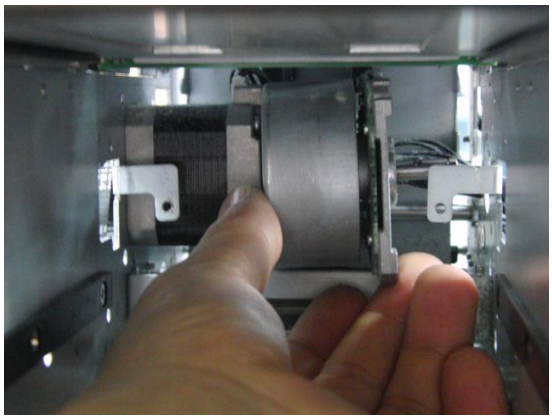


⑤ Loosen and remove two screws on the frame and loosen and remove two screws on bended position of frame, and remove connection PWA according to the picture.



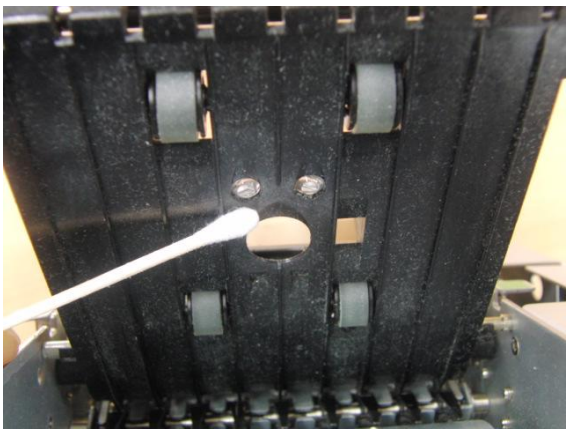


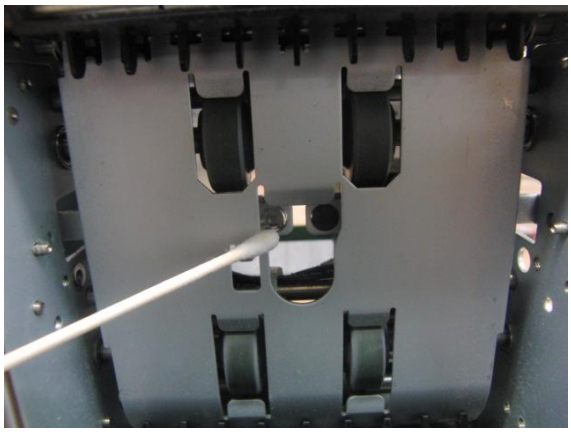
⑥ After removal of all screws and PWA, replace the BLDC motor with new one.



⑦ After replacement, assembly is reverse order of disjointing as above described.

5.1.4 PATH SENSOR





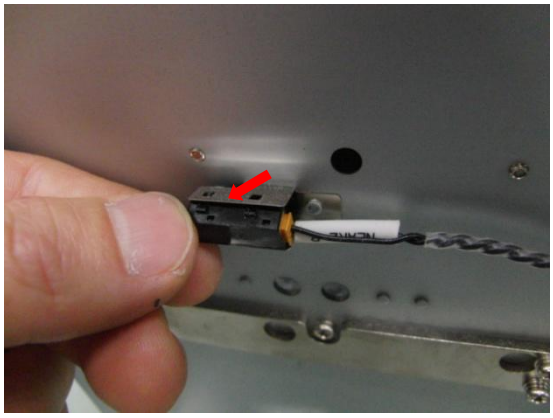
1) GUIDE OPEN→ Clean by using of cotton swab the optical sensor and surface and reflected lens of sensor.

[Changing Procedure]

- All Changing Precedure are done with the condition of cover off.

(1) Type 1 – Near-end Sensor, CST_IN Sensor, CST Sensor

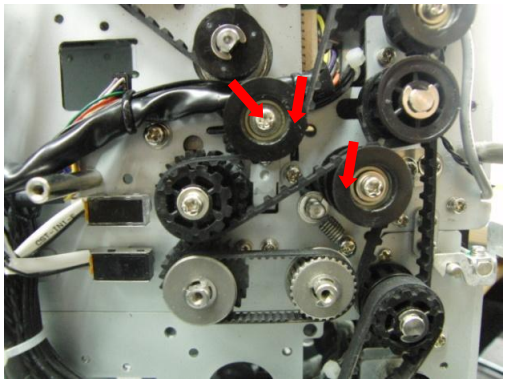
① Loosen the holder of sensor and remove sensor, and unconnect the connector
② After removal of sensor, replace sensor with new one.
③ New Sensor assemble with snap fit of the holder easily.



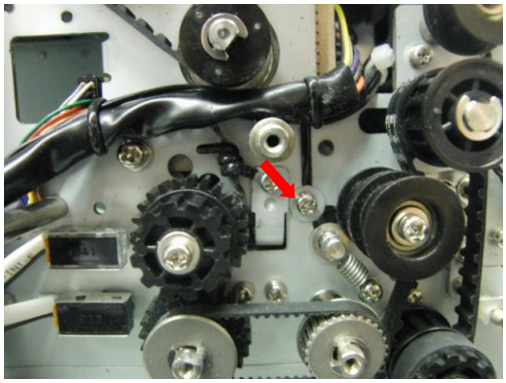
(2) Type 2 – Path Sensors(CHK Sensor, RJT Sensor, Path Sensor)

[CHK Sensor]

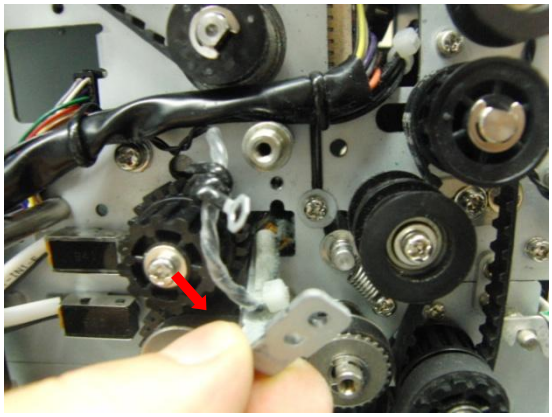
① Remove the belt and loosen and remove one screw on the idle roller, and remove idle roller according to the picture.



② Loosen and remove one screw on sensor bracket according to the picture.

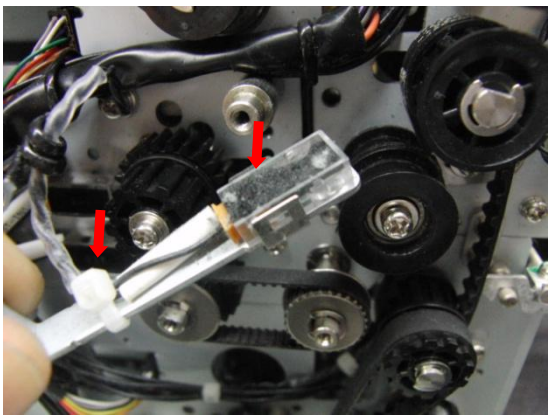


③ Pull sensor bracket out of the frame according to the picture.



④ Cut wire clamping and unplug the connector on sensor.

After removal of harness, loosen the holder of sensor. And then, replace sensor with new one.



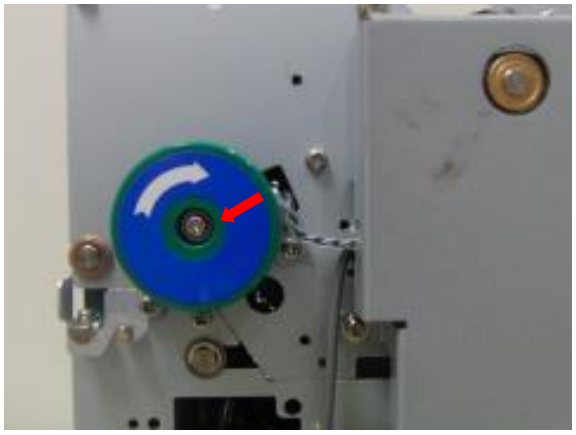
⑤ After replacement, assembly is reverse order of disjointing as above described.

[Caution]
Avoiding of cut the wire off, don't fasten wire clamping with excessive force.

[RJT/Path Sensor]
→ Changing procedure is similar to CHK Sensor replacement as above described procedure.

(3) Type 3 – Div Sensor

① Loosen and remove one screw on the knob according to the picture.



② Loosen and remove one screw on the sensor bracket according to the picture.

③ Pull sensor bracket out of the frame according to the picture.

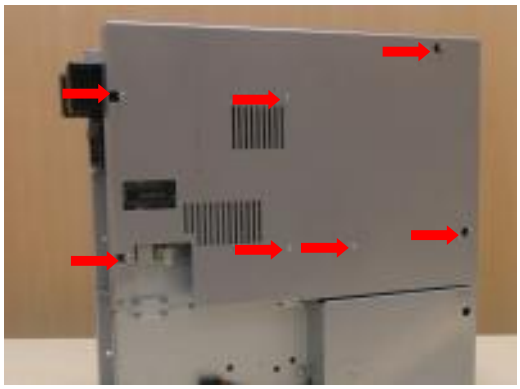
④ Cut wire clamping and unplug the connector on sensor PWA.
After removal of harness, loosen and remove two screw on PWA. And then, change sensor PWA with new one.

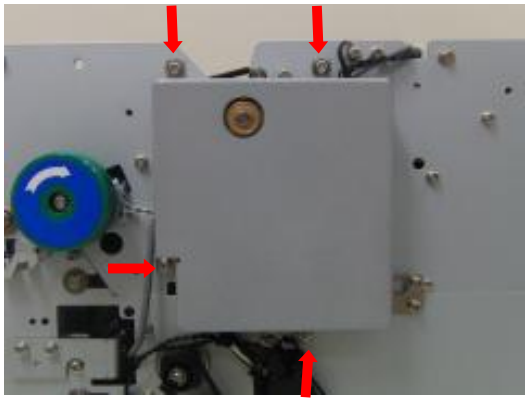
⑤ After replacement, assemble with the reverse method of above described procedure.

[Caution]
Avoiding of cut the wire off, don't fasten wire clamping with excessive force.

(4) Type 4 – Exit Sensor

① Loosen and remove seven screws on each side of frame according to the picture.
② Loosen and remove four screws on each side of frame according to the picture.
And remove the cover





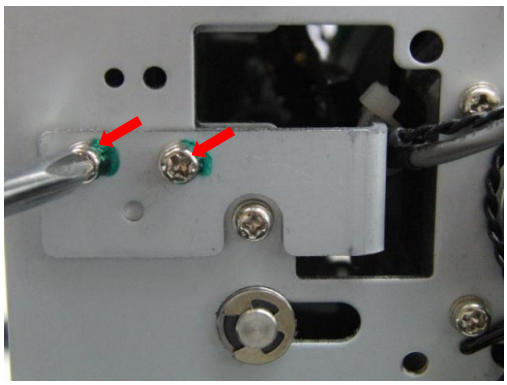
③ Loosen and remove 2 screws on two side(left/right) of frame according to the picture.

④ Pull sensor bracket out of the frame according to the picture.
⑤ Cut wire clamping and unplug the connector on sensor.
After removal of harness, loosen the holder of sensor. And then, replace sensor with new one.

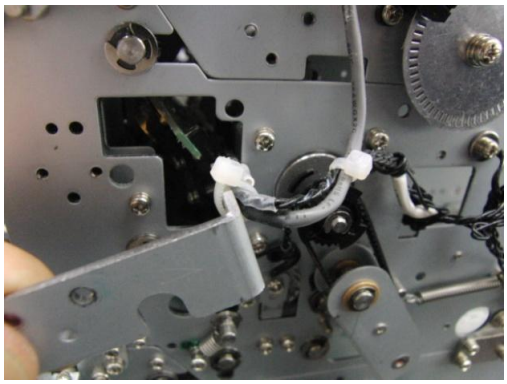
⑥ After replacement, assembly is reverse order of disjointing as above described

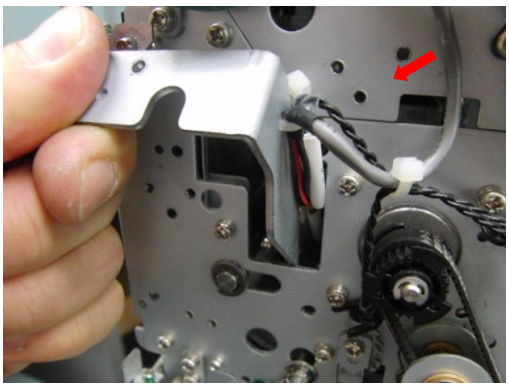
(5) Type 5 – Sonar Sensor – Emit Part

① Loosen and remove two screws on the sensor bracket according to the picture.

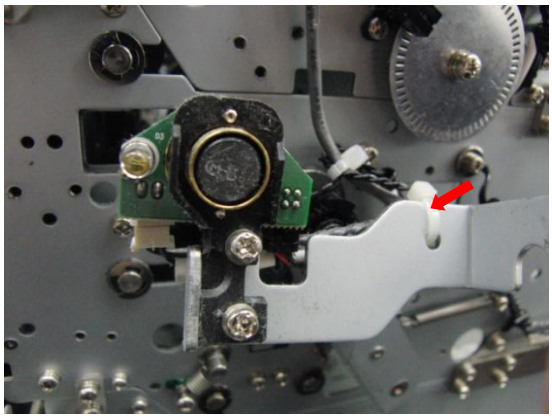


② After removal of screw, pull sensor bracket out of the frame, and then cut wire clamping according to the picture.

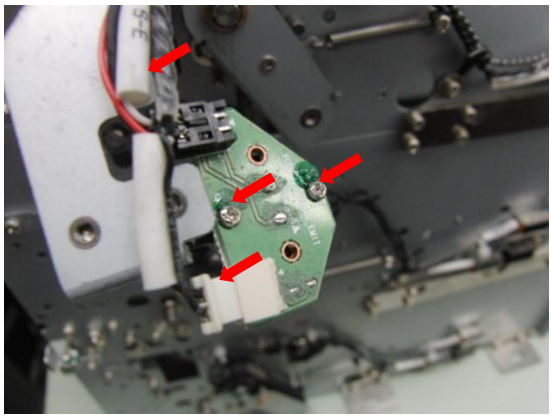




③ After pull out of bracket, cut wire clamping according to the picture.

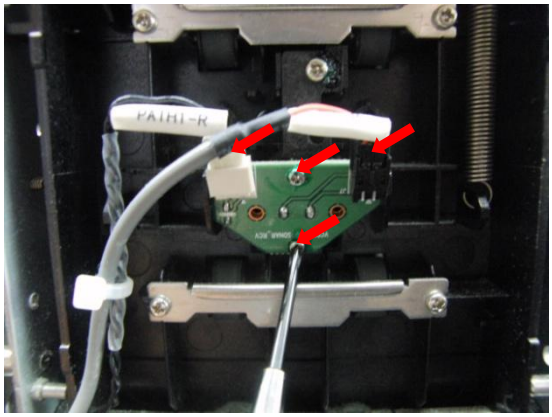


④ Unplug connector on sensor PWA, loosen and remove two screws on the PWA. After removal of sensor PWA, replace sensor PWA with new one.



⑤ After replacement, assembly is reverse order of disjointing as above described.

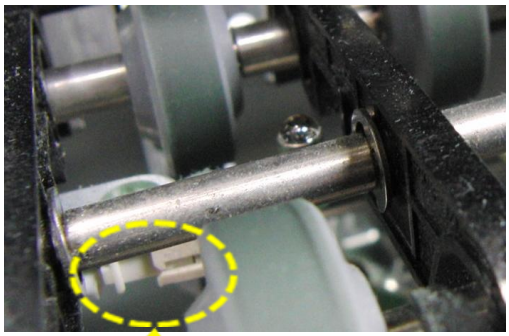
(6) Type 6 – Sonar Sensor – Receiver Part



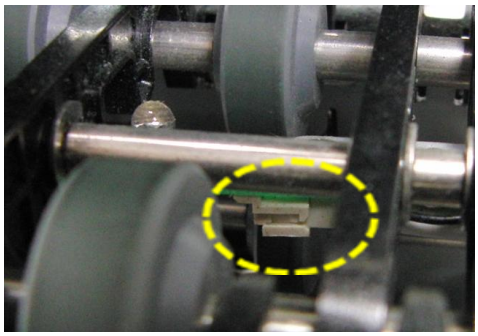
① Unplug connector on sensor PWA, loosen and remove two screws on the PWA. After removal of sensor PWA, replace sensor PWA with new one.

② After replacement, assembly is reverse order of disjointing as above described.

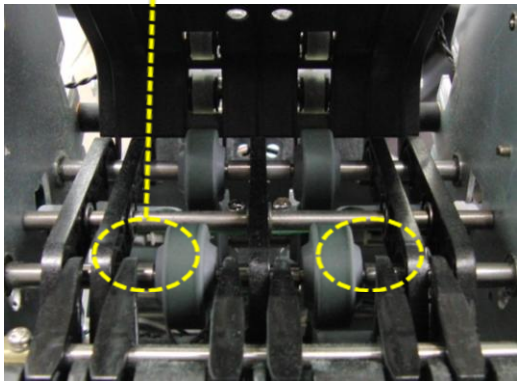
5.1.5 CABLE & CONNECTOR



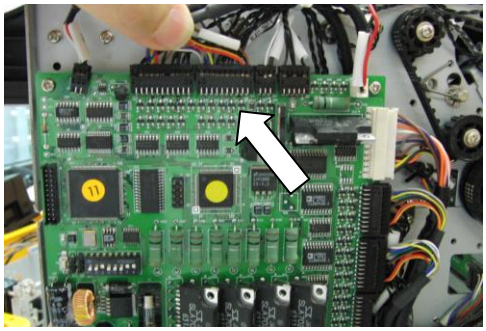
(Picture 1)



(Picture 2)

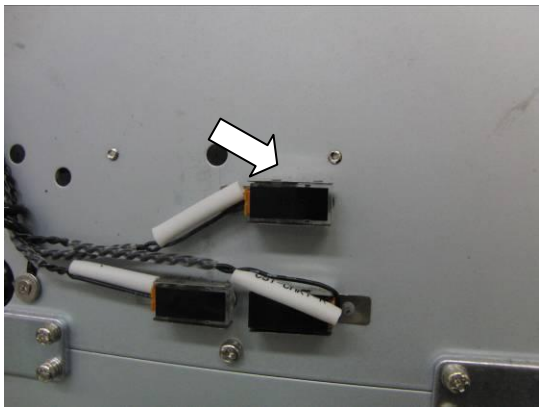


(Picture 3)



1) Check SENSOR PWA CONNECTOR.
2) Check CONNECOTR of MAIN PWA

5.1.6 NEAREND(LOW-NOTE) SENSOR



1) Pull Cash Cassette out and clean NEAREND SENSOR by cotton swab
2) Clean the NEAREND SENSORs on both sides.

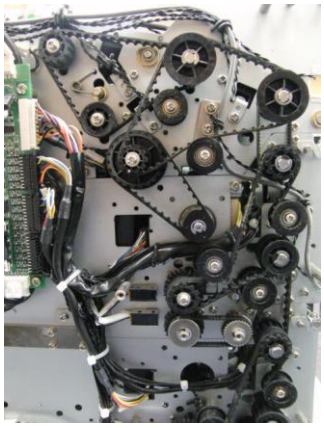
5.1.7 TIMMING BELT

1) Please remove the cover and check if the noise of belt.
2) If the crack or separation of belt, replace belt with new one.

[Changing Procedure]

- All Changing Precedure are done with the condition of cover off.
- Belt configuration(see 3.5 Timming Belt Configuration) is shown as two level of height with the position of pulley.

(1) Type 1 – Low level belt (close to frame)
(2) Type 2 – High level belt (close to cover)



① For the case of type 2 belts, belt is easily changed.
② For the case of type 1 belts, remove the type 2 belt and pulley at same position before

changing belt.

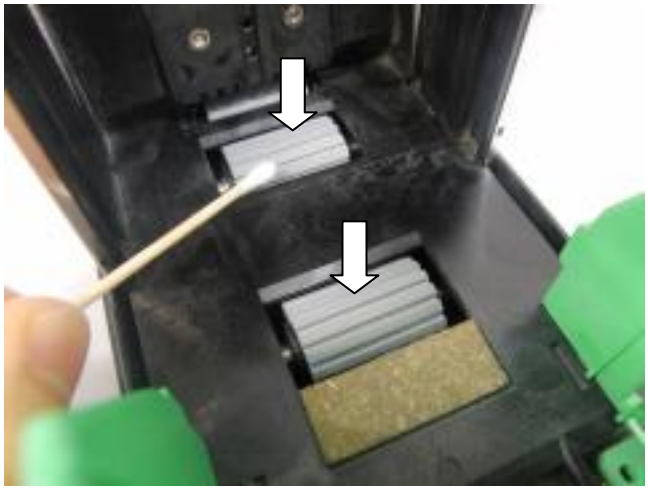
③ After removal of belt, replace belt with new one.

④ After replacement, assembly is reverse order of disjointing as above described.

5.2 UNIT CASH CASSETTE VCDM

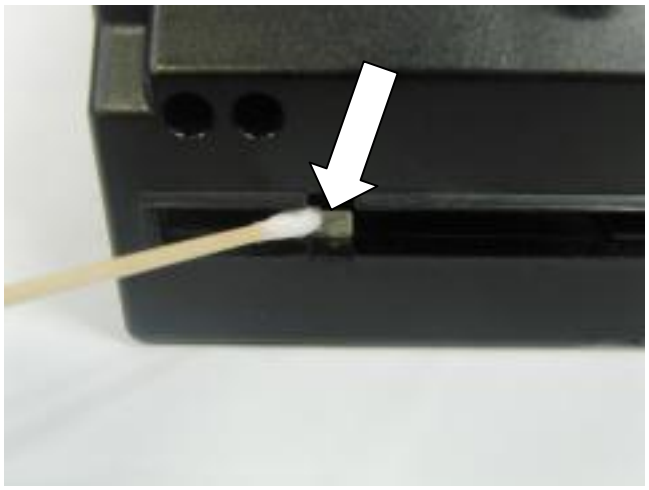
NO	Item	How to Check or Repair	Checking Point	Clean Period	Refer.
1	Pick-up Roller	Cleaning the surface of Rubber by clothing or cotton swab	Check ROLLER status after celaning	1YEAR or 200,000 NOTES	**5.2-A**
2	Lens	Cleaning by cotton swab	Check SENSOR after celaning	1YEAR or 200,000 NOTES	**5.2-B**
3	Pushing Plate Lock	Checking MANUAL LOCK	Checking damage	N/A	**5.2-C**
4	Key Lock, Manual Lock	Checking Key operation by Manual	Checking damage	N/A	**5.2-D**
5	Cassette Lock	Checking Pusher operation by Manual	Checking damage	N/A	**5.2-E**

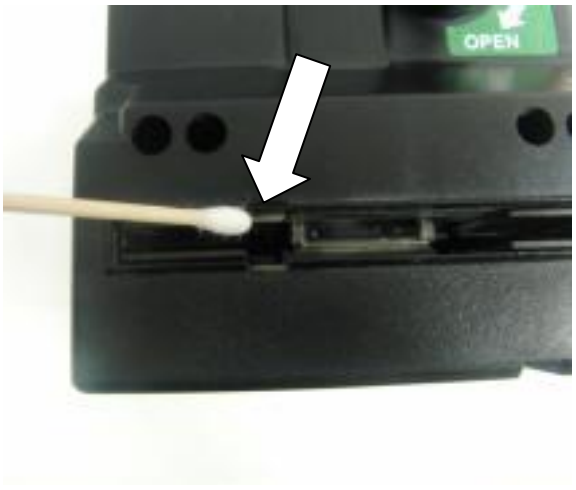
5.2.1 PICKUP ROLLER



1) Remove dust from Rubber of PICKUP ROLLER by cotton swab.

5.2.2 LENS





1) Clean Upper & Lower Lens on the outlet of Cash Cassette by cotton swab.

5.2.3 KEY LOCK, MANUAL LOCK

(Picture 1)

(Picture 2)

1) Through Key locking and unlocking, check whether the Lock is operated normally .(Picture1)
2) Through manual locking and unlocking, check if the Lock is operated normally.(Picture2)

5.2.4 CASSETE LOCK

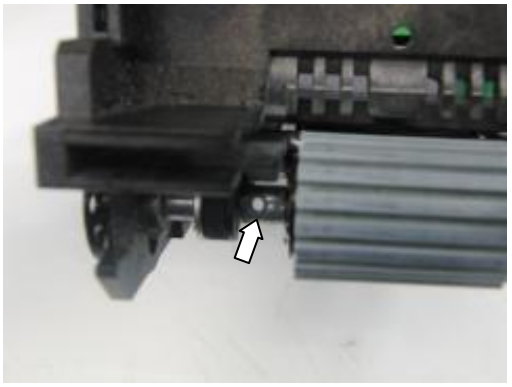
1) Pushing of LOKING PUSHER under CASSETTE , check whether the Lock is operated normally.

5.2.5 CASSETE PART CHANGING PROCEDURE

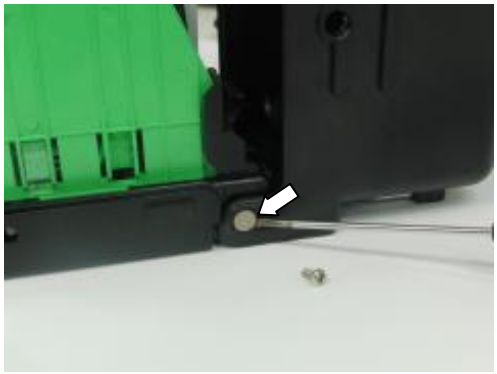
[Preparing of changing spare parts]

① Loosen and remove one screw, pull gear off the cassette.

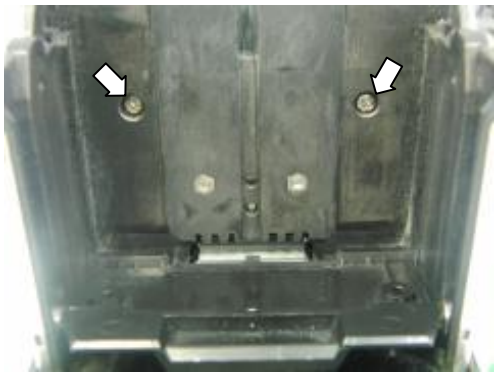
※Notice.
When loosening, insert the wrench driver into the hole of the feed shaft.



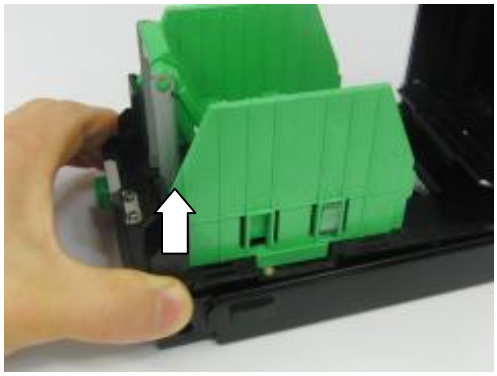
② Loosen and remove two screws, pull two hinge pins off the cassette.

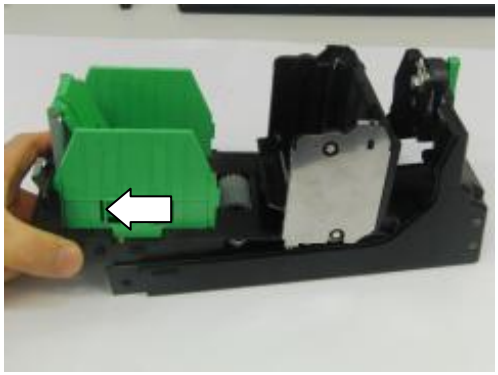


③ Loosen and remove two screws on the front side.



④ After removal of all screws, pull the frame of cassette out upper side. And then disjoint frame assy from bottom cover.

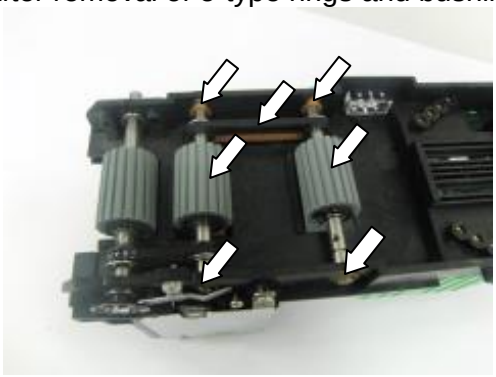




⑤ After replacement, assembly is reverse order of disjointing as above described.

(1) Pick-Up roller or timming belt

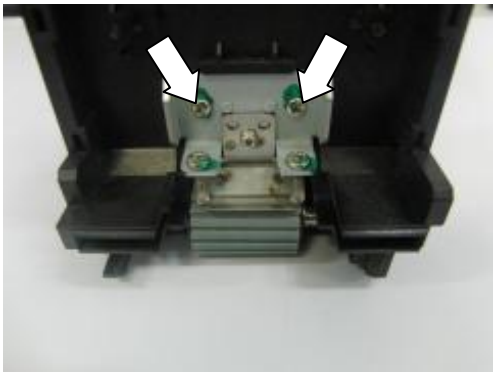
① Loosen and remove two e-type rings and bushing.
② After removal of e-type rings and bushing, replace pick-up roller or belt with new one.

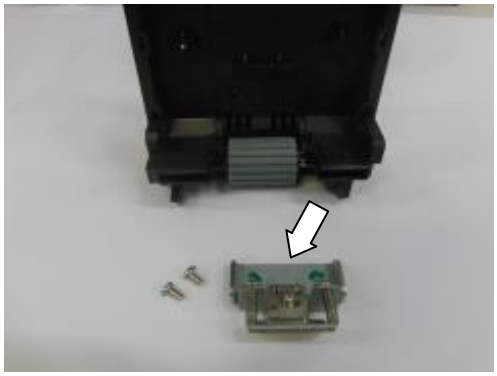


③ After replacement, assembly is reverse order of disjointing as above described.

(2) Separation plate

① Loosen and remove two screws on the front side of frame.
② After removal of screws, replace separation plate with new one.

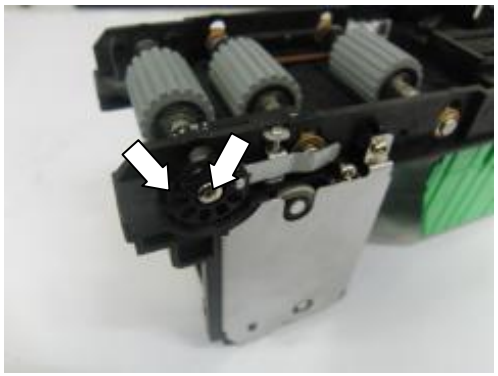


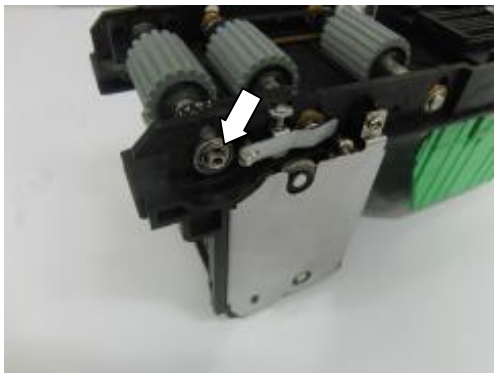


③ After removal of screws, replace separation plate with new one.

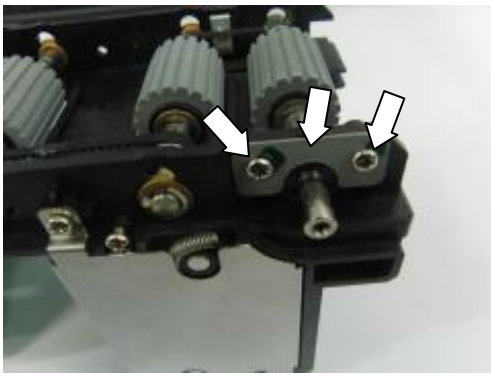
(3) Feed roller

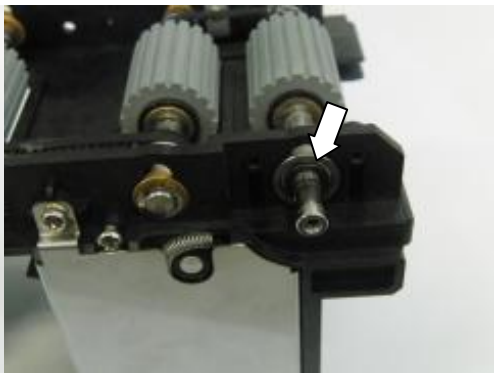
① Loosen and remove one screw on wheel lock, and remove wheel lock & bearing.





② Loosen and remove two screws on the other side of wheel lock, and remove the bracket & bearing





③ After removal of screws, replace separation plate with new one.

6 TROUBLE SHOOTING – ERROR CODES

The trouble shooting process of VCDM for each trouble is like the below.

6.1 ERROR CODE LIST

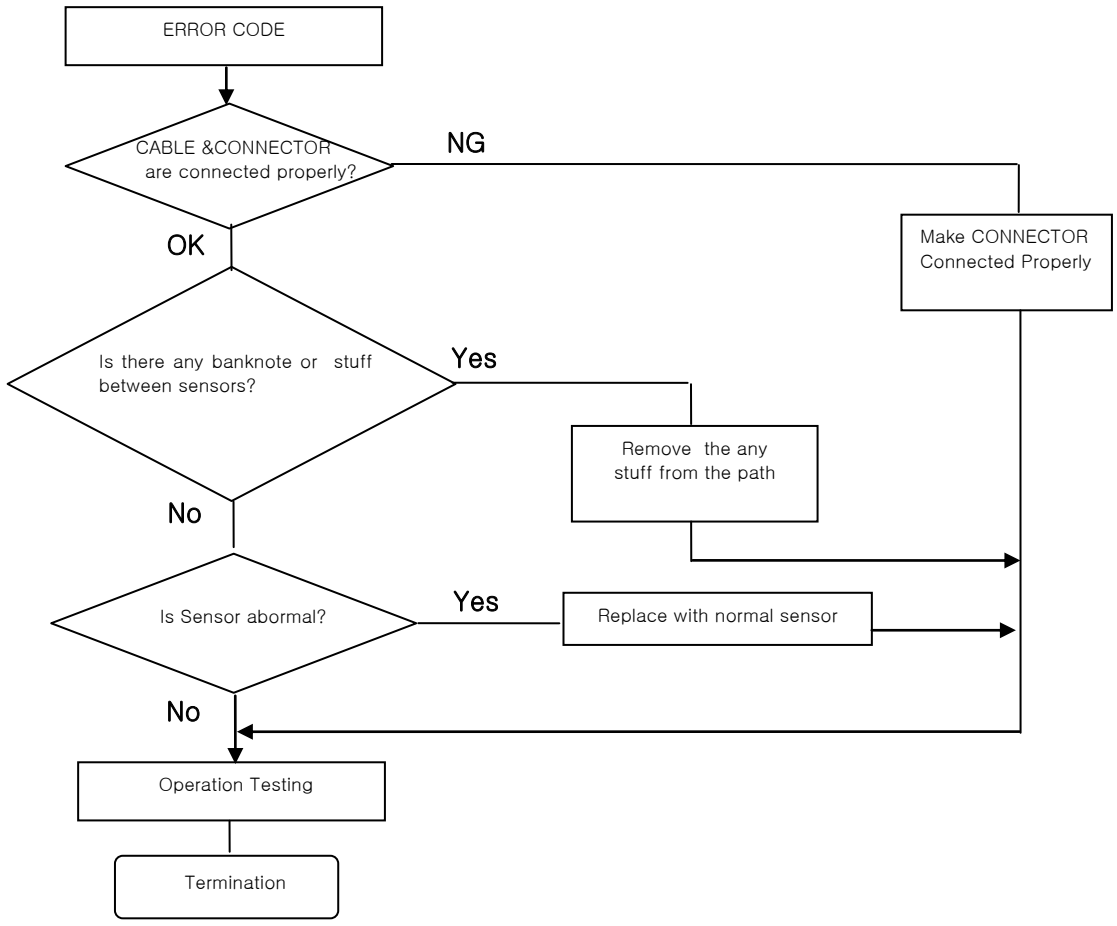
CODE	Description
0x01	Feeding Time-out between CHECK Sensor and SONAR Sensor
0x02	Feeding Time-out between SONAR Sensor and DIVERT Sensor
0x03	Feeding Time-out between DIVERT Sensor and EXIT Sensor
0x04	Feeding Time-out between DIVERT Sensor and REJECT Sensor
0x05	A Note Is Staying at EXT Sensor
0x06	Ejecting the Note Suspected as Rejected
0x07	Abnormal Note Management (Flow Processing Error)
0x08	Abnormal Note Management (Flow Processing Error)
0x09	Rejecting the Note Suspected as Ejected
0x0B	Detecting Notes on the Path Before Start of Pick-up
0x0C	Too Many Pick-up Events During Dispensing from One Cash Cassette (Limits of Total Pickup : 50 Notes Including all the Rejected)
0x0D	Too Many Rejects During Dispensing from One Cash Cassette (Limit: 20 notes)
0x0E	Abnormal Termination During Purge Execution
0x0F	A Note Is Staying at REJECT Sensor
0x11	Detecting Trouble in Motor or Slit Sensor Before Dispensing
0x12	Not Detecting Reject Tray before Start or for Operation
0x13	Failed to Calibrate Sensors
0x14	More Banknotes than the Requested are Dispensed.
0x15	Dispensing is Not Terminated within 90 Seconds.
0x16	Recogniging Abnormal Command
0x17	Recognizing Abnormal Parameters on the Command
0x18	Downdoad Sequecne is incorrect.
0x19	Failure of Write
0x1A	Not to Give Verify command on Reset after Downloading Program
0x1B	Failure of Writing EEPROM
0x1C	Mismatches Checksum of EEPROM on Writing EEPROM
0x1D	Error in Dispense Serial Number or Identifiaction Number of Dispense Command (in case of the same value of Serial)
0x1E	ACK message was not return from host after dispenser transmit response.
0x1F	Detect Notes in Exit Sensor at Purge
0x20	Divert Sensor is Always On
0x21	Exit Sensor is Always On.
0x22	Reject Sensor is Always On.

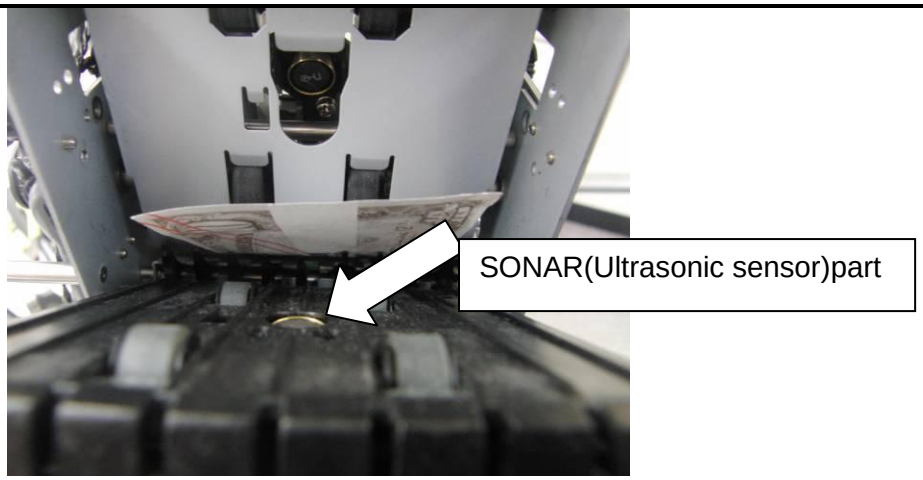
0x23	Sonar Sensor is Always On.
0x26	Back-Feeding Time-out between DIVERT Sensor
0x28	Divert Sensor is Always Off.
0x29	Exit Sensor is Always Off
0x2A	Reject Sensor is Always Off.
0x2B	Sonar Sensor is Always Off.
0x30	Path1 Sensor is Always On.
0x31	Check1 Sensor is Always On.
0x32	CST_IN1 Sensor is Always On.
0x33	Path2 Sensor is Always On.
0x34	Check2 Sensor is Always On.
0x35	CST_IN2 Sensor is Always On.
0x36	Path3 Sensor is Always On.
0x37	Check3 Sensor is Always On.
0x38	CST_IN3 Sensor is Always On.
0x39	Path4 Sensor is Always On.
0x3A	Check4 Sensor is Always On.
0x3B	CST_IN4 Sensor is Always On.
0x40	Path1 Sensor is Always Off.
0x41	Check1 Sensor is Always Off.
0x42	CST_IN1 Sensor is Always Off.
0x43	Path2 Sensor is Always Off.
0x44	Check2 Sensor is Always Off.
0x45	CST_IN2 Sensor is Always Off.
0x46	Path3 Sensor is Always Off.
0x47	Check3 Sensor is Always Off.
0x48	CST_IN3 Sensor is Always Off.
0x49	Path4 Sensor is Always Off.
0x4A	Check4 Sensor is Always Off.
0x4B	CST_IN4 Sensor is Always Off.
0x50	Banknote Pick Up Error in the Cassette1 on NEAREND State
0x51	Banknote Pick Up Error in the Cassette2 on NEAREND State
0x52	Banknote Pick Up Error in the Cassette3 on NEAREND State
0x53	Banknote Pick Up Error in the Cassette4 on NEAREND State
0x54	Jamming or sensor failure in the Cash Cassette1
0x55	Jamming or sensor failure in the Cash Cassette2
0x56	Jamming or sensor failure in the Cash Cassette3
0x57	Jamming or sensor failure in the Cash Cassette4
0x58	Not Detecting Cash Cassette1 before Start or for Operation
0x59	Not Detecting Cash Cassette2 before Start or for Operation
0x5A	Not Detecting Cash Cassette3 before Start or for Operation
0x5B	Not Detecting Cash Cassette4 before Start or for Operation
0x5C	Cash Cassette1 is Near-End (In Case of Near End Detection Mode)

0x5D	Cash-Cassette2 is Near-End (In Case of Near End Detection Mode)
0x5E	Cash-Cassette3 is Near-End (In Case of Near End Detection Mode)
0x5F	Cash-Cassette4 is Near-End (In Case of Near End Detection Mode)
0x60	Pick-up Error in Cassette1 (Banknotes exist in Cash Cassette1)
0x61	Pick-up Error in Cassette2 (Banknotes exist in Cash Cassette2)
0x62	Pick-up Error in Cassette3 (Banknotes exist in Cash Cassette3)
0x63	Pick-up Error in Cassette4 (Banknotes exist in Cash Cassette4)
0x80	Detect Note in Cassette 1 Check Sensor
0x81	Detect Note in Cassette 2 Check Sensor or Path 2
0x82	Detect Note in Cassette 3 Check Sensor or Path 3
0x83	Detect Note in Cassette 4 Check Sensor or Path 4
0x89	Detect Note in Sonar Sensor before pick up
0x8A	Detect Note in Diverter Sensor before pick up
0x8B	Detect Note in Exit Sensor before pick up
0x8C	Detect Note in Reject Sensor before pick up

6.2 NOTE JAM

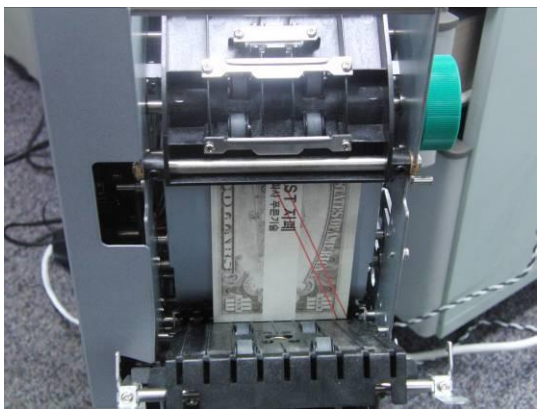
Trouble	Jamming Between CHK sensor and SONAR_IN sensor
Error Code	0x01
Checking Points	1. Is CONNECTOR (J15) and CABLE connected properly? 2. Is there any stuff in GUIDE_CASH_FEED3_VCDM to dispenser? 3. Is SONAR_IN (Emission and Reception) sensor normal?
Action	After checking, remove all the stuff on the path by manual driving Knob.

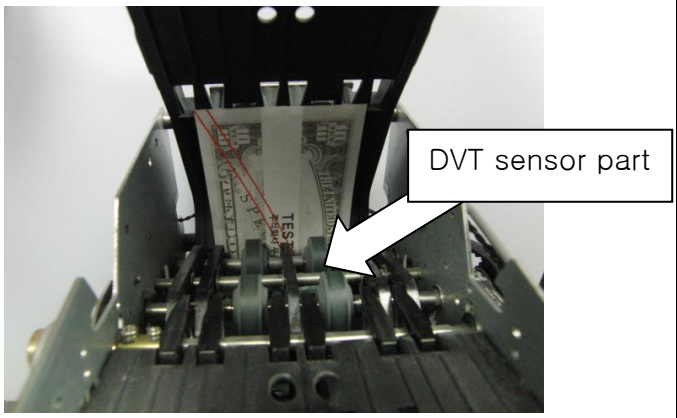




Trouble	Jam between SONAR_IN sensor and DVT sensor
Error Code	0x02, 0x26
Checking Points	1. Is CONNECTOR (J13) and CABLE connected properly? 2. Is there any stuff between DIV sensor and SONAR_IN sensor? 3. Is DVT sensor normal? 4. Is GUIDE_CASH_FEED5_VCDM fixed properly?
Action	After checking, remove all the stuff on the path by manual driving Knob.

< Picture >

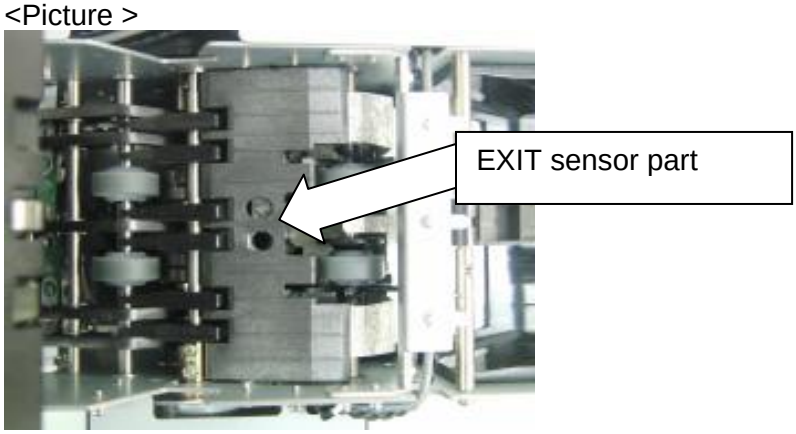




Trouble	Jam between DVT sensor and EXT sensor
Error Code	0x03
Checking Points	1. Is CONNECTOR (J13) and CABLE connected properly? 2. Is there any stuff between DVT sensor and EXT sensor? 3. Is the position of DIVERT normal? 4. Is GUIDE_CASH_FEED5_VCDM fixed properly?

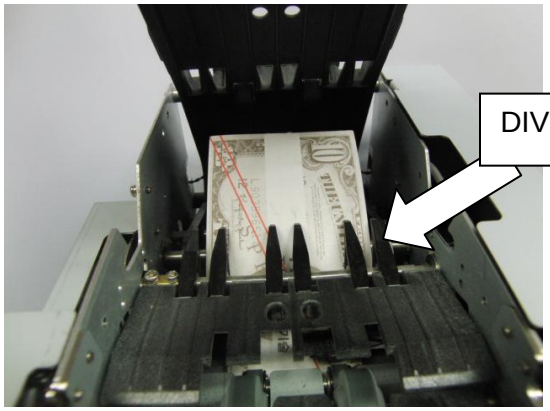
	5. Is EXT sensor normal?
Action	After checking, remove all the stuff on the path by manual driving Knob.

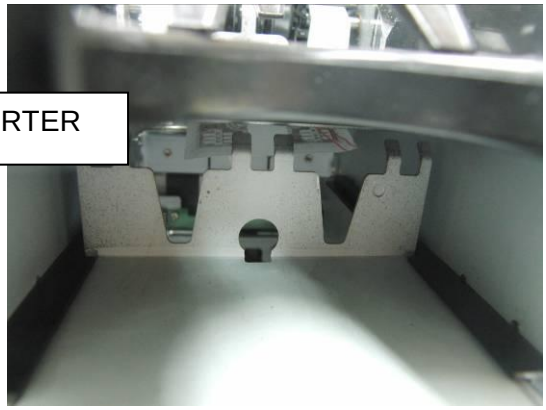
<Picture >



Trouble	Jam between DVT sensor and RJT sensor
Error Code	0x04
Checking Points	1. Is CONNECTOR (J13) and CABLE connected properly? 2. Is there any stuff between DVT sensor and RJT sensor? 3. Is the position of DIVERT normal? 4. Is the operation of DIVERT normal? 5. Is RJT sensor normal?
Action	After checking, remove all the stuff on the path by manual driving Knob

< Picture >

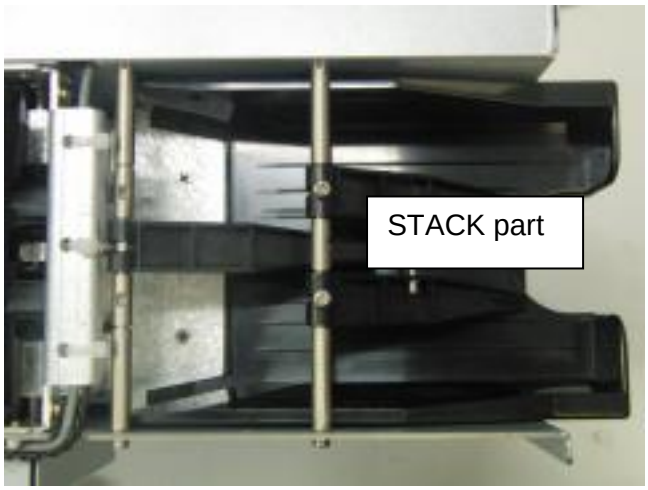




Trouble	EXIT sensor Jam
Error Code	0x05, 0x0A
Checking Points	1. Is CONNECTOR (J13) and CABLE connected properly? 2. Is there any stuff between EXIT sensor and STACK part?

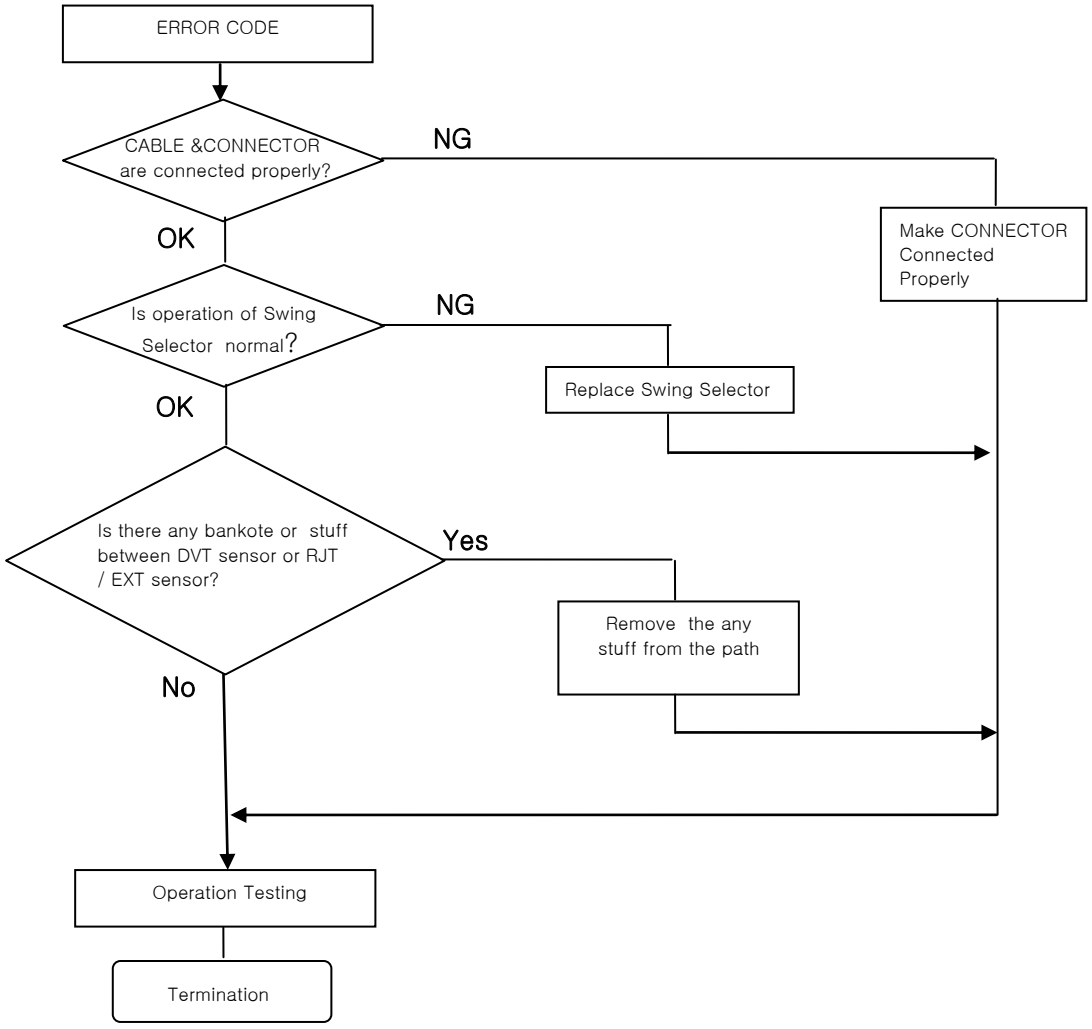
	3. Is GUIDE_CASH_FEED5_VCDM fixed properly? 4. Is IDLE ROLLER on Exit side of GUIDE_CASH_FEED5_VCDM? 5. Is operation of GUIDE_BILL_STACK normal? 6. Is EXIT sensor normal?
Action	After checking, remove all the stuff on the path by manual driving Knob

< Picture >



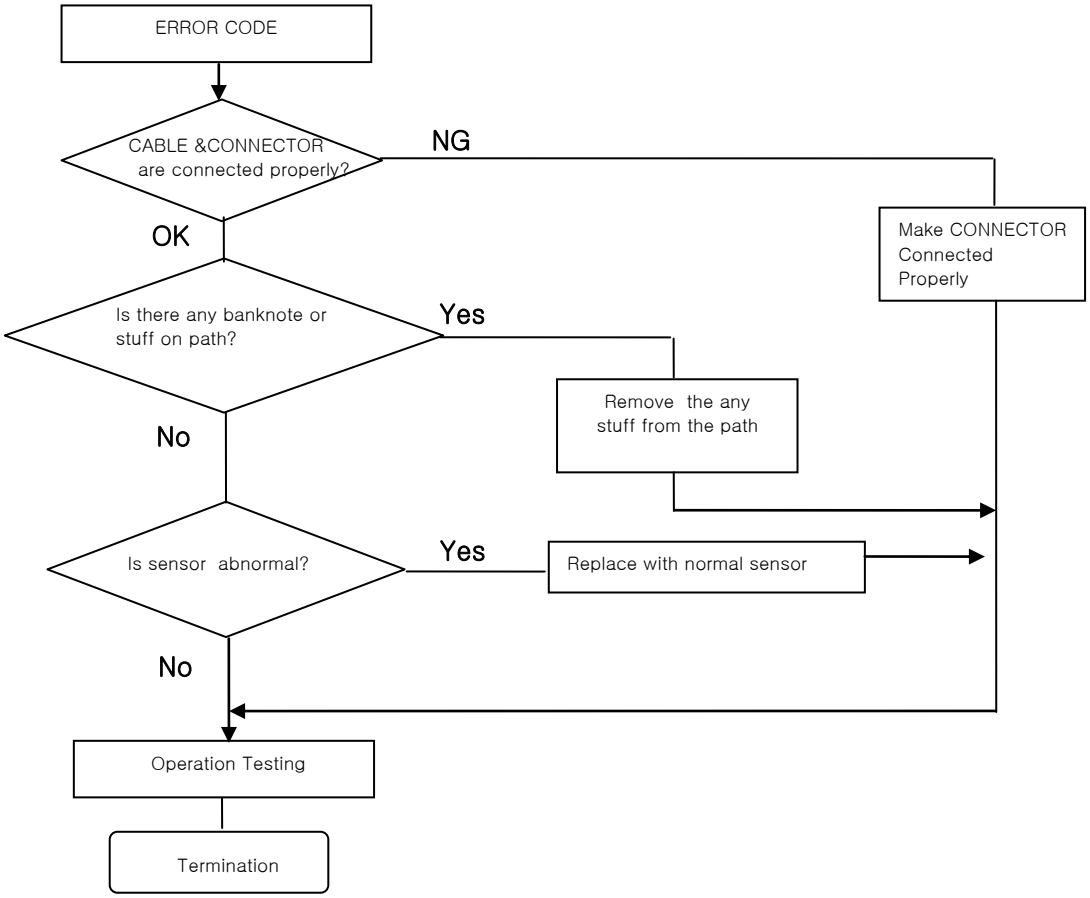
6.3 DIVERTING ERROR

Trouble	DIVERTER Operation Error
Error Code	0x06,0x07, 0x08, 0x09
Checking Points	1. Is Swing Selector CONNECTOR (J18) connected properly? 2. Is operation of Swing Selector normal? 3. Is there any stuff between DVT sensor and EXT sensor or DVT sensor and RJT?
Action	After clearing error, recheck normal operation.



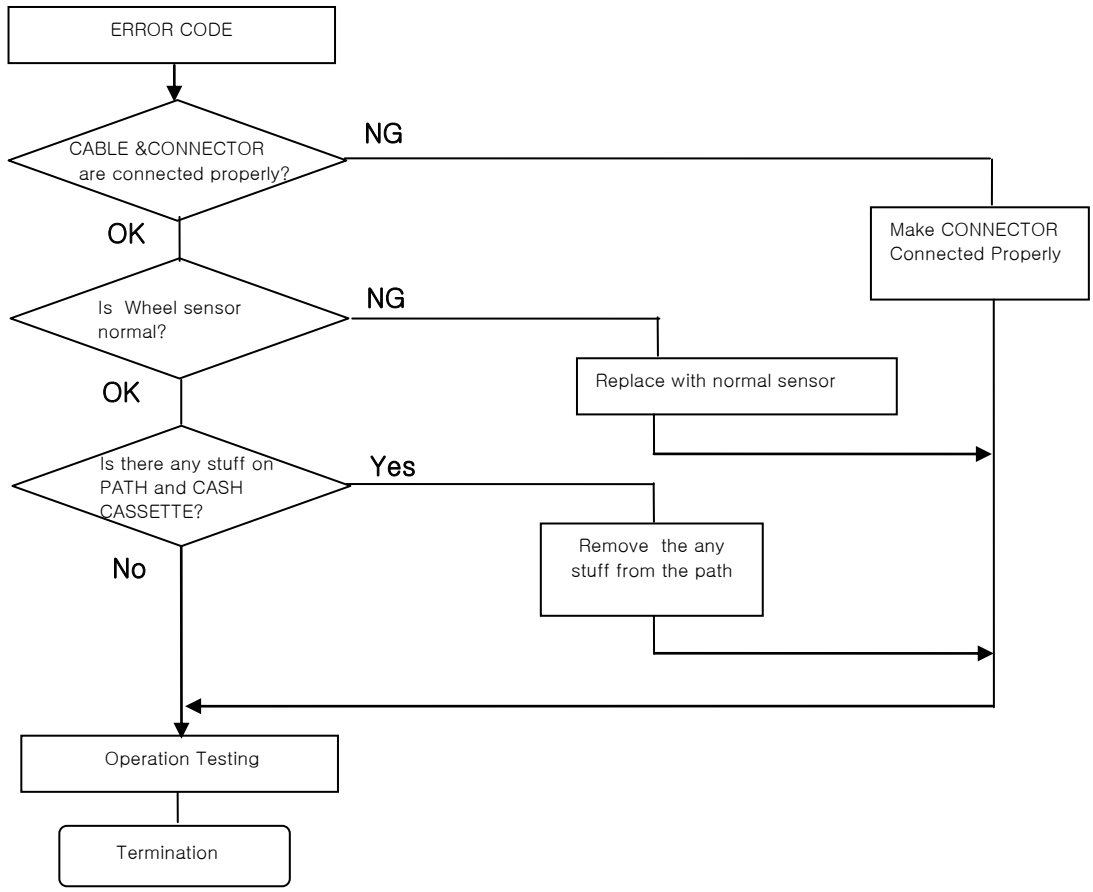
6.4 SENSOR ERROR

Trouble	Sensor Error
Error Code	0x0B, 0x13, 0x20 ~ 0x4F
Checking Points	1. Are CONNECTOR and cable connected properly ?(Refer to PWA Structure Fig) 2. Are middle connectors connected properly? 3. Is there any banknote or stuff on the path? 4. Is each SENSOR normal? (Refer Sensor Assignment)
Action	After clearing error, recheck normal operation.



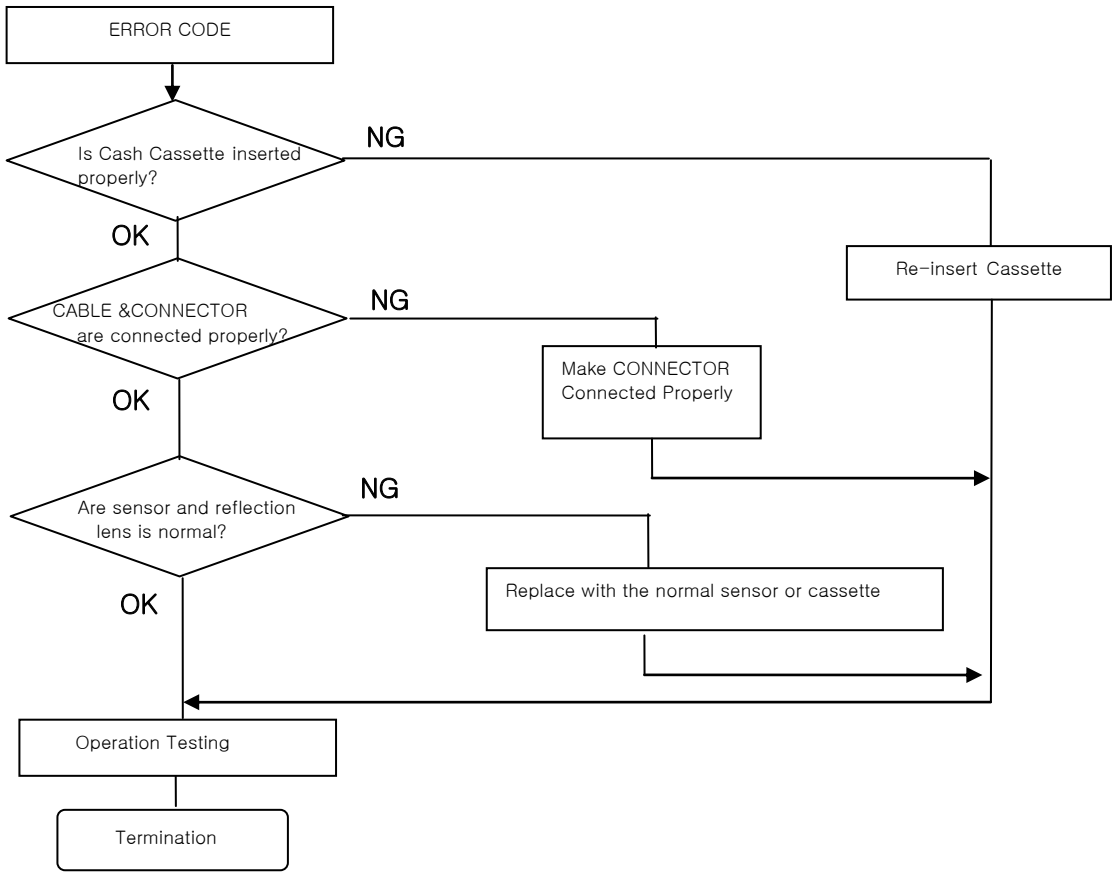
6.5 MOTOR SPEED SLOW

Trouble	Too Slow Motor Speed
Error Code	0x11
Checking Points	1. Is there any stuff at the power transmission? 2. Are WHEEL sensor CONNECTOR(J13) and CABLE connected properly? 3. Is WHEEL sensor normal? 4. Is WHEEL assembled properly? 5. Is there any stuff on PATH and CASH CASSETTE?
Action	After clearing error, recheck normal operation.



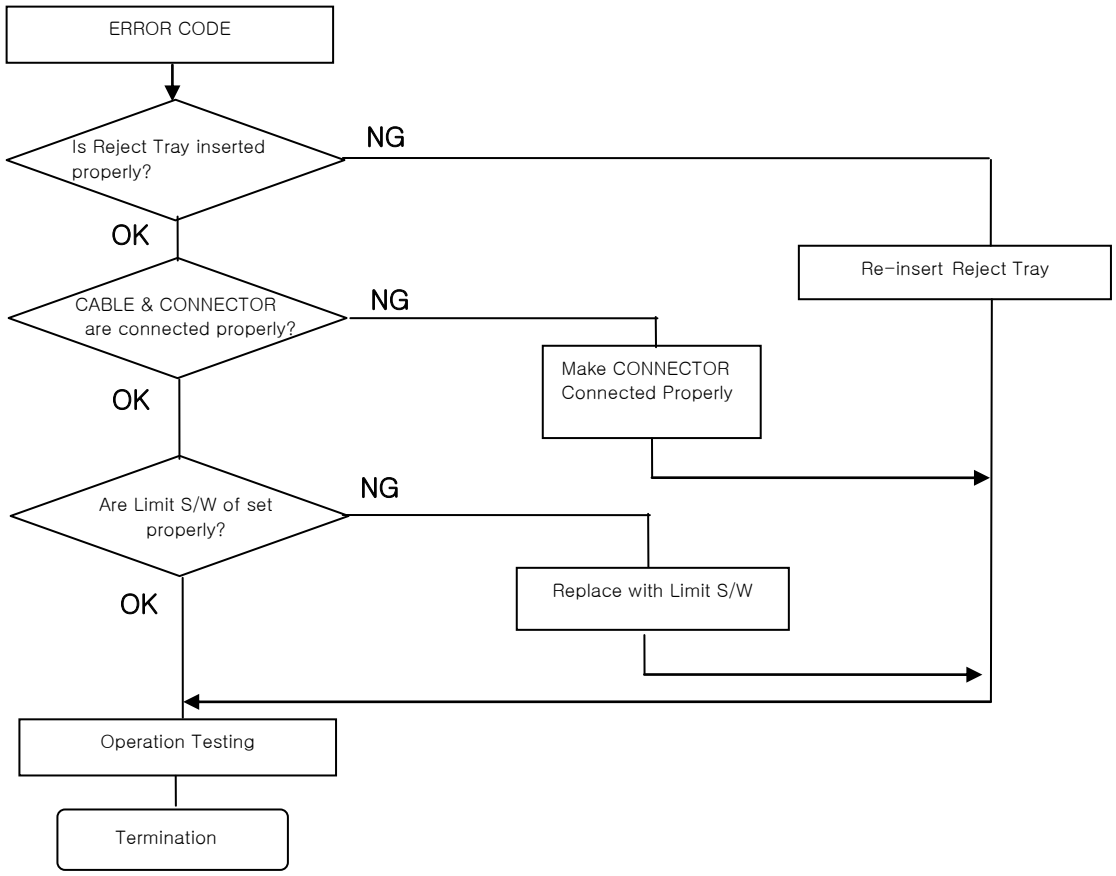
6.6 CASSETTE ERROR

Trouble	Not Detect Cash Cassette
Error Code	0x58, 0x59, 0x5A, 0x5B (No Detection of Cash Cassette)
Checking Points	1. Is Cash Cassette inserted properly? 2. Are Cash Cassette CONNECTOR and CABLE connected properly? (The 1st High : J14, The 2nd High : J15, The 3rd High : J16, The 4th high : J21) 3. Is sensor to detect insertion of normal? 4. Is Reflection lens of Cash Cassette normal?
Action	After clearing error, recheck normal operation.



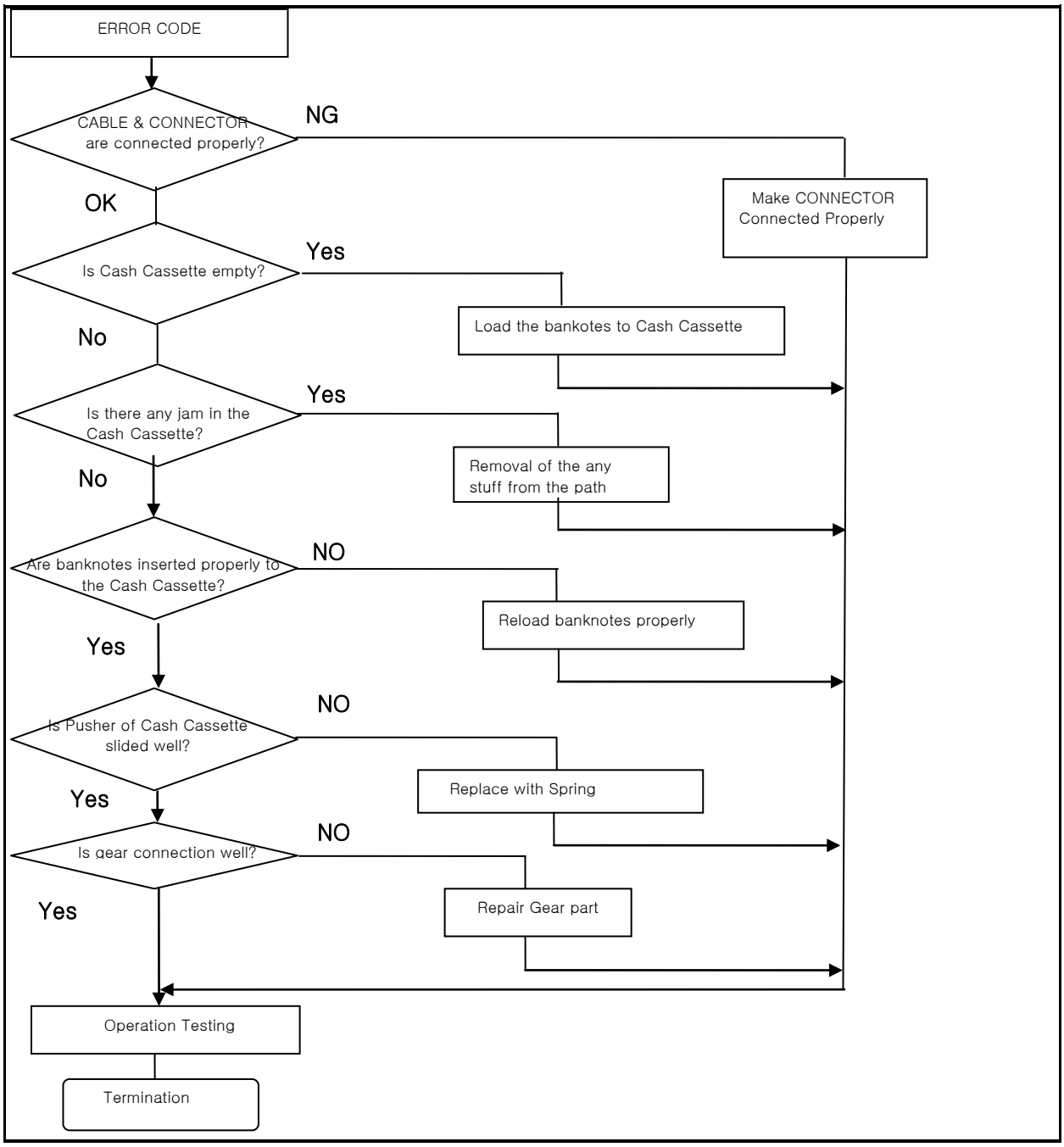
6.7 REJECT TRAY ERROR

Trouble	Not Detect Reject Tray
Error Code	0x12
Checking Points	1. Is Reject Tray inserted properly? 2. Are Reject Tray CONNECTOR(J13) and CABLE connected properly? 3. Is Limit S/W normal?
Action	After clearing error, recheck normal operation.



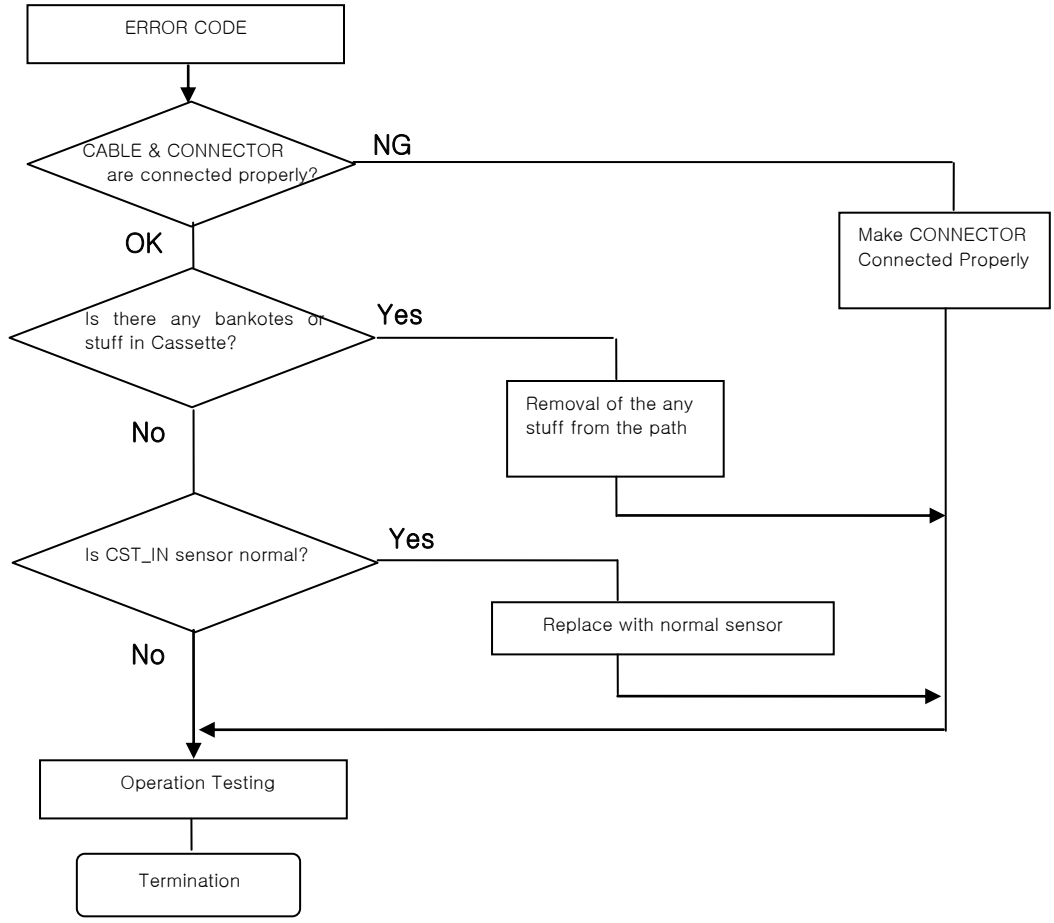
6.8 PICK-UP ERROR

Trouble	Abnormal Pickup Opertion in the Cash Cassette
Error Code	0x50, 0x51, 0x52, 0x53, 0x60, 0x61, 0x62, 0x63
Checking Points	1. Is Cash Cassette inserted properly? 2. Is Step Motor CONNECTOR connected properly? 3. (The 1st High :J6, The 2nd High:J7, The 3rd High : J19, The 4th High: J20) 4. Is there any jam in the Cash Cassette? 5. Are all the banknotes dispensed from Cash Cassette? 6. Are banknotes loaded properly into Cash Cassette? 7. Is Pusher in the Cash Cassette slided well? 8. Is Pickup gear connected properly?
Action	1. After Checking, Insert Cash Cassette into Main Body. 2. When all the notes are dispensed, NEAREND SENSOR should be checked.


ERROR CODE
CABLE & CONNECTOR are connected properly?
NG
Make CONNECTOR Connected Properly
OK
Is Cash Cassette empty?
Yes
Load the bankotes to Cash Cassette
No
Is there any jam in the Cash Cassette?
Yes
Removal of the any stuff from the path
No
Are banknotes inserted properly to the Cash Cassette?
NO
Reload banknotes properly
Yes
Is Pusher of Cash Cassette slided well?
NO
Replace with Spring
Yes
Is gear connection well?
NO
Repair Gear part
Yes
Operation Testing
Termination

6.9 CASSETTE JAM

Trouble	Detecting Banknotes on Pick-up Path of Cash Cassette
Error Code	0x54, 0x55, 0x56, 0x57
Checking Points	1. Are Cash Cassette CONNECTOR and CABLE connected properly? (The 1st High: J14, The 2nd : J15, The 3rd High : J16, The 4th High : J21) 2. Is there any stuff on PICKUP PATH of Cash Cassette? 3. Is CST_IN sensor normal?
Action	After clearing error, recheck normal operation.



6.10 OVER REJECT

Trouble	More than 20 Banknotes are rejected during transaction.
Error Code	0x0D
Checking Points	1. Is the bankotes loaded properly inside Cash Cassette? 2. Is Ultrasonic sensor normal? 3. Is Ultrasonic sensor connected properly? 4. Is CHK SENSOR normal? 5. Is the definition of bankotes like thickness and length set to the loaded notes? 6. Is StepMotor of Cash Cassette normal? 7. Is Oneway Roller of Cash Cassette operated normally?
Action	1. Check the parameter values using SEN DIAG command of TEST PROGRAM. 2. Check the operational status after testing.

6.11 DISPENSE LIMIT ERROR

Trouble	More than 50 Banknotes are dispensed as checking of CHK sensor
Error Code	0x0C
Checking Points	1. Is CHK sensor CONNECTOR and CABLE connected properly? 2. Is CHK sensor normal? 3. Is status of banknotes normal? (Check whether noise sounds by Hole with banknote)
Action	1. Check the operational status after testing.

6.12 OVER DISPENSE

Trouble	Actual quantites of banknotes dispensed are more than banknotes required to dispenser
Error Code	0x14
Checking Points	1. Is EXIT sensor CONNECTOR and CABLE connected properly? 2. Is EXIT sensor normal? 3. Is status of banknotes normal? (Check whether noise sounds by Hole with banknote) 4. Is operation of Diverter normal?
Action	1. Check the operational status after testing.

6.13 UNKNOWN DETECT ERROR

Trouble	Detecting banknotes from unrequired cassette to dispenser (not cassette required)
Error Code	0x80, 0x81, 0x82, 0x83
Checking Points	1. Is the bankotes loaded properly inside other Cash Cassettes? 2. Is CHK sensor and Path sensor of other Cash Cassettes normal? 3. Are GUIDE_CASH_FEED3_VCDM of each Cash Cassettes fixed properly?
Action	1. Check the operational status after testing

7 SPARE PART LIST

7.1 UNIT VCDM MECHA

NO	PART NO	DESCRIPTION	SPECIFICATION	V-1	V-2	V-3	V-4
1	B1104P0021	BELT	TIMMING 108XL (W : 6.4)	1	1	1	1
2	B1104P0113	BELT	TIMMING 114XL (W : 6.4)	1	1	1	1
3	B1104P0138	BELT	TIMMING S2M 184 (W : 6.0)	1	2	3	4
4	B1104P0139	BELT	TIMMING 100XL (W : 6.4)	1	1	1	1
5	B1104P0140	BELT	TIMMING 70XL (W : 6.4)	-	1	2	3
6	B1104P0141	BELT	TIMMING 74XL (W : 6.4)	1	1	1	1
7	B1104P0142	BELT	TIMMING B63MXL (W : 6.4)	1	1	1	1
8	B1104P0143	BELT	TIMMING B60MXL (W : 6.4)	1	2	3	4
9	B1104P0145	BELT	0-RING (DO : 7.0, DI : 1.5)	4	4	4	4
10	B1212P0409	CABLE	SONAR RCV VCDM	1	1	1	1
11	B1212P0410	CABLE	SONAR EMIT VCDM	1	1	1	1
12	B1212P0411	CABLE	TOP PCB SIDE VCDM	1	1	1	1
13	B1212P0412	CABLE	TOP VCDM	1	1	1	1
14	B1212P0428	CABLE	SWING SELECTOR VCDM	1	1	1	1
15	B1212P0414	CABLE	LIMIT S/W VCDM	1	1	1	1
16	B1212P0415	CABLE	WHEEL VCDM	1	1	1	1
17	B1212P0416	CABLE	FEED1 PCB SIDE VCDM	1	1	1	1
18	B1212P0417	CABLE	FEED1 VCDM	1	1	1	1
19	B1212P0418	CABLE	STEP MOTOR1 VCDM	1	1	1	1
20	B1212P0419	CABLE	FEED2 PCB SIDE VCDM	-	1	1	1
21	B1212P0420	CABLE	FEED2 VCDM	-	1	1	1
22	B1212P0421	CABLE	STEP MOTOR2 VCDM	-	1	1	1
23	B1212P0422	CABLE	FEED3 PCB SIDE VCDM	-	-	1	1
24	B1212P0423	CABLE	FEED3 VCDM	-	-	1	1
25	B1212P0424	CABLE	STEP MOTOR3 VCDM	-	-	1	1
26	B1212P0425	CABLE	FEED4 PCB SIDE VCDM				1
27	B1212P0426	CABLE	FEED4 VCDM				1
28	B1212P0427	CABLE	STEP MOTOR4 VCDM				1
29	B1604P0394	GUIDE	CASH FEED 3 VCDM	1	2	3	4
30	B1604P0474	GUIDE	CASH FEED 5 VCDM (NCR)	1	1	1	1
31	RPA000049H	PWA,ROHS	PWA VCDM-10N Serial MAIN V1.0	1	-	-	-
32	RPA000050C	PWA,ROHS	PWA VCDM-20N Serial MAIN V1.0	-	1	-	-
33	RPA000051C	PWA,ROHS	PWA VCDM-30N Serial MAIN V1.0	-	-	1	-
34	RPA000052C	PWA,ROHS	PWA VCDM-40N Serial MAIN V1.0	-	-	-	1
35	RPA000049B	PWA,ROHS	PWA CONNECT	2	3	4	5
36	RPA000049C	PWA,ROHS	PWA ULTRASONIC EMIT	1	1	1	1
37	RPA000049D	PWA,ROHS	PWA ULTRASONIC RCV	1	1	1	1
38	RPA000049E	PWA,ROHS	VCDM DIV EMIT	1	1	1	1
39	RPA000049F	PWA,ROHS	VCDM DIV RCV	1	1	1	1
40	B2817P0010	SENSOR	EMIT G-310	6	11	16	20
41	B2817P0011	SENSOR	RCV ST-310	6	11	16	20
42	B2203P0054	MOTOR	STP-43D2008	1	2	3	4
43	B2203P0070	MOTOR	BLDC DR-5238-018 SHINANO	1	1	1	1
44	B3001A0281	UNIT	CASH CASSETTE	1	2	3	4

7.2 UNIT CASH CASSETTE

NO	PART NO	DESCRIPTION	SPECIFICATION	Q'TY
1	B1104P0136	BELT	TIMMING S2M 92 (W : 3.0)	1
2	B1104P0137	BELT	TIMMING S2M 134 (W : 3.0)	1
3	B2803A0820	SHAFT ASSY	FEED VCDM	1
4	B1108P1111	BRACKET	SEPARATE PLATE	1
5	B2803A0821	SHAFT ASSY	PICKUP VCDM	2