

HV-G series HW-G series

TECHNICAL INFORMATION

HV-15KGL HV-15KGV
HV-60KGL HV-60KGV
HV-200KGL HV-200KGV

HW-10KGL HW-10KGV
HW-60KGL HW-60KGV
HW-100KGL HW-100KGV
HW-200KGL HW-200KGV

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1. Introduction



1.1. The Compositions of Products

This manual describes each composition of the mechanical units, electronic units and software for the HV-G series and HW-G series. These products has common units and parts as the following table.

Type	Name	Base Unit	Indicator Unit and Circuit Board
Type L HV series	HV-15KGL	QD-AS3-000786H	Indicator Unit
	HV-60KGL	QD-AS3-000787E	
	HV-200KGL	QD-AS3-000788E	
Type L HW series	HW-10KGL	QD-AS3-000786H	Main board Power board RS-232C board
	HW-60KGL	QD-AS3-000787E	
	HW-100KGL	QD-AS3-000788E	
	HW-200KGL	QD-AS3-000788E	
Type V HV series	HV-15KGV	QD-AS3-000786H	Indicator Unit
	HV-60KGV	QD-AS3-000787E	
	HV-200KGV	QD-AS3-000788E	
Type V HW series	HW-10KGV	QD-AS3-000786H	Main board Power relay board RS-232C board
	HW-60KGV	QD-AS3-000787E	
	HW-100KGV	QD-AS3-000788E	
	HW-200KGV	QD-AS3-000788E	

Type	Indicator Unit	Circuit Board	
		Name	No.
Type L HV series HW series	QD-AS2-000206B	Main board	QD-EC3-000567B
			7PZ:3413
		Power board	QD-EC3-000567B
			7PZ:3418
		RS-232C board	QD-EC4-000193
			7PZ:3416
Type V HV series HW series	QD-AS2-000205B	Main board	QD-EC3-000568B
			7PZ:3414
		Power relay board	QD-EC4-000192
			7PZ:3415
		RS-232C board	QD-EC4-000193
			7PZ:3416

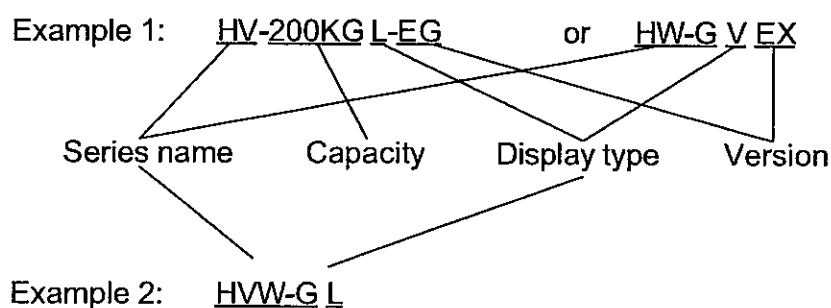
1.1.1.Options

Name	Description	Circuit Boards and Units
OP-03	RS-232C and relay output	QD-EC4-000201
		7PZ:3458
OP-04	RS-422/485 and relay output	QD-EC4-000599
		7PZ:3459
OP-06	Built-in printer	
		7PZ:3417 and Thermal Printer

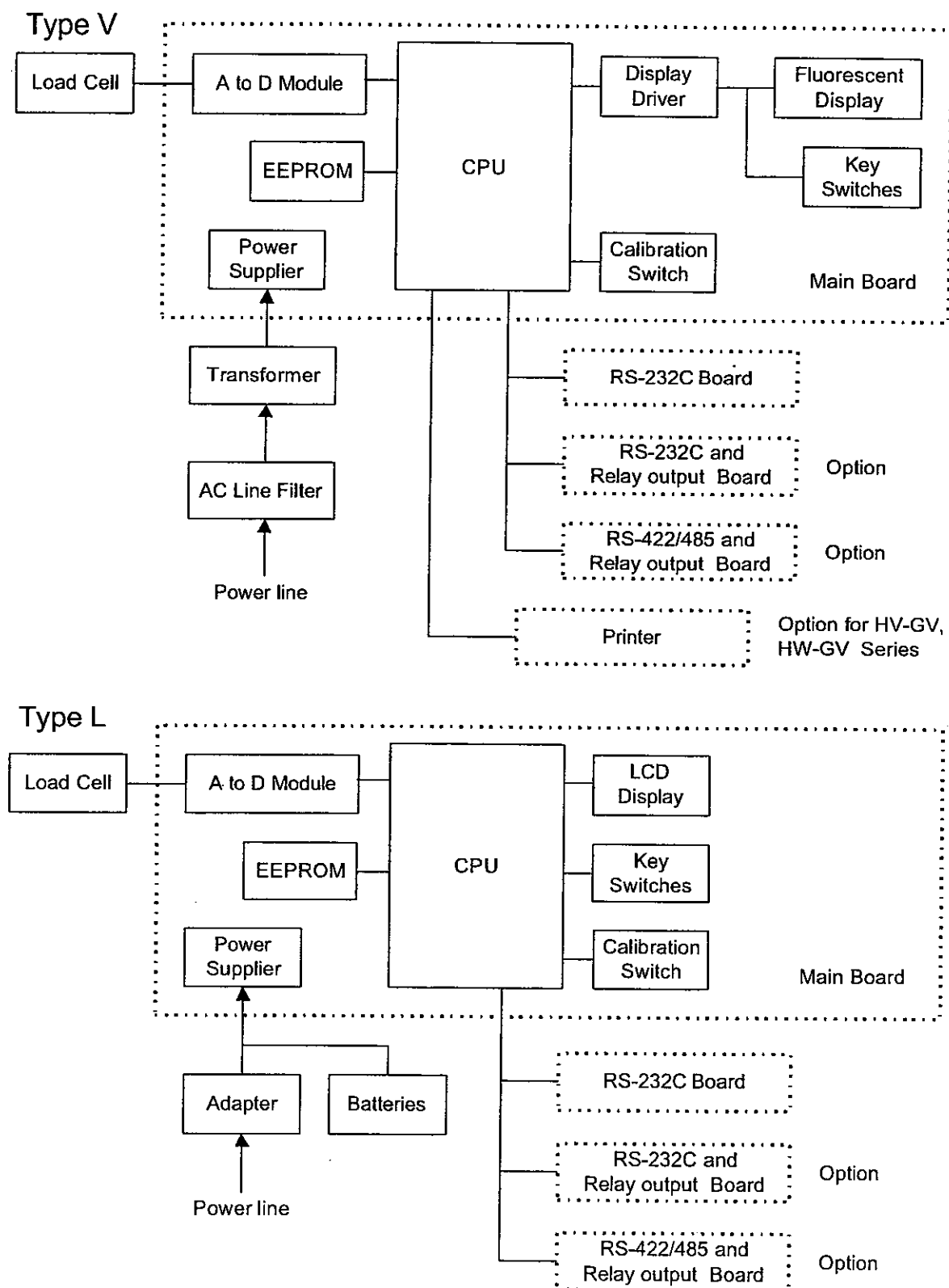
1.1.2.Product Classification and Name

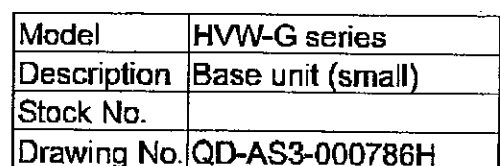
Products are classified by the following elements.

Element	Symblos	Meanings
Series name	HV, HW	HV-G series, HW-G series
Capacity	10KG, 15KG, 60KG, 100KG, 200KG	HV series : 15kg, 60kg, 200kg
		HW series : 10kg, 60kg, 100kg, 200kg
Display type	Type V (HV-GV, HW-GV)	Fluorescent display,
	Type L (HV-GL, HW-GL)	LCD (Liquid crystal display)
Version	-EG:	Non-metric version
	-EX:	Metric version



1.1.3. Block Diagram





2.1.1. Parts List of Base Unit (Small)

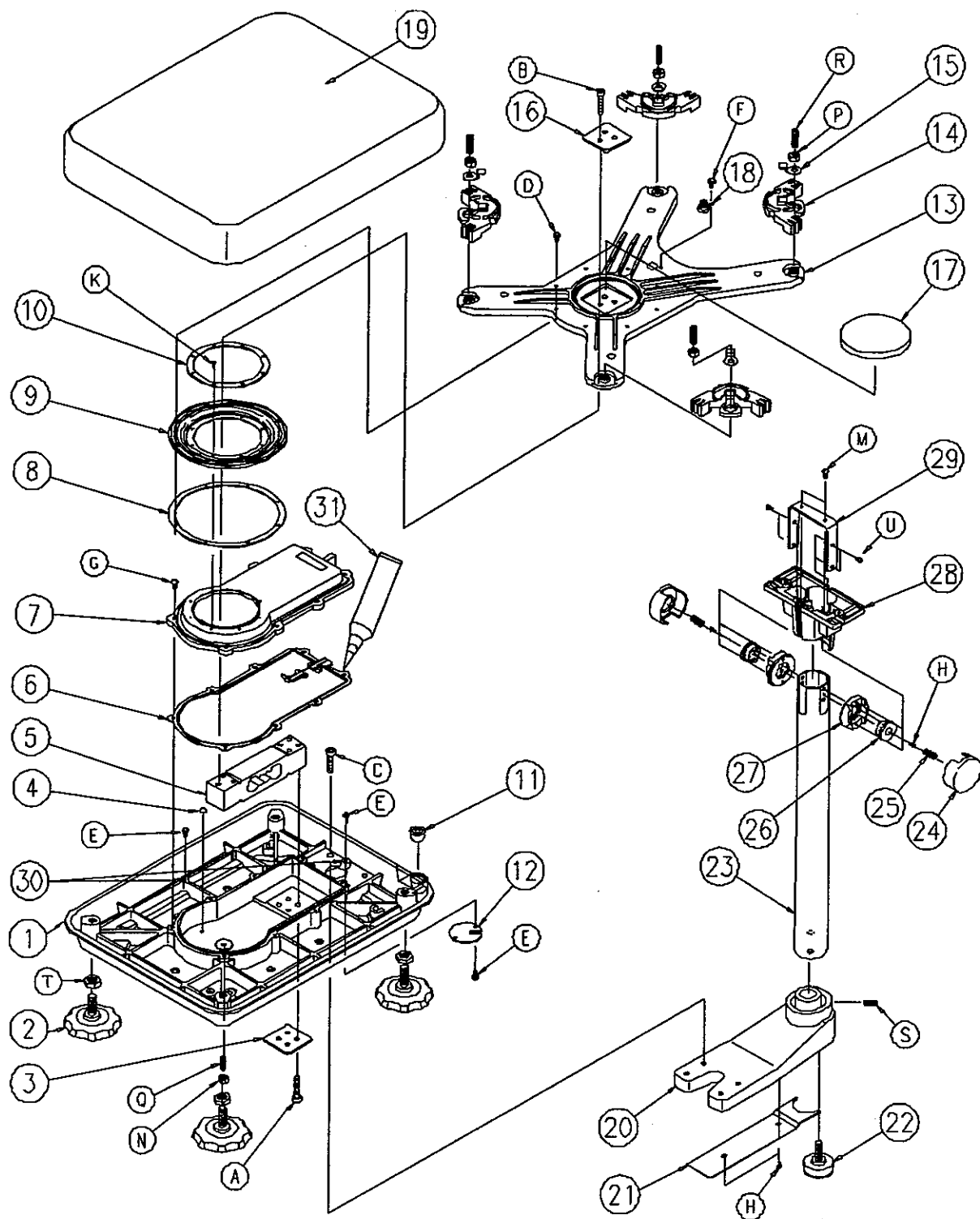
No.	Part Name	Part No.	Qty
1	Center Pad	07:4006723	1
2	Center Pad	07:3003002	4
3	Rubber fixer	04:4007427	4
4	Diaphragm	06:3003043	1
5	Ring A	04:3003044	1
6	Ring B	04:3003045	1
7	Bubble spirit level	10:MR16	1
8	Earth spring	15:4007471	1
9	Pan support (S)	03:2000403	1
10	Gasket (S)	06:2000404A	1
11	Lad angle	04:3003047	1
12	Fixed plate A	04:4006924	1
13	Fixed plate B	04:4006925	1
14	Leaf spring	15:4006926A	1
15	L.C.cover (S)	07:1000090A	1
16	L.C.plate (S)	04:4006927A	1
17	Stopper plate	04:4007031B	1

No.	Part Name	Part No.	Qty
18	Leveling foot	07:B49929	4
19	Base (S)	07:1000089A	1
20	Under cover	04:3003049	1
21	No use		
22	Cable tie	10:C150	2
23	Cap	07:A46050-2	2
24	Handle stopper-1	03:C43481	2
25	Handle stopper-2	03:C43482	2
26	Spring	05:A46051	2
27	Rock spring	05:A47309B	1
28	Pole blanket	07:A21456A	1
29	Pole base (S)	04:3003118B	1
30	Leveling foot	07:4007441	1
31	Pan (S)	04:3003048B	1
32	Loadcell	LC:126-15K	1
33	Liquid gasket 1207C		
34	Ground plate	04:4008092	1

No.	Part Name	Qty
A	Allen head screw M4x15, Nickerled	2
B	Allen head screw M5x10, Nickerled	8
C	Allen head screw M5x15, Nickerled	4
D	Allen head screw M5x15, Stainless steel	4
E	Allen head screw M6x25, Nickerled	2
F	Allen continuous-thread stud M8x25, Stainless steel	4
G	Nut M4, Stainless steel	2
H	Nut M8, Stainless steel	4
K	Pan head screw with spring and plain washer M3x8, Stainless steel	2
L	Pan head screw with spring and plain washer M4x8, Stainless steel	1
M	Pan head screw with spring and plain washer M4x8, Stainless steel	4
N	Pan head screw M3x10, Stainless steel	8
P	Tapping screw M3x8, Nickerled	9
Q	Tapping screw M3x8, Stainless steel	4
R	Tapping screw M4x10, Stainless steel	8
S	Nut M8, Stainless steel	4



2.2. Base Unit (Middle)



Model	HVW-G series
Description	Base unit (Middle)
Stock No.	
Drawing No.	QD-AS3-000787E

2.2.1. Parts List of Base Unit (Middle)

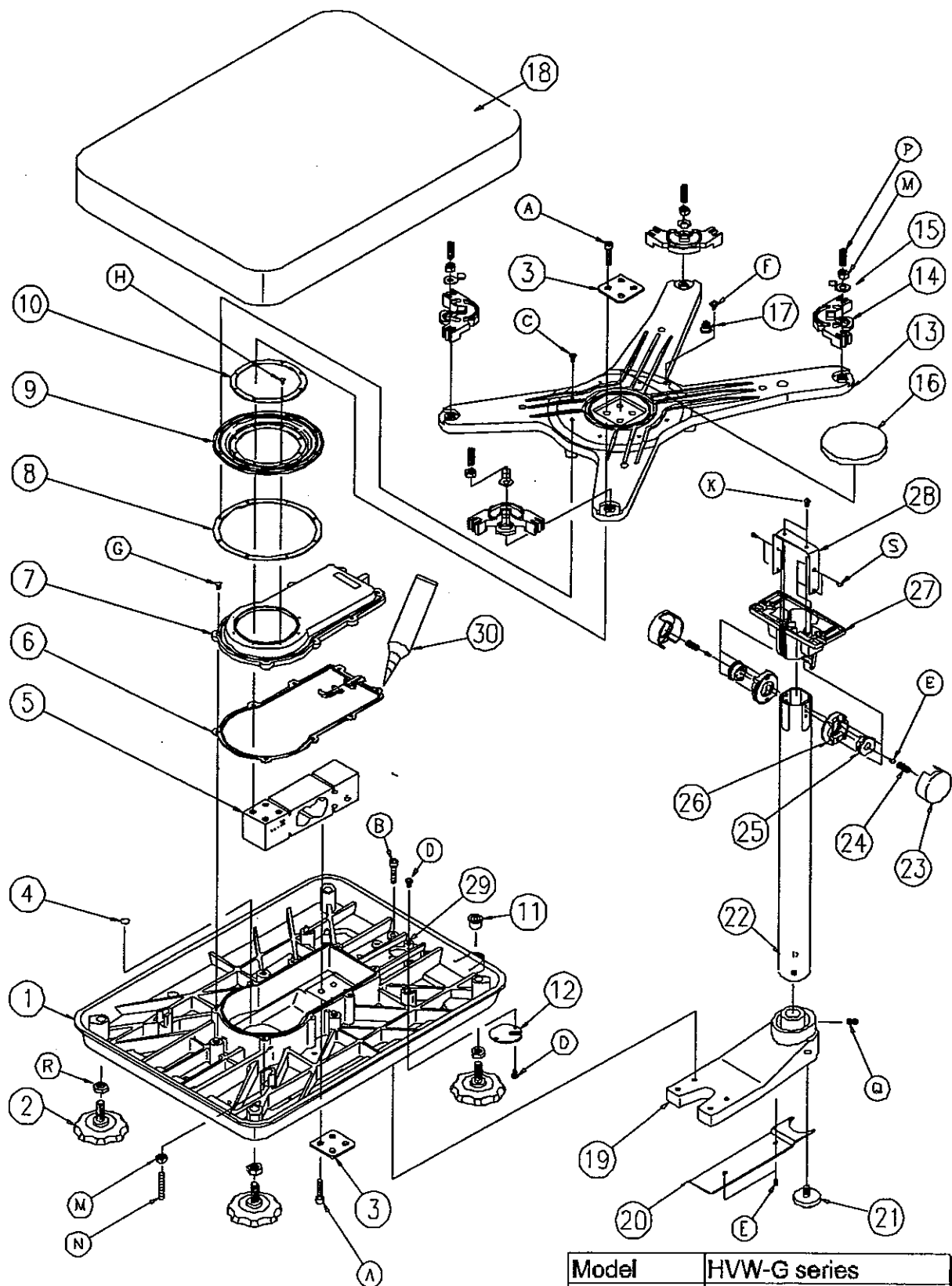
No.	Part Name	Part No.	Qty
1	Base (M)	03:1000078A	1
2	Leveling foot	07:B49929	4
3	L.C.plate (M)	04:4006923	1
4	Vent filter	10:VFM12300	1
5	Ladcell	LC:127-60K	1
6	Gasket	06:2000400A	1
7	L.C.cover	07:1000082A	1
8	Ring A	04:3003044	1
9	Diaphragm	06:3003043	1
10	Ring B	04:3003045	1
11	Bubble spirit level	10:MR16	1
12	Cable clamp	04:4007030	1
13	Pan support (M)	03:1000079A	1
14	Corner pad	07:3003002	4
15	Rubber fixer	04:4007427	4
16	Plate (M)	04:4006922	1

No.	Part Name	Part No.	Qty
17	Center pad	07:4006723	1
18	Earth spring	15:4007471	1
19	Pan (M)	04:3003046B	1
20	Pole base	03:1000077	1
21	Cover	07:4007073	1
22	Leveling foot	07:4007441	1
23	Pole	04:3003108	1
24	Cap	07:A46050-2	2
25	Spring	05:A46051	2
26	Handle stopper-2	03:C43482	2
27	Handle stopper-1	03:C43481	2
28	Pole blanket	07:A21456A	1
29	Rock spring	05:A47309B	1
30	Cable tie	10:C150	2
31	Liquid gasket 1207C		

No.	Part Name	Qty
A	Allen head screw M4x15, Nickeled	4
B	Allen head screw M5x10, Nickeled	3
C	Allen head screw M5x15, Nickeled	4
D	Pan head screw M3x12, Stainless steel	8
E	Pan head screw M4x8, Stainless steel	4
F	Pan head screw with spring and plain washer M4x8, Stainless steel	1
G	Pan head screw with spring and plain washer M4x12, Stainless steel	8
H	Pan head screw with spring and plain washer M3x8, Stainless steel	4
K	Tapping screw M3x8, Nickeled	8
M	Tapping screw M4x10, Stainless steel	2
N	Nut M6, Stainless steel	1
P	Nut M8, Stainless steel	4
Q	Allen continuous-thread stud M6x15, Stainless steel	1
R	Allen continuous-thread stud M8x25, Stainless steel	4
S	Allen continuous-thread stud M6x10, Stainless steel	2
T	Nut M10, Stainless steel	4
U	Pan head screw with spring and plain washer M4x8, Stainless steel	4



2.3. Base Unit (Large)



Model	HVW-G series
Description	Base unit (Large)
Stock No.	
Drawing No.	QD-AS3-000788E

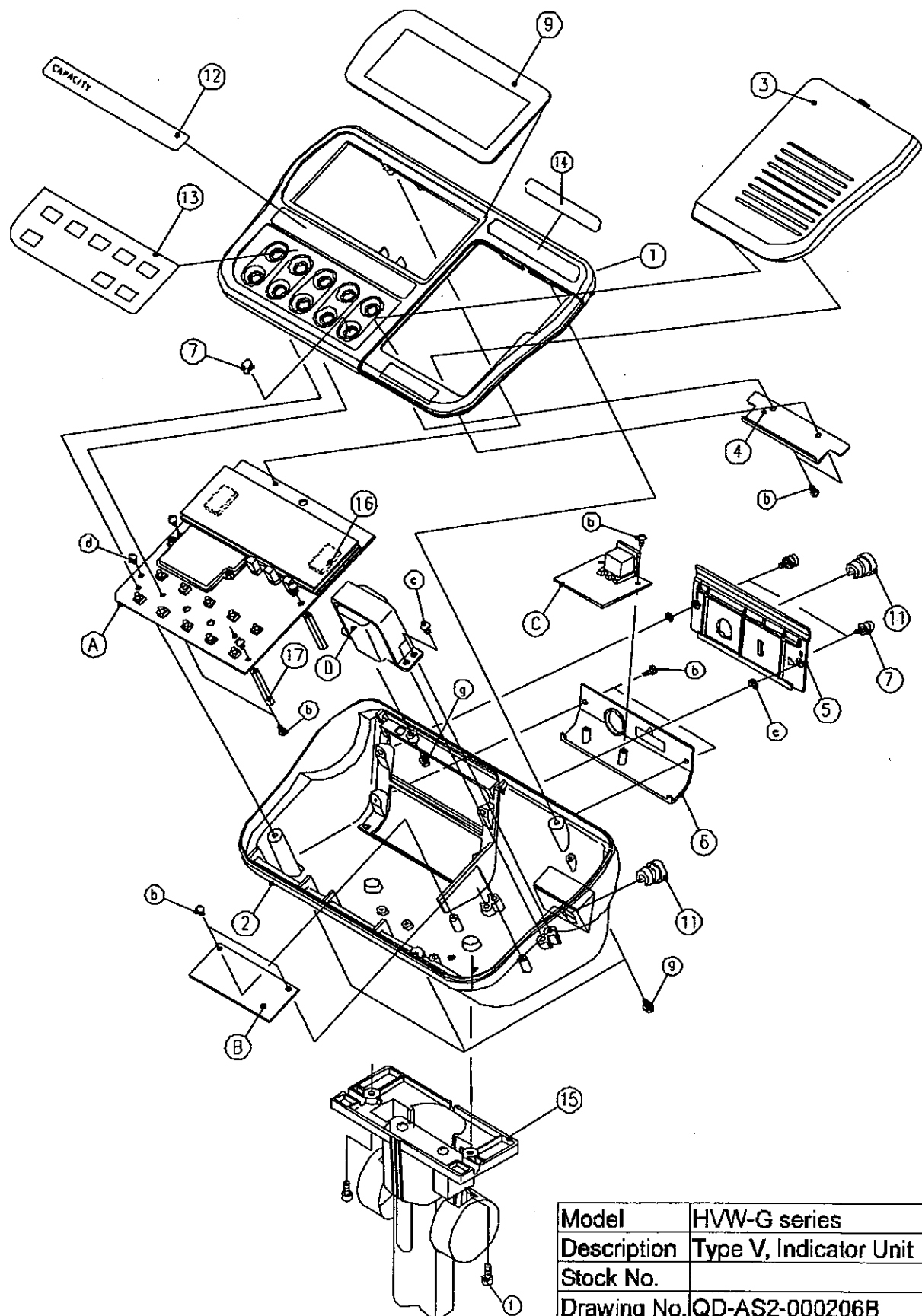
2.3.1. Parts List of Base Unit (Large)

No.	Part Name	Part No.	Q'ty
1	Base (L)	03:1000085	1
2	Leveling foot	07:B49929	4
3	Plate (L)	04:4007029	2
4	Vent filter	10:VFM12300	1
5	100kg Ladc cell	LC:128-100K	1
5	200kg Ladc cell	LC:128-220K	1
6	Gasket (M)	06:2000400A	1
7	L.C.cover (M)	07:1000082A	1
8	Ring A	04:3003044	1
9	Diaphragm	06:3003043	1
10	Ring B	04:3003045	1
11	Bubble spirit level	10:MR16	1
12	Cable clamp	04:4007030	1
13	Pan support (L)	03:1000086	1
14	Corner pad	07:3003002	4
15	Rubber fixer	04:4007427	4

No.	Part Name	Part No.	Q'ty
16	Center pad	07:4006723	1
17	Earth spring	15:4007471	1
18	Pan (L)	04:3003087B	1
19	Pole base	03:1000077	1
20	Cover	07:4007073	1
21	Leveling foot	07:4007441	1
22	Pole	04:3003108	1
23	Cap	07:A46050-2	2
24	Spring	05:A46051	2
25	Handle stopper-2	03:C43482	2
26	Handle stopper-1	03:C43481	2
27	Pole blanket	07:A21456A	1
28	Rock spring	05:A47309B	1
29	Cable tie	10:C150	2
30	Liquid gasket 1207C		

No.	Part Name	Q'ty
A	Allen head screw M8x40, Nickered	8
B	Allen head screw M6x15, Stainless steel	4
C	Pan head screw M3x20, Stainless steel	8
D	Pan head screw M4x8, Stainless steel	3
E	Pan head screw with spring and plain washer M3x8, Stainless steel	4
F	Pan head screw with spring and plain washer M4x8, Stainless steel	1
G	Pan head screw with spring and plain washer M4x12, Stainless steel	8
H	Tapping screw M3x8, Nickered	8
K	Tapping screw M4x10, Stainless steel	2
M	Nut M8, Stainless steel	5
N	Allen continuous-thread stud M8x25, Stainless steel	1
P	Allen continuous-thread stud M8x50, Stainless steel	4
Q	Allen continuous-thread stud M6x10, Stainless steel	2
R	Nut M10, Stainless steel	4
S	Pan head screw with spring and plain washer M4x8, Stainless steel	4

2.4. Type V Indicator Unit



Model	HVW-G series
Description	Type V, Indicator Unit
Stock No.	
Drawing No.	QD-AS2-000206B

2.4.1. Parts List of Type V Indicator Unit

No.	Part Name	Part No.	Qty
1	Upper case	07:1000097	1
2	Lower case	07:1000098	1
3	Battery cover	07:2000417	1
4	Cover stopper	04:4007230	1
5	Rear cover	07:3003186	1
6	Connector cover	07:3003184	1
7	key top	07:4007221	8
8	Lock screw	05:A42208	2
9	Display filter #1		1
10	Connector cover	07:3003184	1
11	Cable clamp	ET:SR-6P-4	1
12	Capacity label #1		1
13	Key sheet #1		1
14	Model label #1		1
15	Pole blanket	07:A21456A	1
16	LCD pillow	06:4005274	2
17	Spacer	05:A44614	4

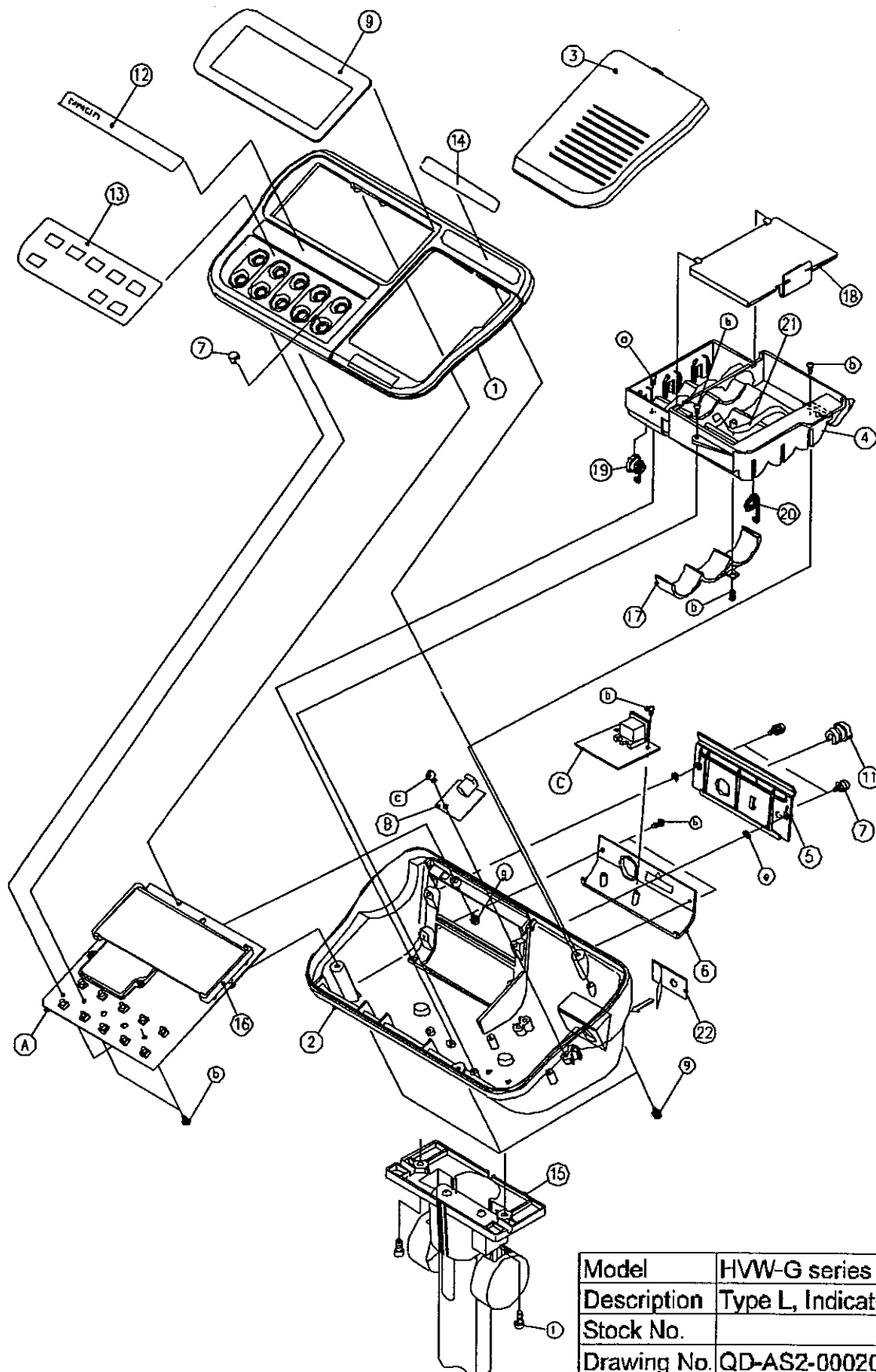
#1 : Refer to the section " 2.6 Discriminate Parts List".

No.	Part Name	Part No.	Qty
A	Main board	7PZ:3414	1
B	Power relay board	7PZ:3415	1
C	RS-232C board	7PZ:3416	1
D	Transformer		1

No.	Part Name	Qty
a	no use	
b	Tapping screw M3x8, Nickerled	8
c	Tapping screw M3x8, Nickerled	4
d	Pan head screw with plain washer M3x8, Nickerled	4
e	E-Ring M2.6, Nickerled	2
f	Pan head screw with plain washer M4x8, Nickerled	2
g	Pan head screw with plain washer M3x12, Nickerled	4



2.5. Type L Indicator Unit



Model	HVW-G series
Description	Type L, Indicator Unit
Stock No.	
Drawing No.	QD-AS2-000206B

2.5.1. Parts List of Type L Indicator Unit

No.	Part Name	Part No.	Q'ty
1	Upper case	07:1000097	1
2	Lower case	07:1000098	1
3	Battery cover	07:2000417	1
4	Battery case	07:1000099	1
5	Rear cover	07:3003186	1
6	Connector cover	07:3003184	1
7	key top	07:4007221	8
8	Lock screw	05:A42208	2
9	Display filter #1		1
10	Connector cover	07:3003184	1
11	Cable clamp	ET:SR-6P-4	1
12	Capacity lable #1		1
13	Key sheet #1		1
14	Model lable #1		1
15	Pole blanket	07:A21456A	1
16	LCD pillow	06:4005274	2
17	Battery guide	07:3003238	1
18	Battery holder	07:3003185	1
19	Electrode spring (-)	15:4007225	3
20	Electrode spring (+)	15:4007226	3
21	Ribbon	00:4007568	1
22	Adapter label	08:4007461	1

#1 : Refer to the section " 2.6 Discriminate Parts List".

No.	Part Name	Part No.	Q'ty
A	Main board	7PZ:3413	1
B	Power relay board	7PZ:3418	1
C	RS-232C board	7PZ:3416	1

No.	Part Name	Q'ty
a	Tapping screw M3x6, Nicleled	1
b	Tapping screw M3x8, Nicleled	9
c	Tapping screw M4x8, Nicleled	1
d	Pan head screw with plain washer M3x8, Nicleled	4
e	E-Ring M2.6, Nicleled	2
f	Pan head screw with plain washer M4x8, Nicleled	2
g	Pan head screw with washer M3x12, Nicleled	4



2.6. Discriminate Parts List

Parts Name	Products and Classification	Parts No.
Key sheet	HW-GV	08:4007464
	HW-GL	08:4007465
	HV-GV	08:4007462
	HV-GL	08:4007463

Parts Name	Products and Classification	Parts No.
Display Filter	HW-GV	07:4007222
	HW-GL	07:4007223
	HV-15KGV-EX	07:4007480-1
	HV-60KGV-EX	07:4007480-2
	HV-200KGV-EX	07:4007480-3
	HV-GV-EG	07:4007480-4
	HV-15KGL-EX	07:4007481-1
	HV-60KGL-EX	07:4007481-2
	HV-200KGL-EX	07:4007481-3
	HV-GL-EG	07:4007481-4

Parts Name	Products and Classification	Parts No.
Model label	HV-15KGV	08:4007456-1
	HV-60KGV	08:4007456-2
	HV-200KGV	08:4007456-3
	HV-15KGL	08:4007456-4
	HV-60KGL	08:4007456-5
	HV-200KGL	08:4007456-6
	HW-10KGV	08:4007456-7
	HW-60KGV	08:4007456-8
	HW-100KGV	08:4007456-9
	HW-200KGV	08:4007456-10
	HW-10KGL	08:4007456-11
	HW-60KGL	08:4007456-12
	HW-100KGL	08:4007456-13
	HW-200KGL	08:4007456-14

Reference

Classification symbols	Meanings
Type V (HV-GV, HW-GV)	Fluorescent display,
Type L (HV-GL, HW-GL)	LCD (Liquid crystal display)
-EG	Non-metric version
-EX	Metric version

Parts Name	Products and Classification	Parts No.
Capacity label	HV-15KG-EX	3003337-1
	HV-60KG-EX	3003337-2
	HV-200KG-EX	3003337-3
	HW-10KG-EX	3003337-4
	HW-60KG-EX	3003337-5
	HW-100KG-EX	3003337-6
	HW-200KG-EX	3003337-7
	HV-15KG-EG	3003337-8
	HV-60KG-EG	3003337-9
	HV-200KG-EG	3003337-10
	HW-10KG-EG	3003337-11
	HW-60KG-EG	3003337-12
	HW-100KG-EG	3003337-13
	HW-200KG-EG	3003337-14

Parts Name	Products and Classification	Parts No.
Rating label		4007458-1
		4007458-2
		4007537

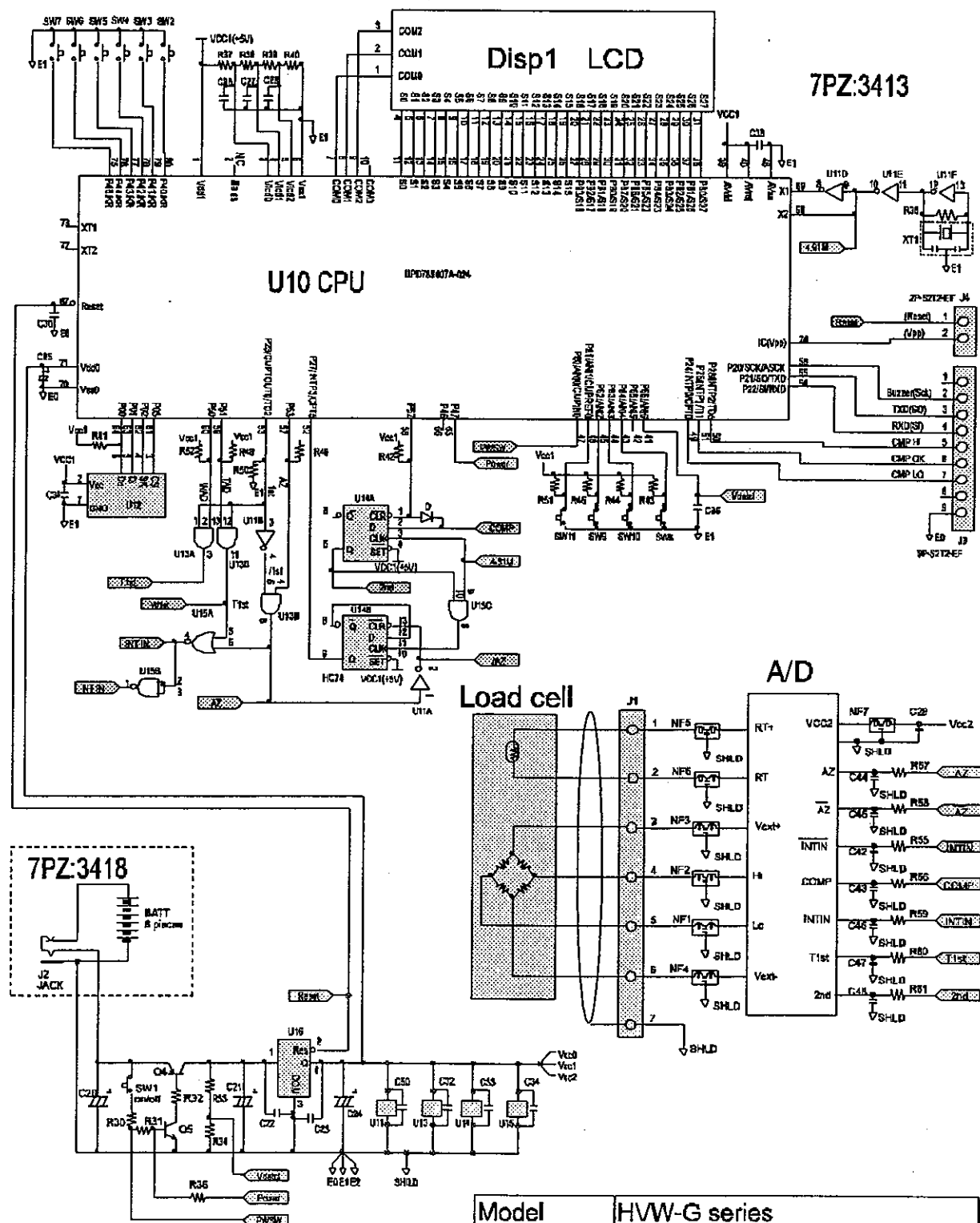
Parts Name	Products and Classification	Parts No.
Serial label	Type V	4007459-4
	Type L	4007459-3



3. Circuit Diagrams



3.1. Type L Main Board, 7PZ:3413 (and 7PZ:3418)



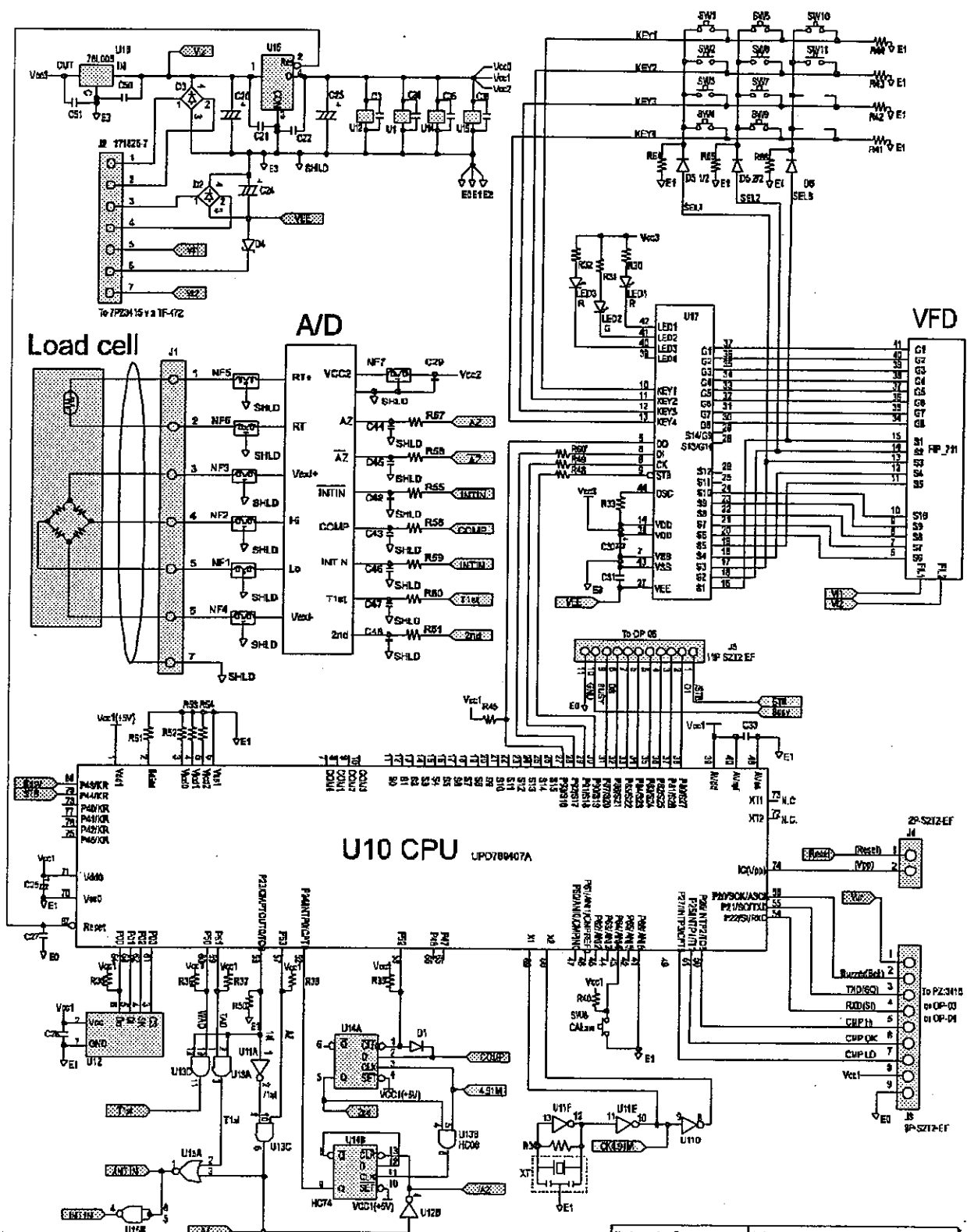
Model	HW-G series
Description	Type L Main board/Power board
Stock No.	7PZ:3413/7PZ:3418
Drawing No.	QD-EC3-000567C

3.1.1.Parts List of 7PZ:3413 (and 7PZ:3418)

Symbols	Part No.	Part Name	Q'ty
	04:4006941	Shield case A	1
	04:4006942	Shield case B	1
	07: 4007224	LCD holder	2
C35	CC:0.001U-C	Ceramic capacitor	1
C22,23,26,27,28,29,30,31,32,33,34,36,50	CC:0.1U25V-C	Ceramic capacitor	13
C42,43,44,45,46,47,48	CC:100P-C	Ceramic capacitor	7
C24	CK:SME16VB10	Aluminum electrolytic capacitor	1
C21	CK:SME16VB33	Aluminum electrolytic capacitor	1
C20	CK:SME25VB330	Aluminum electrolytic capacitor	1
C25	CT:1C2R2-C	Tantalum capacitor	1
D1	DI:1SS321-C	Shottky diode	1
LCD	ED:HT4096A-TRP1	Liquid Crystal Display	1
J3	JI:09P-S2T2-EF	Connector	1
J4	JI:2P-S2T2-EF	Connector	1
J1	JI:7P-S2T2-EF	Connector	1
NF5, 6	NF:EXCET101U	EMC Filter	2
NF1,2,3,4,7	NF:EXCEET102U	EMC Filter	5
	PC:3413A	PCB	1
Q4	QT:A1314B-C	Transistor	1
Q5	QT:C2712Y-C	Transistor	1
R55,56,57,58,59,60,61	RC:1/10W101J	Carbon resister	7
R50	RC:1/10W103J	Carbon resister	1
R32,35	RC:1/10W183J	Carbon resister	2
R31,38,39,40	RC:1/10W223J	Carbon resister	4
R36	RC:1/10W225J	Carbon resister	1
R30,37	RC:1/10W333J	Carbon resister	2
R34,41,42,43,44,45,48,49,51,52	RC:1/10W473J	Carbon resister	10
R33	RC:1/10W563J	Carbon resister	1
S1,2,3,4,5,6,7,8,9	SK:EVQ-QS307K	Key switch	9
U10	UC:D78F9418GC	CPU	1
U15	UC:HC02F	HC-NOR	1
U13	UC:HC08F	HC-AND	1
U14	UC:HC74F	HC-D F/F	1
U11	UC:HCU04F	HC-NOT(U)	1
U12	UC:S-2914AIF10	EEPROM	1
U16	UR:C2255H	5V regulator	1
XT1	XT:KBR4.91MKSTF	4.91MHz	1
J2 on 7PZ:3418A	EJ: 0470-01-230	DC JACK	1
	15:3003185	Battery terminal spring -	3
	15:3003185	Battery terminal spring +	3



3.2. Type V Main Board, 7PZ:3414



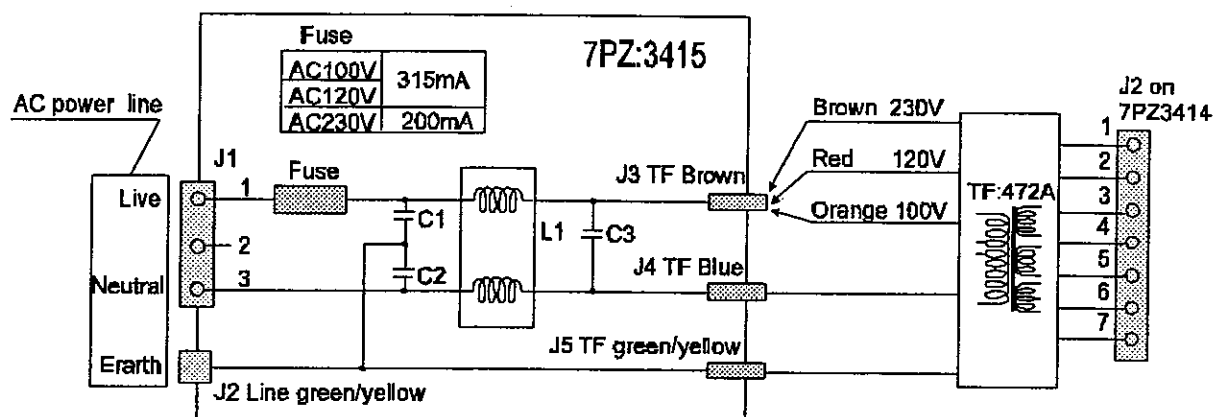
Model	HW-G series
Description	Type V Main board
Stock No.	7PZ:3414
Drawing No.	QD-EC3-000568C

3.2.1.Parts List of 7PZ:3414

Symbols	Part No.	Part Name	Q'ty
	04:4006941	Shield case A	1
	04:4006942	Shield case B	1
	06:B42081A	VFD Pillow	2
C31	CC:0.001U-C	Ceramic capacitor	1
C21,22,27,28,29,32,33,34,35,36,50,51	CC:0.1U25V-C	Ceramic capacitor	12
C42,43,44,45,46,47,48	CC:100P-C	Ceramic capacitor	7
C20	CK:SME16VB1000	Aluminum electrolytic capacitor	1
C23	CK:SME16VB33	Aluminum electrolytic capacitor	1
C24	CK:SME63VB100	Aluminum electrolytic capacitor	1
C25,30	CT:1C2R2-C	Tantalum capacitor	2
	DA:LM-4	LED spacer 4MM	3
D2,3	DI:1B4B42	Diode	2
D5,6	DI:1SS272-C	Diode	2
D1	DI:1SS321-C	Shottky diode	1
LED2	DL:PG5553KY	LED	1
D4	DZ:05Z6.8	Zener diode	2
VFD	ED:CL1773G	Fluorescent display tube (VFD)	1
LED1, 3	ED:DL:GL8HD22	LED	2
J3	JI:09P-S2T2-EF	Connector	1
J5	JI:11P-S2T2-EF	Connector	1
J2	JI:171825-7	Connector	1
J4	JI:2P-S2T2-EF	Connector	1
J1	JI:7P-S2T2-EF	Connector	1
NF5, 6	NF:EXCCET101U	EMC Filter	2
NF1,2,3,4,7	NF:EXCEET102U	EMC Filter	5
	PC:3414B	PCB	1
R55,56,57,58,59,60,61	RC:1/10W101J	Carbon resister	7
R40,41,42,43,44,45,48,49,50,50'	RC:1/10W103J	Carbon resister	10
R34	RC:1/10W225J	Carbon resister	1
R30,31,32	RC:1/10W331J	Carbon resister	3
R35,36,37,38,39,64,65,66	RC:1/10W473J	Carbon resister	8
R33	RC:1/10W563J	Carbon resister	1
S1,2,3,4,5,6,7,8,9	SK:EVQ-QS307K	Key switch	9
U17	UC:D16312GB-3B4	Display driver	1
U10	UC:D78F9418GC	CPU	1
U15	UC:HC02F	HC-NOR	1
U13	UC:HC08F	HC-AND	1
U14	UC:HC74F	HC-D F/F	1
U11	UC:HCU04F	HC-NOT(U)	1
U12	UC:S-2914AIF10	EEPROM	1
U16	UR:C2255H	5V regulator	1
U18	UR:TA78L005AP	5V regulator	1
XT1	XT:KBR4.91MKSTF	4.91MHz	1



3.3. Power Relay Board, 7PZ:3415



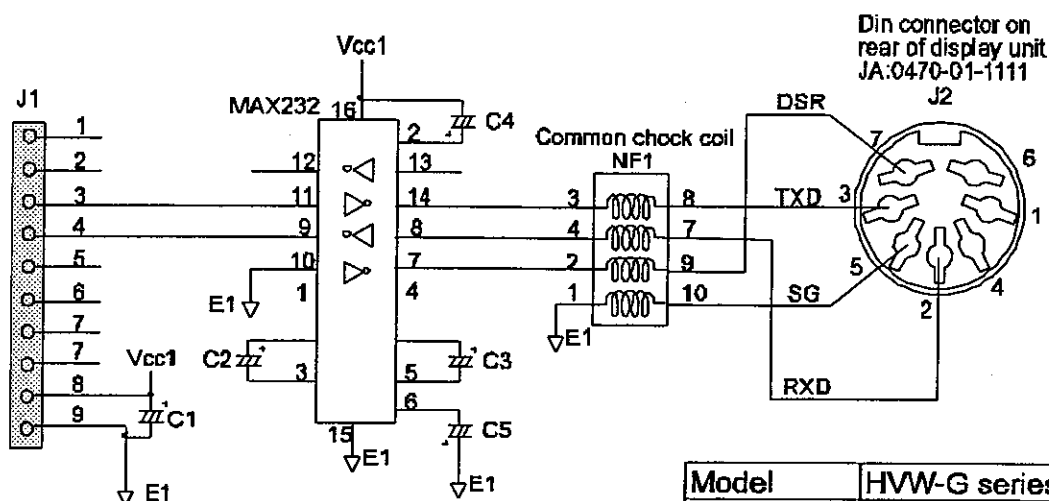
Model	HVW-G series
Description	Power relay board
Stock No.	7PZ:3415
Drawing No.	QD-EC4-000192

3.3.1.Parts List of 7PZ:3415

Symbols	Part No.	Part Name	Q'ty
	FS:EAWK-315MA	Fuse for AC100V/120V Line	1
	FS:EAWK-200MA	Fuse for AC230V Line	1
FH1,2	FH:85PN0819	Fuse holder	2
L1	LL:SU9H-05020	Common chock coil	1
C3	CM:E2A104MW	Film capacitor	1
C1,2	CC:0.001U2KV	Ceramic capacitor	2
J3,4,5	JT:61134-1	Pin connector	5
J1	JT:YFW500-01 ADK	Pin connector	1
J2	JT:LW1143-03 ADK	Pin connector	1
	PC:3415A	PCB	1



3.4. RS-232C Board, 7PZ:3416

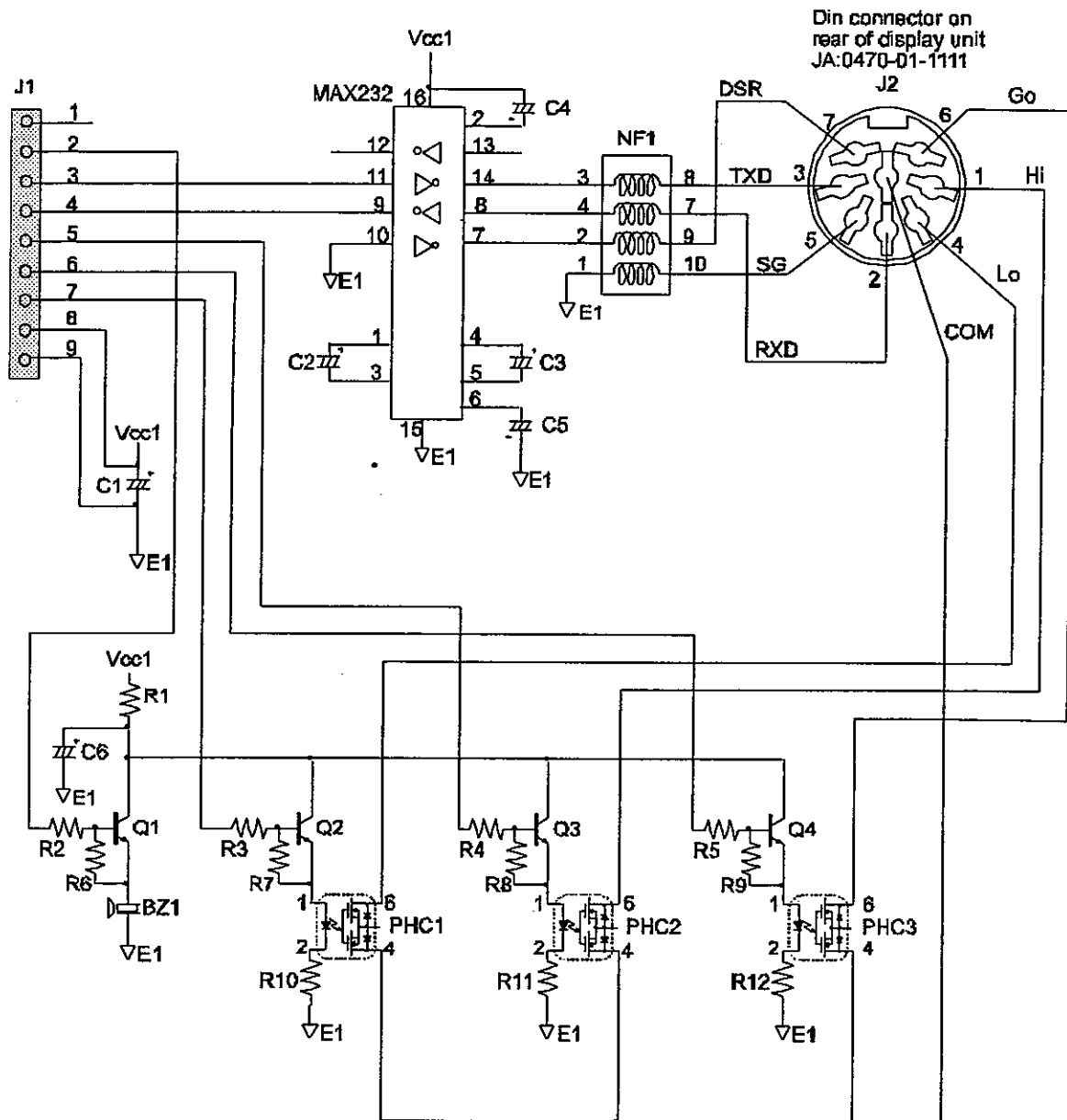


3.4.1. Parts List of 7PZ:3416

Symbols	Part No.	Part Name	Q'ty
U	UC:MAX232CPE	RS232C driver IC	1
C1,2,3,4,5	CK:SME16VB10	Chemical capacitor	5
J2	JA:4480-01-1111	DIN connector	1
J1	JI:09P-S2L2-EF	connector	1
	LR:BFR120507 ADK	3 turns common chock coil core	1
	3416A	PCB	1
		AWG28 Brown cable	1
		AWG28 Red cable	1
		AWG28 Orange cable	1
		AWG28 Yellow cable	1



3.5. Op-03 Board, 7PZ:3458

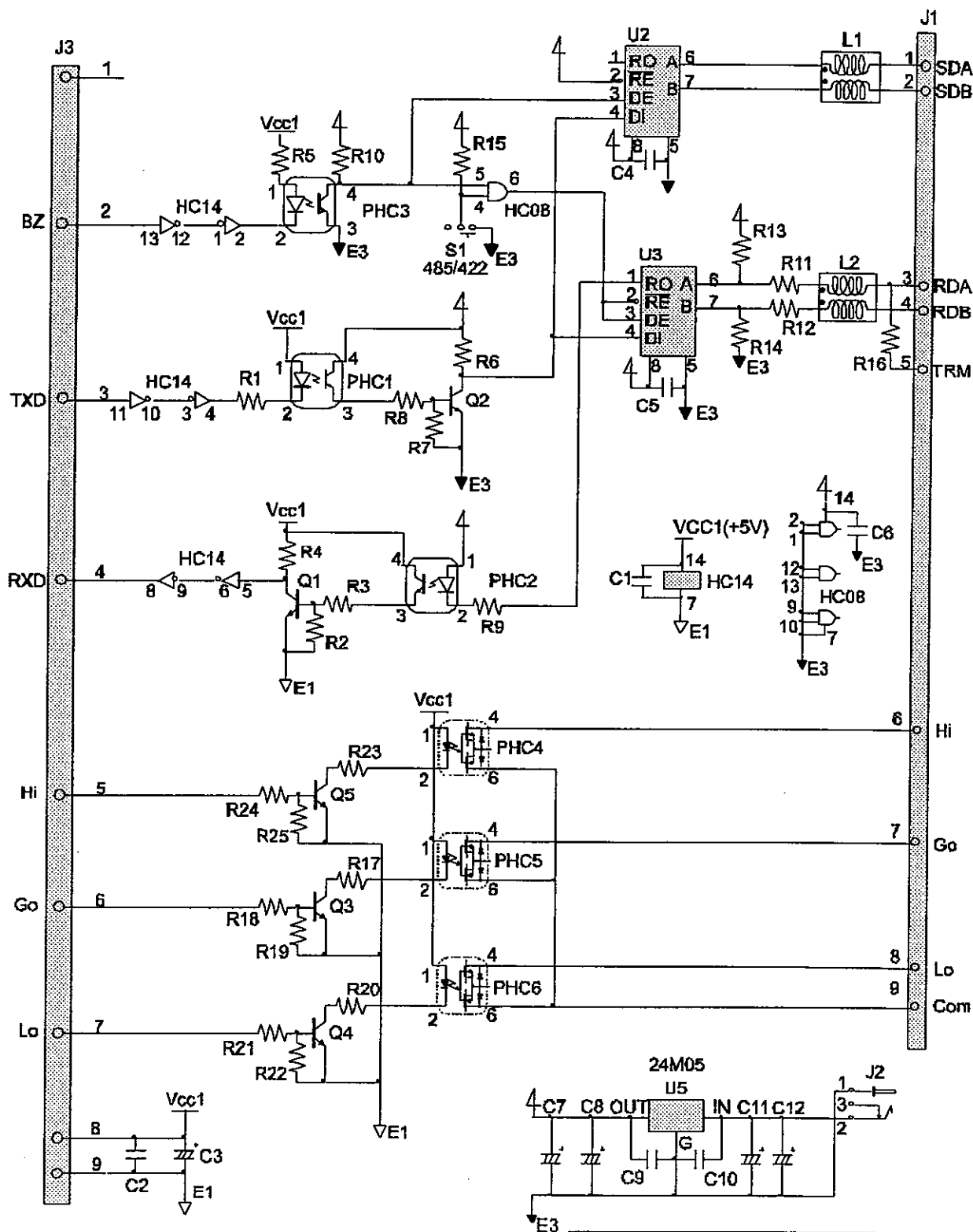


Model	HVW-G series
Description	OP-03 board
Stock No.	7PZ:3458
Drawing No.	QD-EC4-000201

3.5.1.Parts List of 7PZ:3458

Symbols	Part No.	Part Name	Q'ty
U1	UC:MAX232CPE	RS-232C driver IC	1
Q1,2,3,4	QT:C1815Y	Transistor	4
PHC1,2,3	DF:AQV253	Photo MOS relay	3
BZ1	ET:MEB-12C-5	Ceramic buzzer	1
NF1	NF:D-42C	Common chock	1
R1	RC:NAT22R	Carbon resister	1
R2,3,4,5	RC:NAT100R	Carbon resister	4
R6,7,8,9	RC:NAT56K	Carbon resister	4
R10,11,12	RC:NAT560R	Carbon resister	3
C1,2,3,4,5,6	SME25VB10		6
J1	JI:09P-S2T2-EF		1
J2	JA:4480-01-4151		1
	PC:3458	PCB	1

3.6. Op-04 Board, 7PZ:3459



Model	HVW-G series
Description	OP-04 board
Stock No.	7PZ:3459
Drawing No.	QD-EC4-000599

3.6.1.Parts List of 7PZ:3459

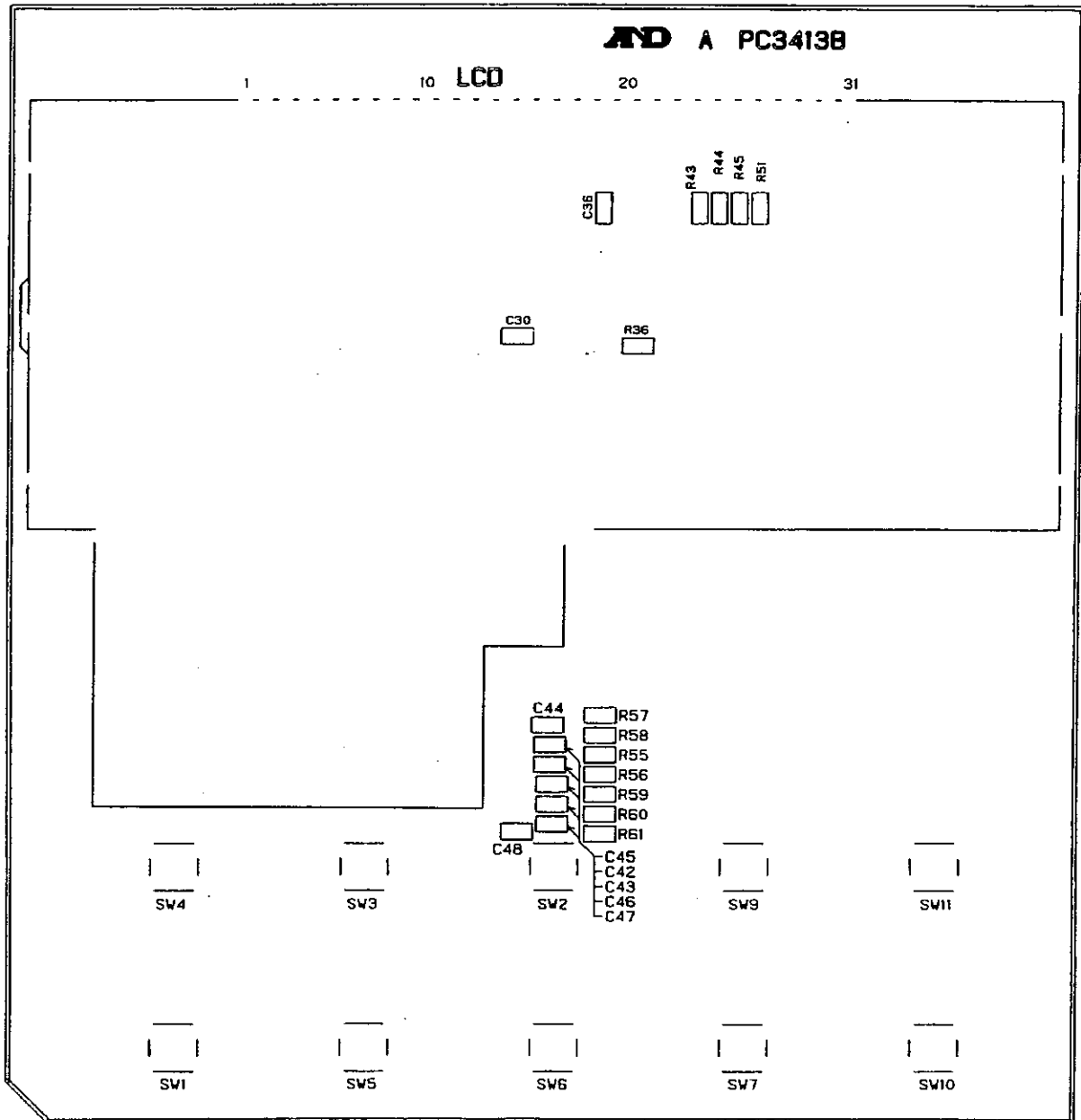
Symbols	Part No.	Part Name	Q'ty
U4	UC:HC08	HC AND gate	1
U1	UC:HC14	HC Not gate	1
U2,3	UC:LTC485	Bus transceiver IC	2
U5	UR:24M05HF	Voltage regulator	1
J1	TM:SLA9/90	Connector	1
J3	JI:09P-S2T2-EF	Pin header	1
J2	EJ:0470-01-230	Jack	1
PHC4,5,6	DF:AQV253	Photo MOS relay	3
PHC1,2,3	DF:PS2501-1L/K	PHOTO coupler	3
L1,2	NF:ZJY51R5-2P	Noise filter	2
Q1,2,3,4,5	QT:C1815Y	Transistor	5
S1	SS:MM-1202N	Slide switch	1
R13,14	RC:NAT47K	Carbon Resister	2
R16	RC:120R	Carbon Resister	1
R17,20,23	RC:NAT1.5K	Carbon Resister	3
R5	RC:NAT1.8K	Carbon Resister	1
R18,19,21,22,24,25	RC:NAT10K	Carbon Resister	6
R2,7	RC:NAT330R	Carbon Resister	2
R4,6,10,11,12,15	RC:NAT4.7K	Carbon Resister	6
R1,9	RC:NAT820R	Carbon Resister	2
R3,8	RC:NAT100R	Carbon Resister	2
C1,2,4,5,6,9,10	CC:0.1U25V	Ceramic capacitor	7
C3,7	CK:SME16VB100	Aluminum electrolytic capacitor	2
C12	CK:SME25VB470	Aluminum electrolytic capacitor	1
C8	CT:1D2R2	Tantalum electrolytic capacitor	1
C11	CT:1V010	Tantalum electrolytic capacitor	1
	PC:3459	PCB	1
	HT:6073PB	Radiator	1
	QA:AC256-1674	Isolation sheet	1

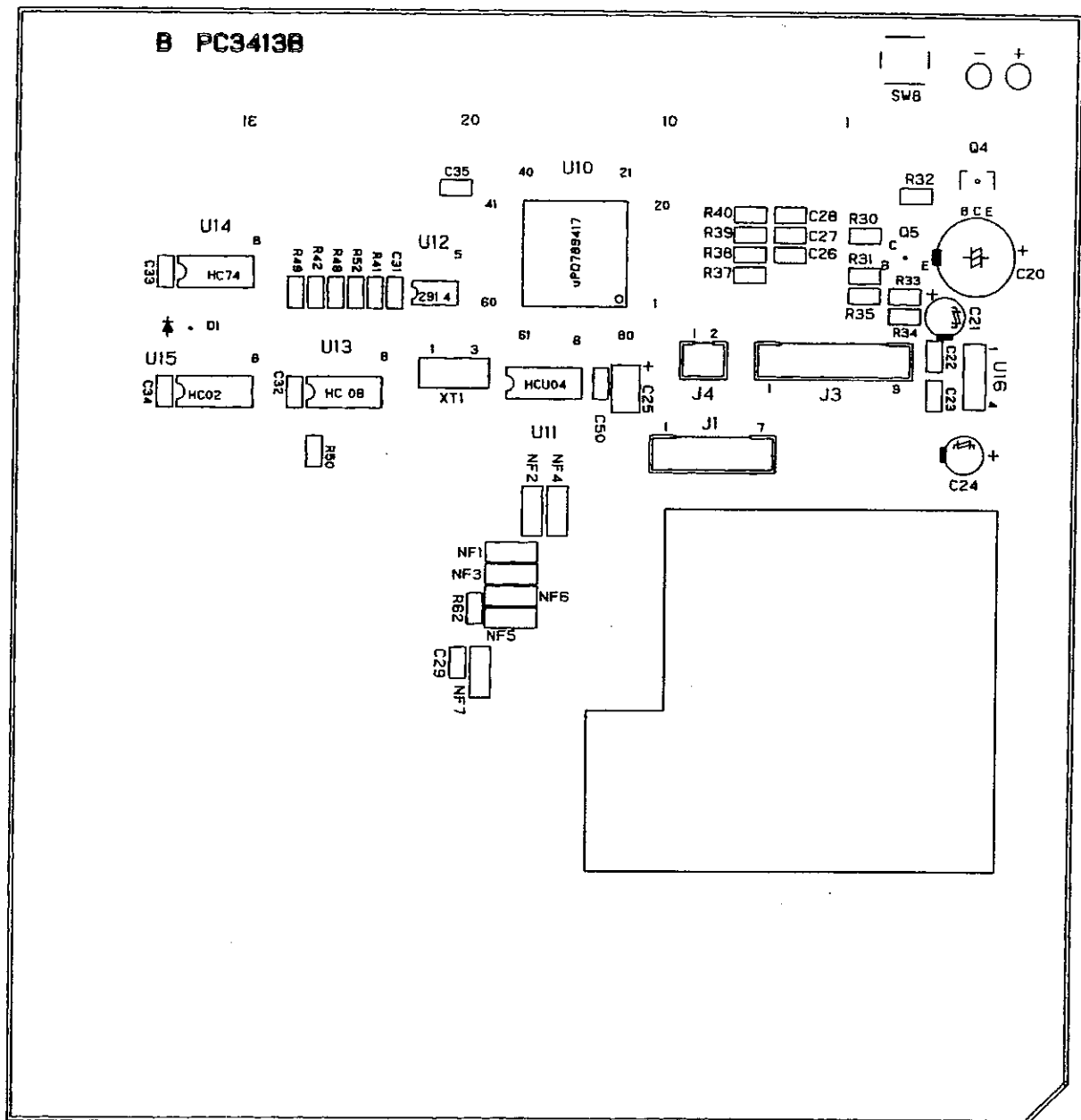


4. Parts Layout of Circuit



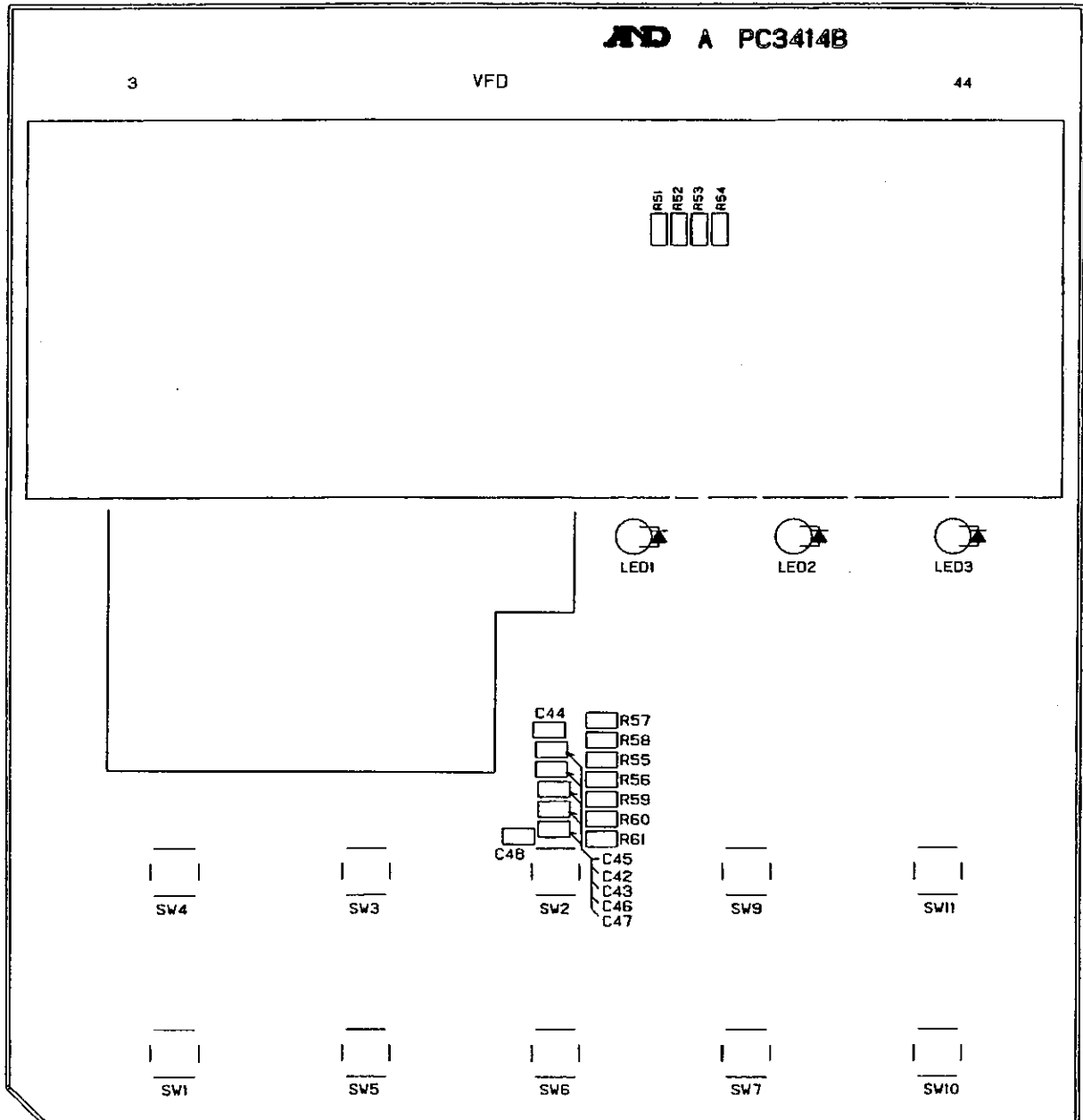
4.1. Type L Main Board, 7PZ:3413 (and 7PZ:3418)

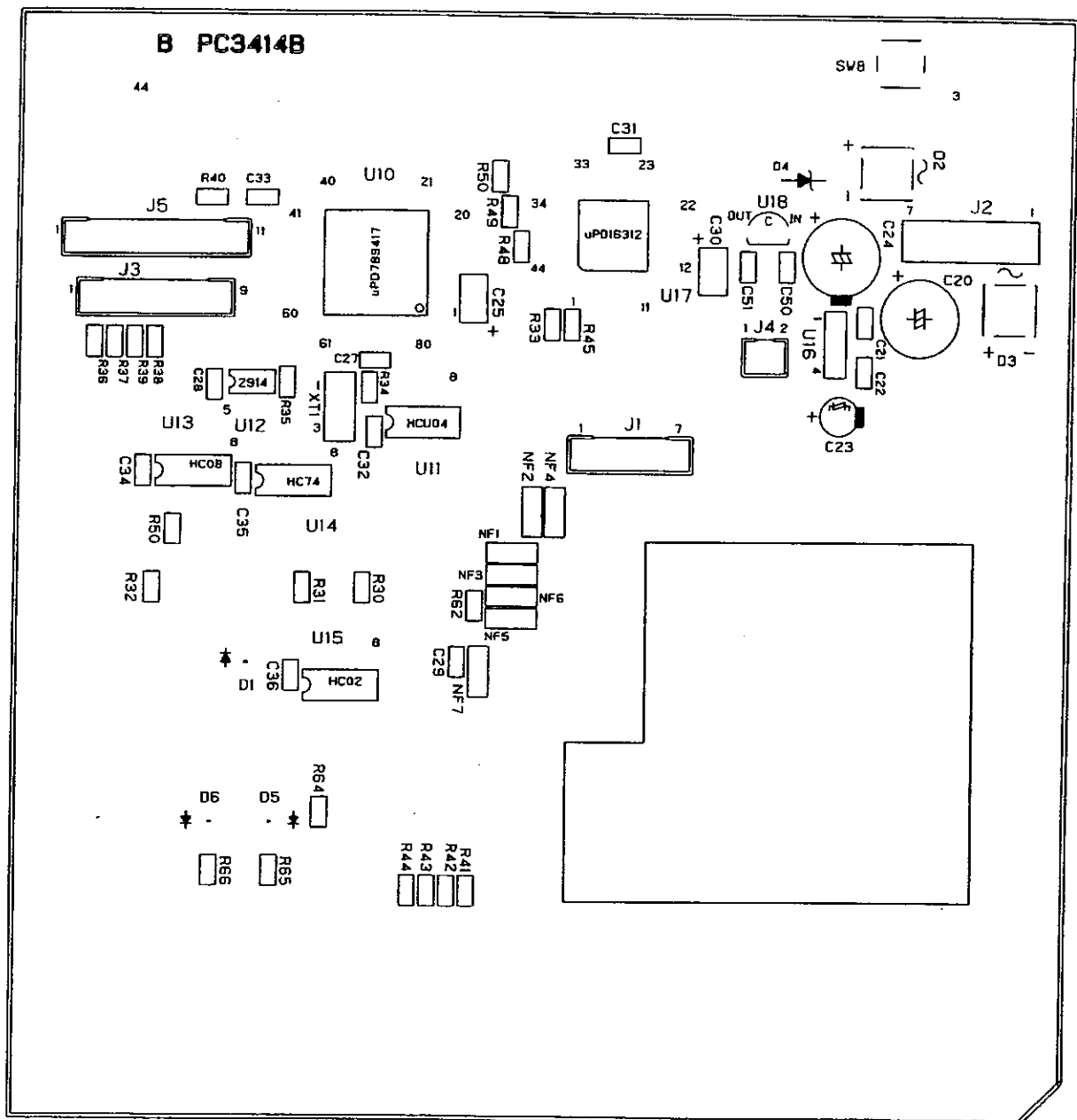






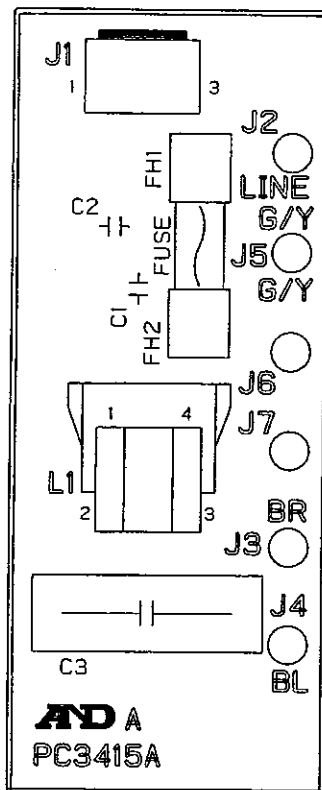
4.2. Type V Main Board, 7PZ:3414



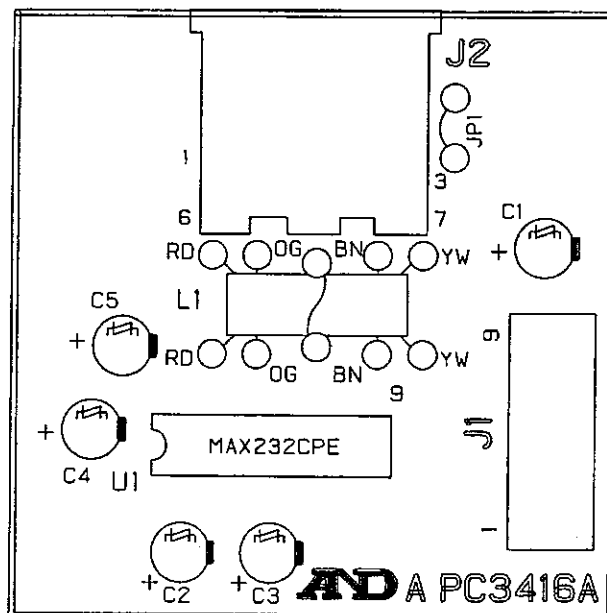




4.3. Power Relay Board, 7PZ:3415

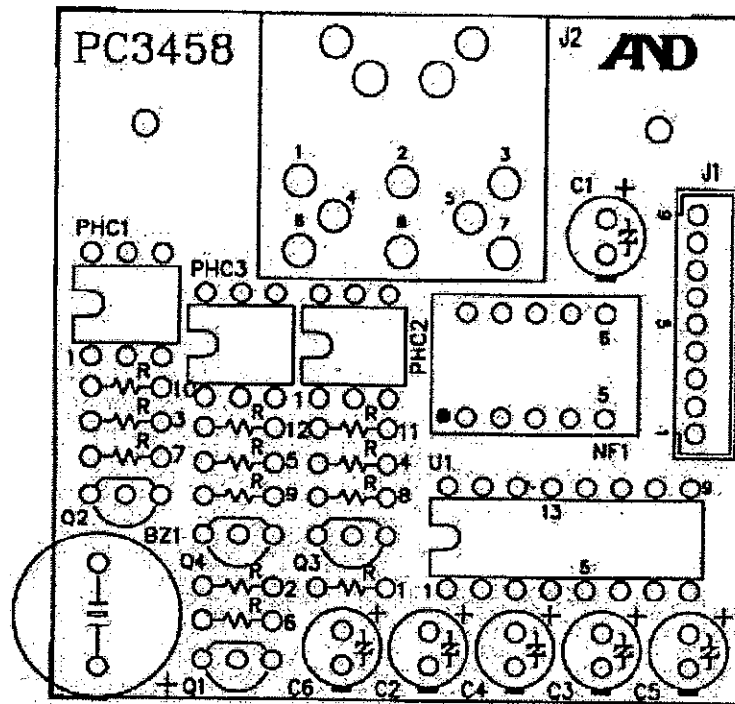


4.4. RS-232C Board, 7PZ:3416

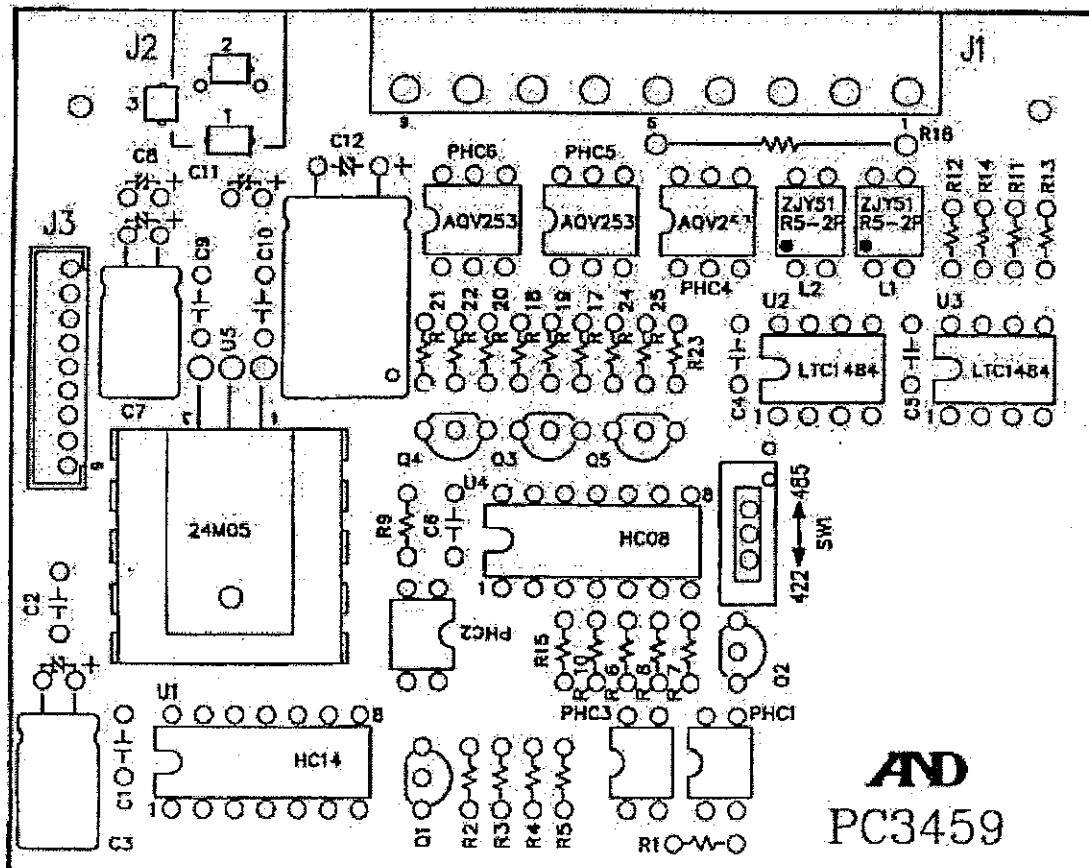




4.5. Op-03 Board, 7PZ:3458



4.6. Op-04 Board, 7PZ:3459





5. Specification

HV-G series

Product		HV-15KGL HV-15KGV			HV-60KGL HV-60KGV			HV-200KGL HV-200KGV		
Weighing Capacity [kg]		3	6	15	15	30	60	60	150	220
Min. weighing (1 digit) [g]		1	2	5	5	10	20	20	50	100
Weighing Capacity [lb] #		6	15	30	30	60	150	150	300	500
Min. weighing (1 digit) [lb] #		0.002	0.005	0.01	0.01	0.02	0.05	0.05	0.1	0.2
Weighing Capacity [oz] #		96	240	480	480	960	2400	2400	4800	8000
Min. weighing (1 digit) [oz] #		0.05	0.1	0.2	0.2	0.5	1	1	2	5
Weighing Capacity [lb_oz] #		30 lb			—					
Min. weighing (1 digit) [lb_oz] #		0.1 oz								
Number of samples in counting mode [units]		5 (can be changed to 10, 20, 50, 100)								
Max. count number [units]		15,000			12,000			11,000		
Display	HV-GL	7 segment liquid crystal display, Character height 25mm								
	HV-GV	7 segment fluorescent display, Character height 20mm								
Repeatability [g]		±1	±2	±5	±5	±10	±20	±20	±50	±100
Linearity [g]		±1	±2	±5	±5	±10	±20	±20	±50	±100
Span drift		20ppm/°C typ. (-10°C ~ 40°C)								
Power source	HV-GL	AC adaptor Please confirm that the AC adaptor type is correct for your local voltage and receptacle type. 50Hz/ 60Hz. Battery x 6 pieces R20P, LR20, type D or Mono								
	HV-GV	Please confirm that the Main power type is correct for your local voltage and receptacle type. (50Hz/ 60Hz)								
Battery life (HV-GL)		Approximately 600 hours with alkaline dry cell battery								
Ambient temperature and humidity		-10°C ~ 40°C, Less than 85%R.H. (Do not allow condensation)								
Weighing pan size [mm]		250 x 250			330 x 424			390 x 530		
Dimension [mm] Width x Depth x Height		275 x 474 x 368			330 x 621 x 771			390 x 712 x 773		
Mass of scale [kg]	HV-GL	6			11			17		
	HV-GV	7			12			18		

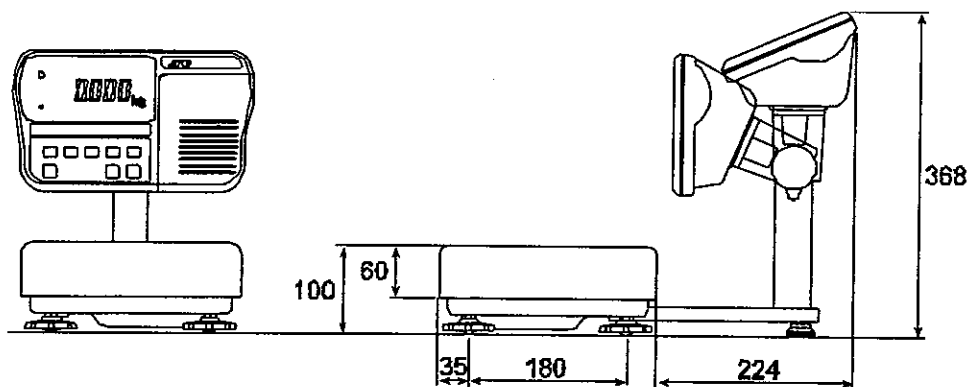
: If the law in your area rejects, you can not use the unit.

HW-G series

Product		HW-10KGL HW-10KGV	HW-60KGL HW-60KGV	HW-100KGL HW-100KGV	HW-200KGL HW-200KGV
Weighing Capacity [kg]		10	60	100	220
Min. weighing (1 digit) [g]		1	5	10	20
Weighing Capacity [lb] #		20	150	200	500
Min. weighing (1 digit) [lb] #		0.002	0.01	0.02	0.05
Weighing Capacity [oz] #		320	2400	3200	8000
Min. weighing (1 digit) [oz] #		0.05	0.2	0.5	1
Weighing Capacity [lb_oz] #		20 lb	—		
Min. weighing (1 digit) [lb_oz] #		0.1 oz			
Number of samples in counting mode [units]		5 (can be changed to 10、20、50、100)			
Max. count number [units]		10,000	12,000	10,000	11,000
Display	HW-GL	7 segment liquid crystal display, Character height 25mm			
	HW-GV	7 segment fluorescent display, Character height 20mm			
Repeatability [g]		±2	±10	±20	±40
Linearity [g]		±2	±10	±20	±40
Span drift		20ppm/°C typ. (-10°C ~ 40°C)			
Power source	HW-GL	AC adaptor Please confirm that the AC adaptor type is correct for your local voltage and receptacle type. 50Hz/ 60Hz. Battery x 6 pieces R20P, LR20, type D or Mono			
	HW-GV	Please confirm that the Main power type is correct for your local voltage and receptacle type. (50Hz/ 60Hz)			
Battery life (HW-GL)		Approximately 600 hours with alkaline dry cell battery			
Ambient temperature and humidity		-10°C ~ 40°C, Less than 85%R.H. (Do not allow condensation)			
Weighing pan size [mm]		250 x 250	330 x 424	390 x 530	390 x 530
Dimension [mm] Width x Depth x Height		275 x 474 x 368	330 x 621 x 771	390 x 712 x 773	390 x 712 x 773
Mass of scale [kg]	HW-GL	6	11	17	17
	HW-GV	7	12	18	18

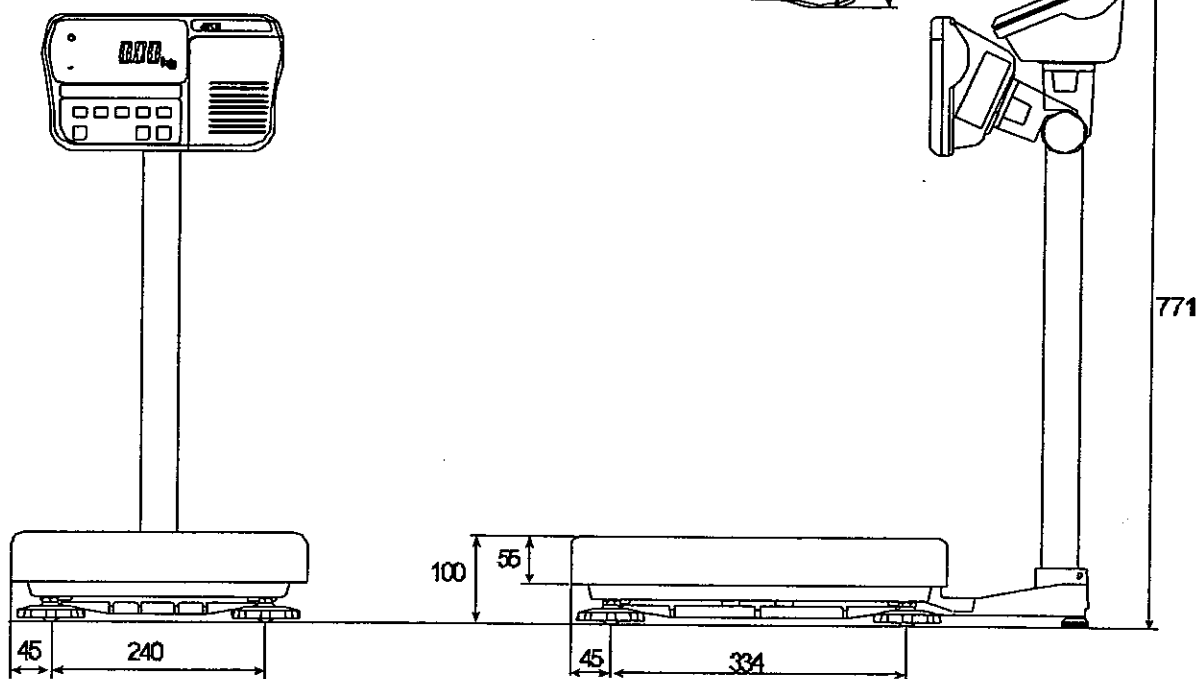
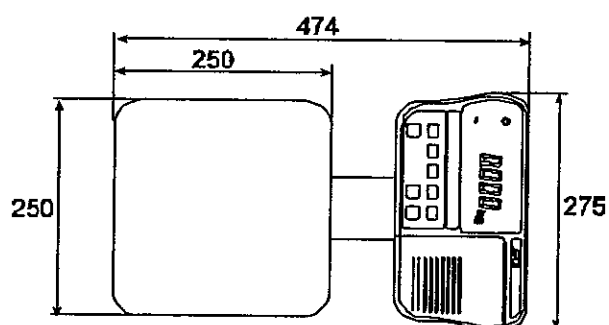
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Dimensions



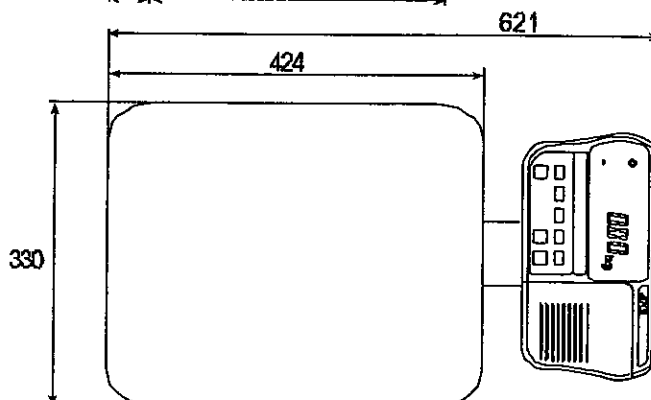
Products

HV-15KGL HV-15KGV
HW-10KGL HW-10KGV



Products

HV-60KGL HV-60KGV
HW-60KGL HW-60KGV





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