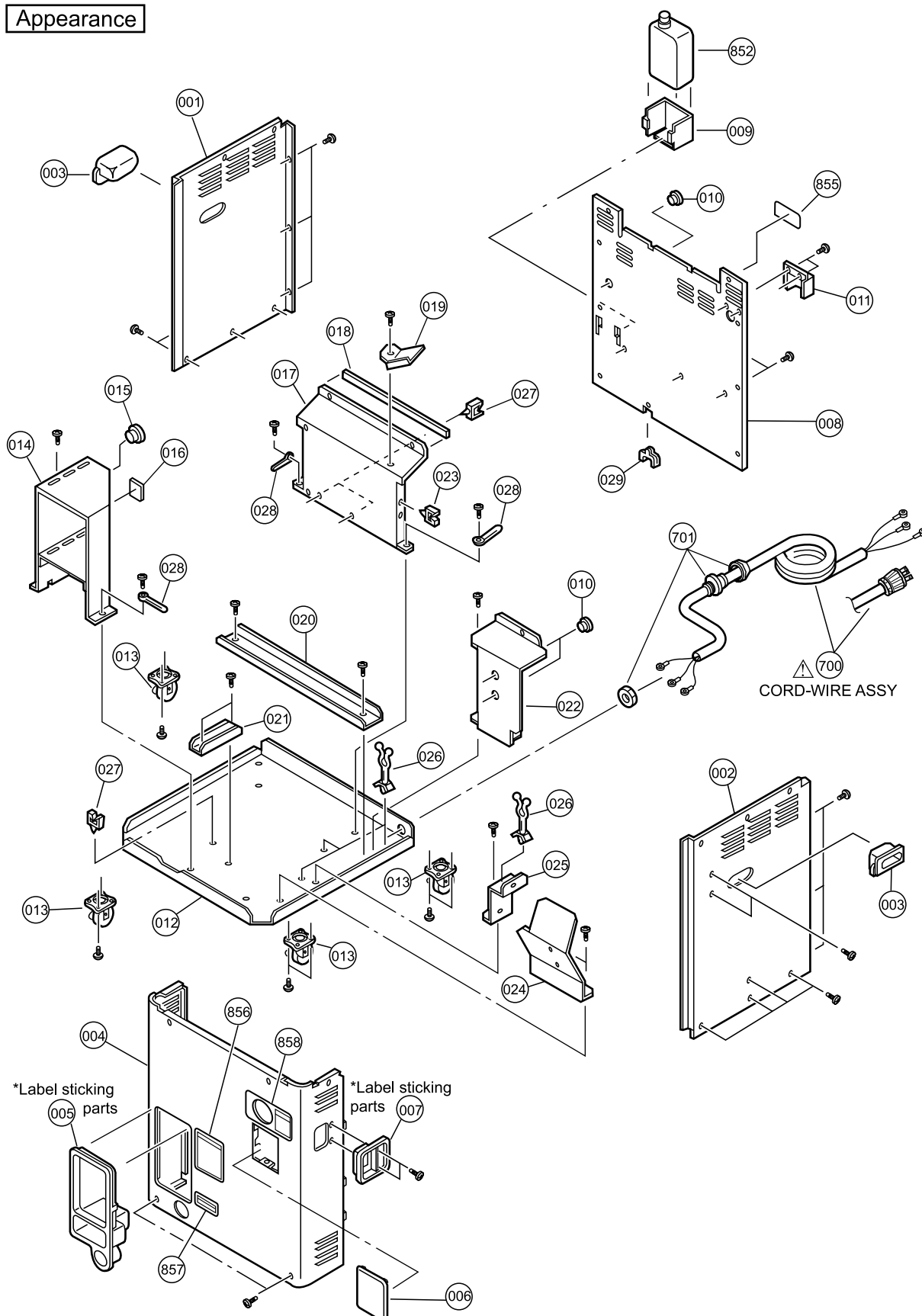


15. Parts List

■ Exploded View

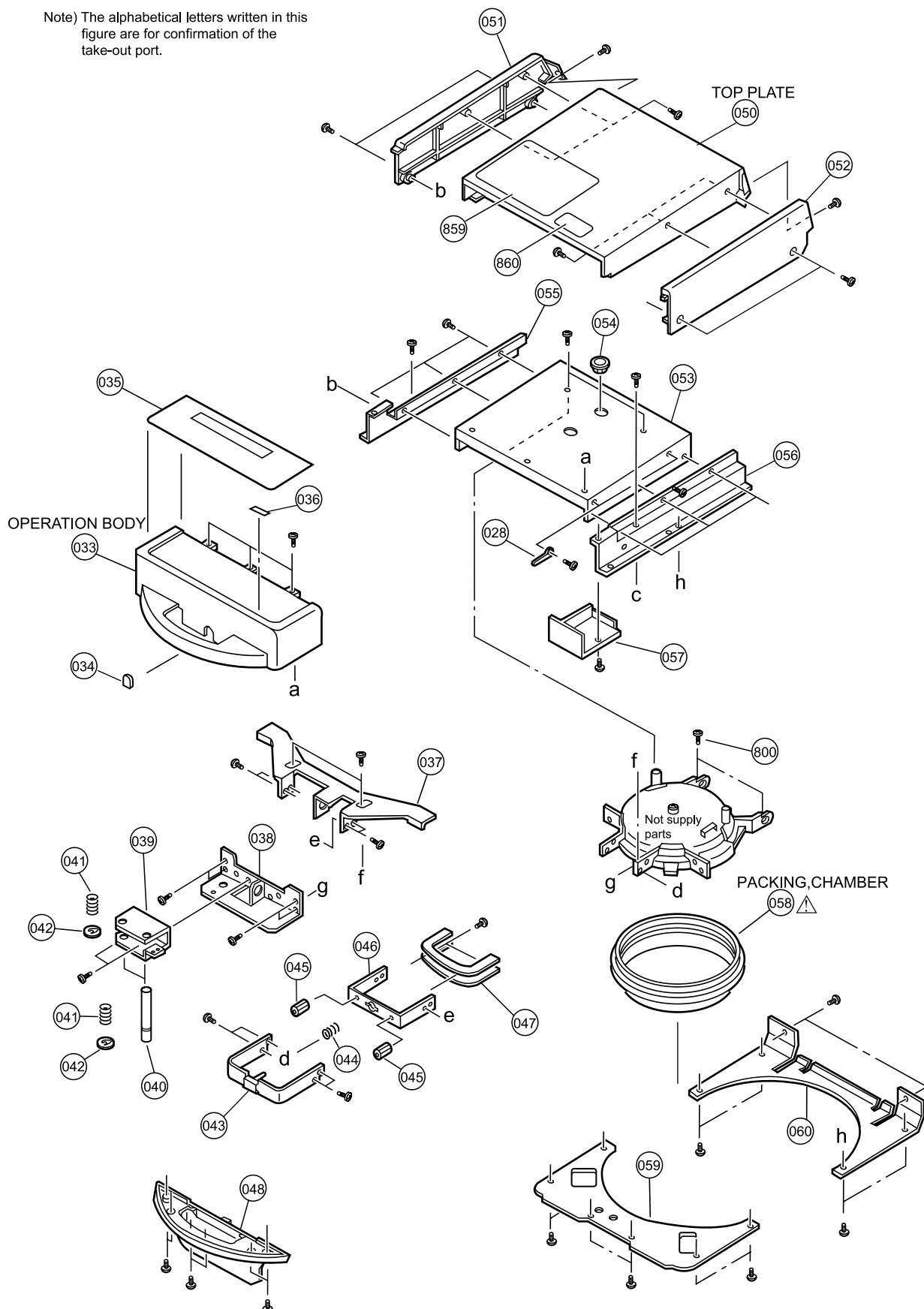
MLS-3781L/3751L

Appearance



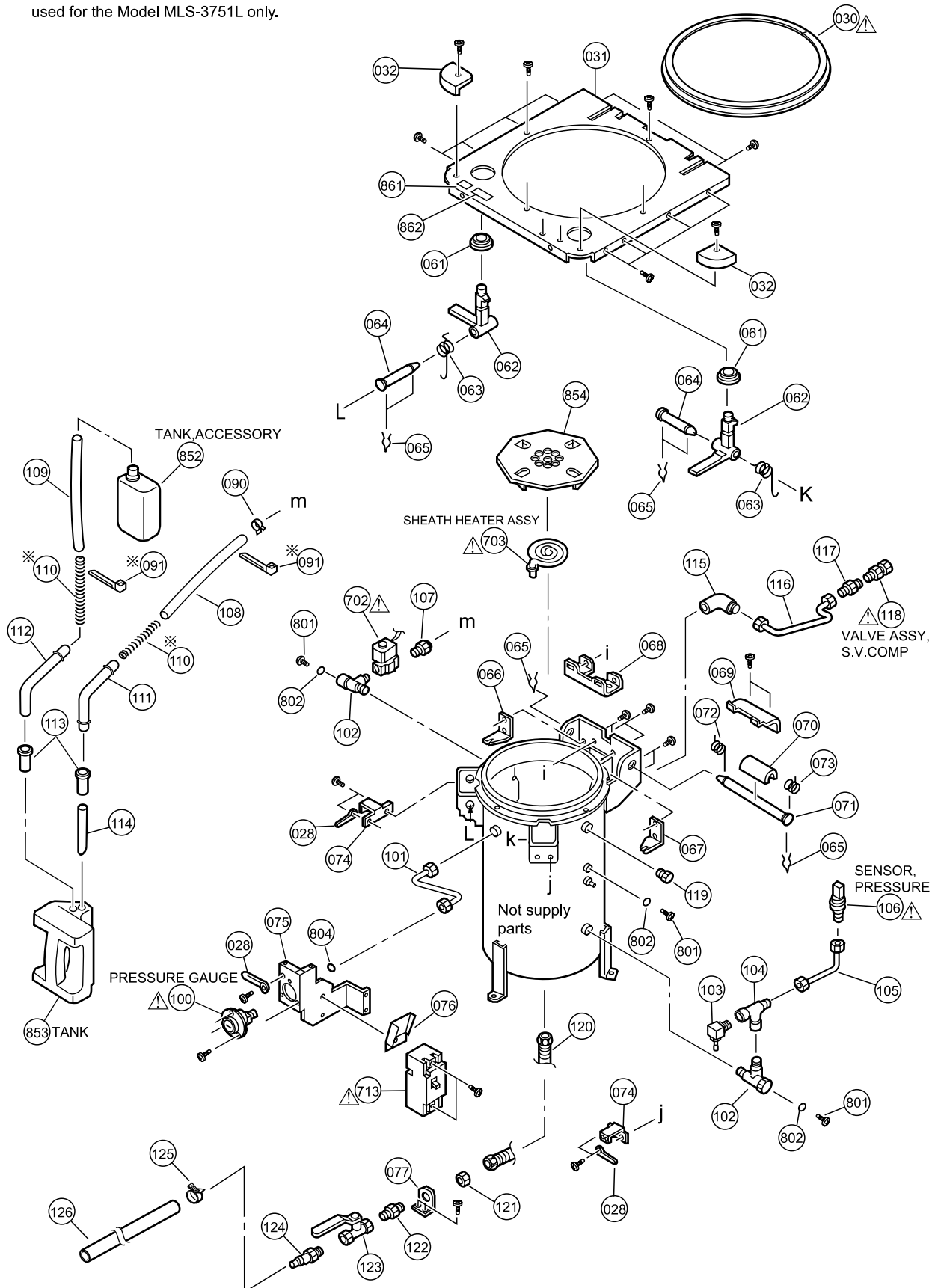
Lit construction

Note) The alphabetical letters written in this figure are for confirmation of the take-out port.

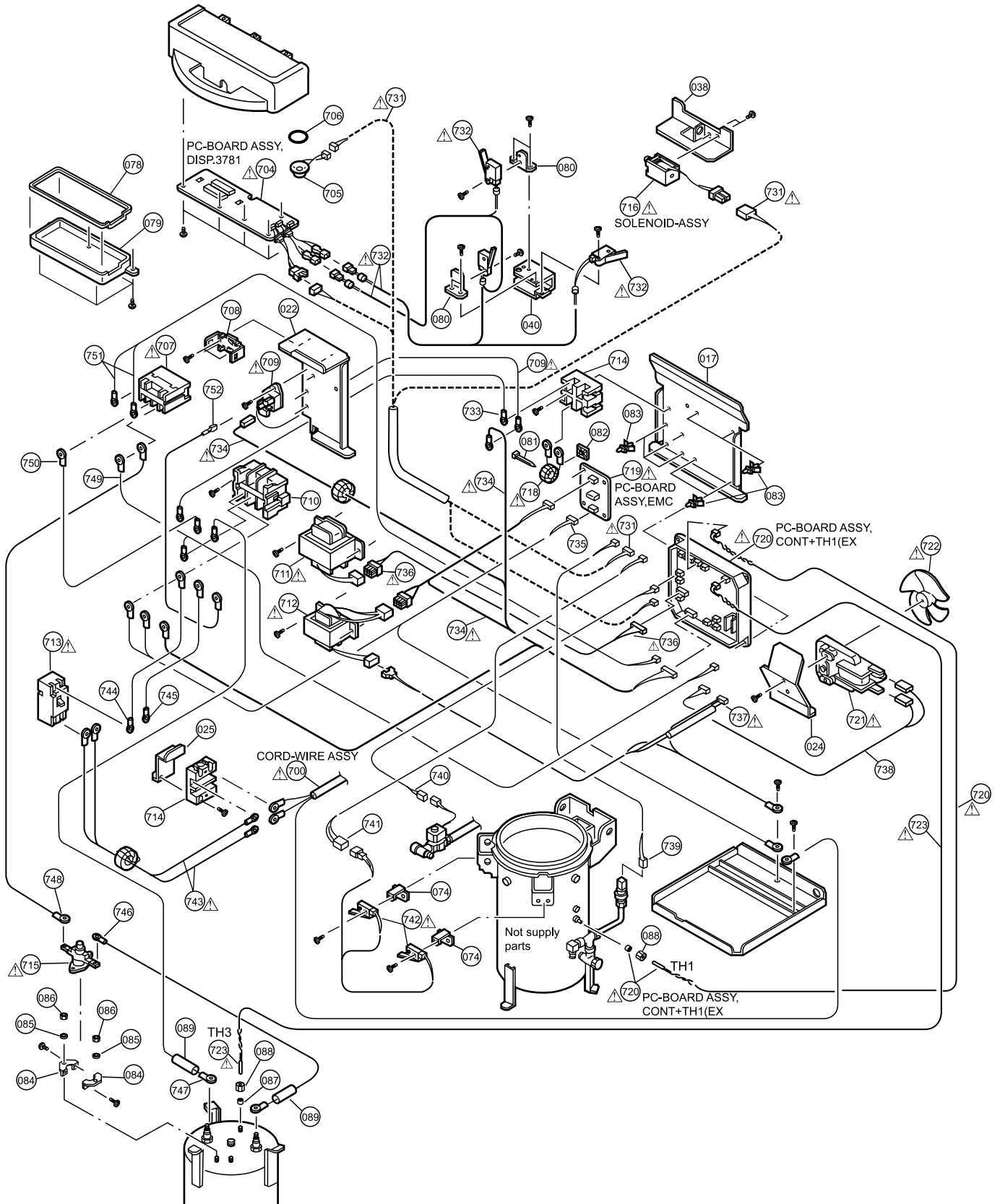


Construction (Piping)

※The Parts of the Part Nos. 91 and 110 are used for the Model MLS-3751L only.



Electricals



PARTS LIST

MLS-3781L/3751L



Parts marked with Δ are safety parts. These parts are important in maintaining safety. While replacing, always use specified parts.

NOTE: Parts order must contain Model No., Part No., and Description.

KEY.NO	PART NO.	DESCRIPTION	QTY	3781L 230V A3	3781L 230V Without Plug	3751L 120V A3	3751L 230V Without Plug
001	661 145 5321	SIDE PLATE,LEFT 3781 EX	1	○	○	—	—
001	661 145 5352	SIDE PLATE,LEFT 3751 EX	1	—	—	○	○
002	661 145 5338	SIDE PLATE,RIGHT 3781 EX	1	○	○	—	—
002	661 145 5345	SIDE PLATE,RIGHT 3751 EX	1	—	—	○	○
003	632 860 3145	HANDLE,FRAME(A-166-1)	2	○	○	○	○
004	661 138 4089	FRONT PANEL,MLS-3781	1	○	○	—	—
004	661 138 4188	FRONT PANEL 3751	1	—	—	○	○
005	661 146 9526	COVER PLATE ASSY,TANK EX	1	○	○	○	○
006	661 138 4164	COVER PLATE,PRINTER	1	○	○	○	○
007	661 140 8532	COVER PLATE ASSY,SWITCH	1	○	○	○	○
008	661 145 5307	REAR-PLATE,MLS-3781 EX	1	○	○	—	—
008	661 145 5314	REAR-PLATE,MLS-3751 EX	1	—	—	○	○
009	661 122 6303	SUPPORT PLATE,TANK	1	○	○	○	○
010	661 125 1381	BUSH,TB-1116	3	○	○	○	○
011	661 138 8292	COVER PLATE,SAFETY VALVE	1	○	○	○	○
012	661 145 5291	CHASSIS,MLS-3781 EX	1	○	○	○	○
013	661 110 9491	CASTER,E-50RS	4	○	○	○	○
014	661 138 4478	CASE ASSY,TANK	1	○	○	○	○
015	661 120 6534	BUSH,TB-3545	1	○	○	○	○
016	661 124 8688	SPACER,TANK	1	○	○	○	○
017	661 108 2534	PC BASAL PLATE	1	○	○	○	○
018	661 071 4047	PACKING,LCD/T3.5X5X310	1	○	○	○	○
019	661 131 9807	COVER PLATE,CONTROL BOARD	1	○	○	○	○
020	661 117 2266	SUPPORT PLATE,CHASSIS REA	1	○	○	○	○
021	661 117 2273	SUPPORT PLATE,SHASSIS	1	○	○	○	○
022	661 143 0410	ELEC-APPARATUS CASE,3781	1	○	○	○	○
023	661 132 0995	CLIP,HC-10U	1	○	○	○	○
024	661 117 2563	FAN-FITTING PLATE	1	○	○	○	○
025	661 122 5337	FITTING PLATE,TERMINAL BL	1	○	○	○	○
026	632 800 6847	BINDING BAND	3	○	○	○	○
027	632 740 8154	CLIP	3	○	○	○	○
028	632 780 0880	FITTING-BAND ASSY,L60	4	○	○	○	○
029	632 790 2409	BINDING BAND,ADGE HOLDER	1	○	○	○	○
Δ 030	661 120 6190	PACKING,CHAMBER TOP	1	○	○	○	○
031	661 138 0654	PANEL,MLS-3781	1	○	○	○	○
032	661 136 8539	COVER PLATE,PANEL CORNER	2	○	○	○	○
033	661 136 8218	OPERATION-BODY	1	○	○	○	○
034	661 133 6040	COVER PLATE, OPERA. HOLE	1	○	○	○	○
035	661 146 5832	ORNAMENT PANEL,3781EX	1	○	○	○	○
036	661 145 3419	ITEM NAME PLATE,MLS-3781L	1	○	○	—	—
036	661 145 3402	ITEM NAME PLATE,MLS-3751L	1	—	—	○	○
037	661 139 8253	ACTIVATE PLATE,LOCK SHAFT	1	○	○	○	○
038	661 139 8246	FITTING PLATE,SOLENOID	1	○	○	○	○
039	661 138 0906	FITTING PLATE,SHAFT	1	○	○	○	○
040	661 108 3937	SHAFT,SWICH	2	○	○	○	○
041	661 108 5078	SPRING,SWICH	2	○	○	○	○
042	411 001 0102	RING E 4	2	○	○	○	○
043	661 117 2006	SUPPORT-PLATE ASSY,HANDLE	1	○	○	○	○
044	632 904 2127	SPRING,IH	1	○	○	○	○

KEY.NO	PART NO.	DESCRIPTION	QTY	3781L 230V A3	3781L 230V Without Plug	3751L 120V A3	3751L 230V Without Plug
045	661 142 0596	SPACER,HANDLE	2	○	○	○	○
046	661 117 1733	SUPPORT PLATE,HANDLE(1)	1	○	○	○	○
047	661 108 3531	HANDLE,MOVING ELEMENT	1	○	○	○	○
048	661 117 1849	COVER,HANDLE	1	○	○	○	○
050	661 138 5116	TOP PLATE,MLS-3781	1	○	○	○	○
051	661 108 3272	LEFT SIDE PLATE	1	○	○	○	○
052	661 108 3159	RIGHT SIDE PLATE	1	○	○	○	○
053	661 138 9565	FITTING PLATE,TOP-PLATE	1	○	○	○	○
054	661 125 0322	BUSH,TB-1520	1	○	○	○	○
055	661 139 9779	HAND BRACKET,TOP-PLATE L	1	○	○	○	○
056	661 139 9786	HAND BRACKET,TOP-PLATE R	1	○	○	○	○
057	661 125 0926	COVER PLATE,SPEAKER	1	○	○	○	○
△ 058	661 135 4488	PACKING,CHAMBER	1	○	○	○	○
059	661 139 9939	COVER PLATE,CHAMBER C.F	1	○	○	○	○
060	661 139 9922	COVER PLATE,CHAMBER C.R	1	○	○	○	○
061	661 117 2044	PACKING,PANEL	2	○	○	○	○
062	661 117 2259	ROCK SHAFT	2	○	○	○	○
063	661 117 2082	SPRING,LOCK FRONT R	2	○	○	○	○
064	661 108 4279	SHAFT,FRONT	2	○	○	○	○
065	411 208 0707	PIN SNAP 18X36	6	○	○	○	○
066	661 126 7559	HAND BRACKET,SPRING L	1	○	○	○	○
067	661 126 7542	HAND BRACKET,SPRING R	1	○	○	○	○
068	661 117 1863	HAND BRACKET,BRAKE UNDER	1	○	○	○	○
069	661 117 1856	HAND BRACKET,BRAKE UPPER	1	○	○	○	○
070	661 117 1870	PACKING,BRAKE	1	○	○	○	○
071	661 136 8201	SHAFT,REAR	1	○	○	○	○
072	661 136 7327	SPRING,LEFT HINGE	1	○	○	○	○
073	661 136 7334	SPRING,RIGHT HINGE	1	○	○	○	○
074	661 142 0589	FITTING PLATE,SW LOCK SHA	2	○	○	○	○
075	661 138 3655	SWICH FITTING PLATE,3781	1	○	○	○	○
076	661 131 9227	COVER PLATE,BREAKER	1	○	○	○	○
077	661 098 2514	STANDING METAL,JOINT	1	○	○	○	○
078	661 132 3842	PACKING,O PCB SEAL A	1	○	○	○	○
079	661 136 7136	COVER PLATE, BOARD CONT.	1	○	○	○	○
080	661 137 3328	FITTING PLATE,SWITCH	2	○	○	○	○
081	632 629 2259	BINDING BAND	1	○	○	○	○
082	632 013 9987	FIXING BASE,BS-20G	1	○	○	○	○
083	632 014 5391	SPACER	8	○	○	○	○
084	661 125 3385	HAND BRACKET,THERMOSTAT	2	○	○	○	○
085	411 008 2802	WASHER SPR 6	2	○	○	○	○
086	411 056 1000	NUT HEX 6	2	○	○	○	○
087	632 015 0128	RING PACKING,THERMISTOR	1	○	○	○	○
088	661 114 5864	NUT,THERMISTOR HEX10	2	○	○	○	○
089	632 675 8892	INSULATION TUBE,TERMINAL	2	○	○	○	○
090	661 125 1343	FITTING BAND,D11.5(NO.22)	1	○	○	○	○
091	632 526 7159	BINDING BAND	2	—	—	○	○
△ 100	661 112 4791	PRESSURE GAUGE,350P	1	○	○	○	○
101	661 108 4699	PIPE ASSY,PRESSURE GAUGE	1	○	○	○	○
102	661 117 3324	JOINT,T CHAMBER	2	○	○	○	○
△ 103	632 861 3373	VALVE,VC12B1-F	1	○	○	○	○
104	661 117 3331	JOINT,T VACUUM	1	○	○	○	○
105	661 108 4729	PIPE ASSY,P.S MLS-3781	1	○	○	○	○
△ 106	661 120 6497	SENSOR,PRESSURE NSK-BA-01	1	○	○	○	○
107	661 108 4620	JOINT,ORIFICE 1.8	1	○	○	○	○
108	661 139 7300	HOSE ASSY,CHAMBER	1	○	○	○	○

KEY.NO	PART NO.	DESCRIPTION	QTY	3781L 230V A3	3781L 230V Without Plug	3751L 120V A3	3751L 230V Without Plug
109	661 120 6695	HOSE,EXHAUST	1	○	○	○	○
110	632 867 7009	SPRING,PYPE	2	—	—	○	○
111	661 137 0082	PIPE,COOLING	1	○	○	○	○
112	661 137 0099	PIPE,EXHAUST	1	○	○	○	○
113	632 014 5599	PACKING,TANK	2	○	○	○	○
114	661 120 6688	HOSE,TANK INNER	1	○	○	○	○
115	661 138 8575	JOINT,R1/4XG1/4 FLARE	1	○	○	○	○
116	661 138 8506	PIPE ASSY,SAFETY VALVE	1	○	○	○	○
117	661 110 9309	JOINT,SAFETY VALVE	1	○	—	○	—
117	661 139 7133	JOINT,SAFETY VALVE CE	1	—	○	—	○
△ 118	661 134 2072	VALVE ASSY,S.V. COMP(560)	1	○	—	○	—
△ 118	661 080 0597	PRESSURE SAFETY VALVE,PED	1	—	○	—	○
119	661 110 7176	BOLT,1/4	1	○	○	○	○
120	661 124 3584	PIPE ASSY,FREKII L250	1	○	○	○	○
121	661 110 7749	NUT,G1/2	1	○	○	○	○
122	661 112 7921	JOINT-METAL,R1/2XG1/2	1	○	○	○	○
123	661 128 5157	VALVE,G-FS-13	1	○	○	○	○
124	661 110 6810	JOINT-METAL,R1/2XBANBOO	1	○	○	○	○
125	661 098 4815	FITTING BAND,D21	1	○	○	○	○
126	632 791 1616	HOSE,INSIDE VESSEL L	1	○	○	○	○
△ 700	661 117 7766	CORD-WIRE ASSY,230 ENTELA	1	○	—	—	—
△ 700	661 066 6063	CORD-WIRE ASSY,W/O P(CE)	1	—	○	—	○
△ 700	661 117 7773	CORD-WIRE ASSY,120 ENTELA	1	—	—	○	—
701	632 863 2077	CORD BUSH,NSL-13	1	○	○	○	○
△ 702	661 110 1273	MAGNET UNIT ASSY,NC	1	○	○	○	○
△ 703	661 047 5733	SHEATH HEATER ASSY,AC230V	1	○	○	—	—
△ 703	661 143 3572	SHEATH HEATER ASSY,AC120V	1	—	—	○	—
△ 703	661 047 5702	SHEATH HEATER ASSY,AC230V	1	—	—	—	○
△ 704	661 136 8294	PC-BOARD ASSY,DISP. 3781	1	○	○	○	○
△ 705	661 072 3544	SPEAKER-ASSY	1	○	○	○	○
706	661 081 4112	O-RINGS,IN46/NBR 70	1	○	○	○	○
△ 707	661 052 4356	RELAY ASSY,AC200/240	1	○	○	—	○
△ 707	661 140 9645	RELAY ASSY,AC100/120	1	—	—	○	—
708	632 810 9296	MTG METAL,E-METAL R99-07	1	○	○	○	○
△ 709	661 148 4499	CONNECTOR,SCR(EX)	1	○	○	○	○
710	632 881 0567	TERMINAL BASE,AYBN043-1	1	○	○	○	○
△ 711	661 131 9265	AC-TRANSFORMER,601N0186	1	○	○	—	○
△ 711	661 131 9258	AC-TRANSFORMER,601N0185	1	—	—	○	—
△ 712	661 131 9241	AC-TRANSFORMER,601N0184	1	○	○	○	○
△ 713	661 119 4503	BREAKER,BBW2308(CE)	1	○	○	○	○
714	661 124 9081	TERMINAL BLOCK,ML-11-30A	2	○	○	○	○
△ 715	632 860 6658	THERMOSTAT,CR-1B(CE)	1	○	○	○	○
△ 716	661 140 8587	SOLENOID-ASSY	1	○	○	○	○
△ 718	661 142 1982	COIL SET,HK-20D150-8002	1	○	○	○	○
△ 719	661 139 8505	PC-BOARD ASSY,EMC3781CE	1	○	○	—	○
△ 719	661 139 8543	PC-BOARD ASSY,EMC3751CE	1	—	—	○	—
△ 720	661 148 4635	PC-BOARD ASSY,CONT+TH1(EX	1	○	○	○	○
△ 721	661 145 3914	MOTOR,KUSATSU T110AD 220V	1	○	○	—	○
△ 721	661 145 3907	MOTOR,KUSATSU T110AB 120V	1	—	—	○	—
△ 722	632 554 3970	FAN	1	○	○	○	○
△ 723	632 860 9734	THERMISTOR ASSY,E3M-342	1	○	○	○	○
△ 731	661 136 8478	HOUSING ASSY,D+T 3781	1	○	○	—	—
△ 731	661 146 1049	HOUSING ASSY,X+U 3751 CE	1	—	—	○	○
△ 732	661 136 8270	HOUSING ASSY,DS 3781	1	○	○	○	○

KEY.NO	PART NO.	DESCRIPTION	QTY	3781L 230V A3	3781L 230V Without Plug	3751L 120V A3	3751L 230V Without Plug
733	661 139 8666	HOUSING ASSY,J3781CE	1	○	○	○	○
△ 734	661 139 8567	HOUSING ASSY,B230 3781	1	○	○	—	○
△ 734	661 139 8574	HOUSING ASSY,B120 3751	1	—	—	○	—
735	661 139 8673	HOUSING ASSY,K3781CE	1	○	○	○	○
△ 736	661 139 8635	HOUSING ASSY,G230 3781	1	○	○	—	○
△ 736	661 139 8642	CONNECTOR,G120 3751	1	—	—	○	—
△ 737	661 139 8581	HOUSING ASSY,C3781 ENTELA	1	○	—	○	—
△ 737	661 139 8598	HOUSING ASSY,C3781 CE	1	—	○	—	○
738	661 139 8611	HOUSING ASSY,F3781CE	1	○	○	○	○
739	661 124 8923	HOUSING ASSY,PS 3781	1	○	○	○	○
740	661 124 9029	HOUSING ASSY,V 3781	1	○	○	—	—
740	661 134 8463	HOUSING ASSY,W 3751	1	—	—	○	○
741	661 124 8893	HOUSING ASSY,L 3781	1	○	○	—	—
741	661 124 9050	HOUSING ASSY,Y 3751	1	—	—	○	○
△ 742	661 124 8909	HOUSING ASSY,M 3781	1	○	○	○	○
△ 743	661 124 8930	HOUSING ASSY,Q1 3781	1	○	○	—	—
△ 743	661 124 8961	HOUSING ASSY,R1 3751	1	—	—	○	○
744	661 124 8947	HOUSING ASSY,Q2 3781	1	○	○	—	—
744	661 124 8978	HOUSING ASSY,R2 3751	1	—	—	○	○
745	661 124 8954	HOUSING ASSY,Q3 3781	1	○	○	—	—
745	661 124 8985	HOUSING ASSY,R3 3751	1	—	—	○	○
746	661 103 0788	HOUSING ASSY,P 3780	1	○	○	○	○
747	661 124 8534	HOUSING ASSY,HEATER 3781	1	○	○	○	○
748	661 124 8541	HOUSING ASSY,THERMO 3781	1	○	○	○	○
749	661 139 8680	HOUSING ASSY,N3781CE	1	○	○	—	○
749	661 139 8697	HOUSING ASSY,O3751CE	1	—	—	○	—
750	661 139 8710	HOUSING ASSY,A3781CE	1	○	○	○	○
751	661 139 8659	HOUSING ASSY,I3781CE	1	○	○	○	○
752	661 139 8703	HOUSING ASSY,S3781CE	1	○	○	○	○
800	411 214 4102	BOLT HEX-SCT 5X14	2	○	○	○	○
801	411 111 3109	SCR TRS 5X8	3	○	○	○	○
802	632 649 8170	O RING,P5 SI 70°	3	○	○	○	○
852	632 869 3047	TANK,ACCESSORY	1	○	○	○	○
853	661 108 3678	TANK,MLS-3781	1	○	○	○	○
854	661 095 8069	HEATER COVER,3780	1	○	○	○	○
855	632 877 9574	CAUTION EXPRESS LABEL,EX	1	○	○	○	○
856	661 139 6938	CAUTION LABEL,TANK EX	1	○	○	○	○
857	632 877 9598	CAUTION EXPRESS LABEL,DRA	1	○	○	○	○
858	661 139 6884	INDICATION LABEL,PR GA EX	1	○	○	○	○
859	661 139 6921	CAUTION LABEL,PRESSURE EX	1	○	○	○	○
860	661 139 6969	CAUTION LABEL,STERI. ITEM	1	○	○	○	○
861	632 877 9604	CAUTION EXPRESS LABEL,HIG	1	○	○	○	○
862	661 138 4041	LABEL,PANEL PROTECT	1	○	○	○	○
888	661 139 6976	INSTRUCTION MANUAL,3781EX	1	○	○	○	○

16. Instruction Manual of Works for Optional Parts

* Please refer to this chapter which includes the “Mounting Work Instruction Manuals” each for the optional printer and the object temperature sensor

(1) Printer (Item No.: MLS-37PR) mounting work instruction manual

Installation work manual

Model number: **MLS-37PR (Printer)**
(For **MLS-3751** and **MLS-3781**)

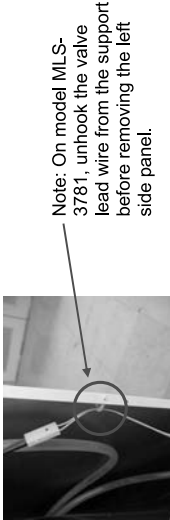
SANYO

Be sure to follow these instructions and perform the installation work for this product properly. After installation work has been finished, be sure to give this instruction manual to the customer.

1. Package contents		
Before performing installation work, please check that all of the items listed below are included in the package.		
Item name	Model	Quantity
Power supply unit	MLS-HWS30-5/A	1
Printer unit	MLS-NP-2021A	1
Power supply mounting plate		1
Housing set for power supply		1
Housing set for ground		1
Housing set for printer		1
Clips		3
Power supply mounting plate screws		2
Power supply unit mounting screws		3
Housing set grounding screw		1
Binding bands		5
Mounting base		1
Waterproof sheet		1
Instruction manual		1
Installation work manual (this manual)		1

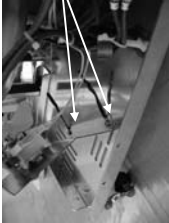
Items other than the power supply and printer units are in the same bag that enclosed this manual.

- 2. Mounting procedure**
Tools required:
Crosspoint screwdriver
Wire cutters
Tweezers or other narrow-tipped tool
- ①Switch off the main power and power switch.
Warning: Be sure to switch off the main power and power switch. Failure to do so may result in electrical shock when mounting the printer.
- ②Remove the back panel, right side panel, left side panel, and front panel.
Remove panels in order: Back panel -> Side panels (right, left) -> Front panel.



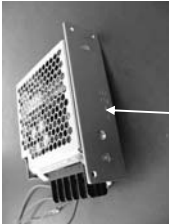
Note: On model MLS-3781, unhook the valve lead wire from the support before removing the left side panel.

③Attach clips to the fan mounting bracket. Remove the screws of the fan mounting plate temporarily, attach the clips in the two positions indicated below, and replace the screws.

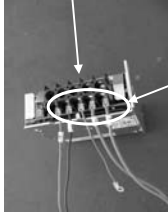


Clips

④Attach the power supply mounting plate and housing set to the power supply unit. Attach the mounting plate to the power supply using 2 screws. Attach the lead wires to the housing set by matching the label on the end of each wire with the terminal name to avoid performing wiring incorrectly.

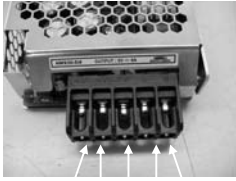


Power supply mounting plate



Note: Be careful not to wire incorrectly.

Note: Be careful of the direction at which wires come off the housing set.



Power supply unit terminal closure

⑤Mount the power supply unit on the chassis. When mounting the power supply unit, add a clip on the screw as indicated and tighten, and mount the power supply with a total of 3 screws. Attach the ground wire to the chassis.



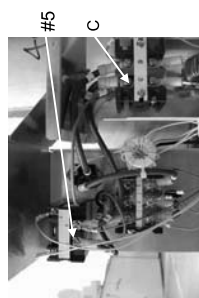
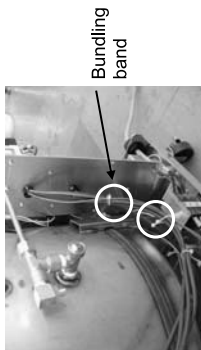
Ground wire

Clip

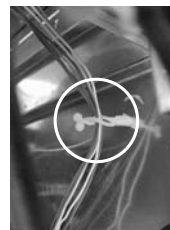
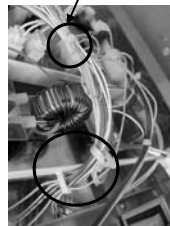
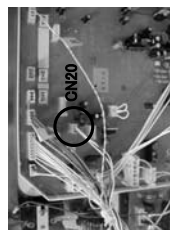


⑥Perform wiring of the housing set

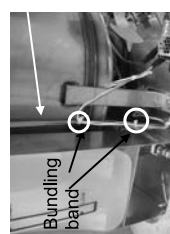
[Caution] On model MLS-3781, cut the housing set bundling bands at the bundling points before performing wiring. If the bands are not cut, lead lengths are insufficient. For the housing set for power supply which is the lead wires with ring terminals, perform wiring as shown, attaching to relay #5 and the terminal block C. Attach a bundling band at one point.



For the housing set for printer which is the long lead wires equipped with a connector, run it along the housing set (gray) of MLS and plug it into CN20 on the control board. Bundle with bundling bands at three points as photos show.



The housing set for printer is bundled with a clip bundling the housing set (gray) which is wired below the MLS chamber.



Note: On model MLS-3781, attach bundling bands near this area.

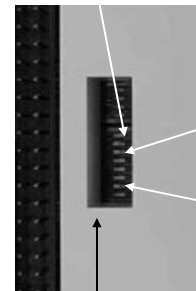
Attach the mounting plate to the fan mounting bracket and run the lead wires with the flat cable connector as shown in the photo below.



Mounting base:
Attach toward the bottom in the center of the fan mounting bracket.

⑦Perform printer settings.

There are switches (Dip SW) on the back side of the printer. Set switches 2, 6, and 7 on the left set of switches to ON. Check that all other switches are set to OFF. At the time of shipping, all switches are set to OFF.



⑧Insert the roll of paper.

Pressing the cover open button opens the printer cover. Set the paper in the printer properly referring to the photographs below.



Cover open button

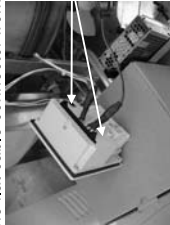
Note: Be sure a short length of the paper sticks out.

⑨Perform printer operation check.

Connect the flat cable connector to the printer. Switch on the main power and the power source switch. Press the Start button and then immediately press the Stop button.

If the printer is operating correctly, the model name, date, time, etc. will be printed out immediately after operation starts.

⑩ Detach the flat cable connector from the printer.



Note: Spreading out both sides will detach the flat cable connector.

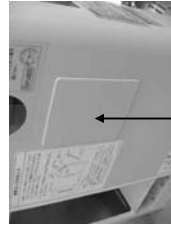
⑪ Attach waterproof sheets to the printer. Turn the printer around, and attach waterproof sheets on the left side, top, and the right side. Do not adhere to bottom.



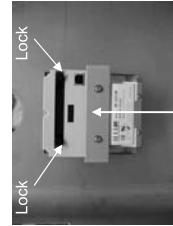
⑫ Attach the front panel to the printer.

Warning: Be sure to switch off the main power and power source switch. Failure to do so may result in electrical shock when mounting the printer.

Remove the front panel cover (2 screws), press the printer in from the front of the autoclave, and attach the mounting brackets and screws. When attaching, since there is a chance that the printer may fall, spread out a soft cloth, lay the front cover down on top of the futon, and attach it. Reconnect the flat cable connector to the printer so that the left and right locks engage.



Cover



Mounting bracket

⑬ Attach the front cover. Caution: When attaching the front panel, be careful not to pull on the lead wires. Pulling on the wires may lead to disconnection of the leads.



Note: Be careful not to pull on the wires

⑭ Attach the right side panel, the left side panel and the back panel. Caution: For MLS-3781, hook the valve lead wire to the support of the left side panel.

3. Operation check

- ① Turn on the main power and power source switch.
 - ② Open the lid and make sure the heating water is inside. If the water isn't enough, pour the water till the water level.
 - ③ Push SELECT button to select Instrument sterilizing course.
 - ④ Push START button to start the operation.
 - ⑤ Check the printer working properly.
- Caution: Elapsed time, sterilization temperature and pressure records will be printed out as the operation progresses.
- ⑥ Refer the instruction manual enclosed for the printer setting.

* About Settings after Installation of Printer *

After the installation of printer, the following settings must be done. Please refer to the following descriptions which are extracted from the instruction manuals.

●Printer setting items

①. Printing ON/OFF

Setting of whether operating status will be printed out. When set to OFF, operating status will not be printed out until this setting is set to ON again.

②. Printing interval during sterilization

Printing interval during sterilization can be set to either of 2 settings: every 2 minutes or every 5 minutes. When set to 5 minutes, because the number of printed lines is reduced, paper usage can be conserved.

③. Printing language/units

The combination of printing language and pressure units can be selected from 3 choices: Japanese/kilopascal (kPa), English/kilopascal (kPa), or English/psi. In countries using international units, kPa is mainly used, but in some cases the traditional psi is used.

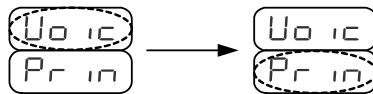
④. Printing density

The density of printed characters can be adjusted.

●Setting method

Printer settings are performed using the control panel of the MLS-3751 or 3781.

- ①. In standby status, press the Time button to display the time setting.
- ②. Press and hold the Time button and ▼ button for more than 2 seconds.
- ③. The voice guide setting/printer setting display is shown. Press the ▼ button to select printer settings.

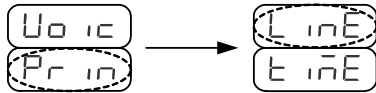


- ④. Select the setting item by pressing the ▼ or ▼ button, and press the Set/Confirm button.
- ⑤. Press the ▼ or ▼ button to change to the desired setting, and press the Set/Confirm button to store the setting. Pressing the Stop button returns to standby status without changing the setting. For details, refer to "5. Display and operation methods during setting" on the next page.

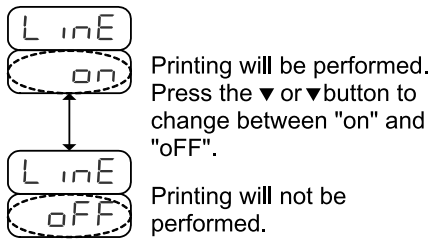
●Display and operation methods during setting

1) Printing ON/OFF

Press the Set/Confirm button. "Line" will blink.



Press the Set/Confirm button to change to the "on" (printing will be performed)/"oFF" (printing will not be performed) selection screen.

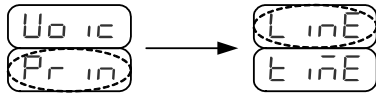


Press the Set/Confirm button to store the setting.

Set/Confirm button to store the setting.

3) Printing language/units

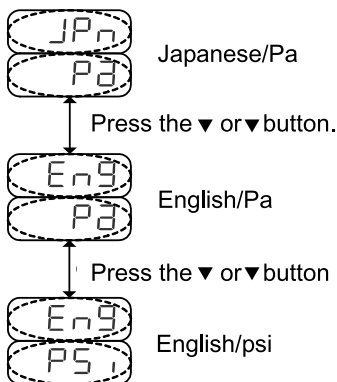
Press the Set/Confirm button. "Line" will blink.



Press the button twice. "LAng" will blink.



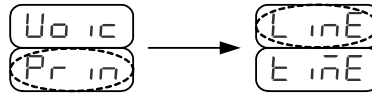
Press the Set/Confirm button to change to the language and units selection screen.



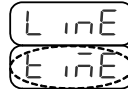
Press the Set/Confirm button to store the setting.

2) Printing interval during disinfection

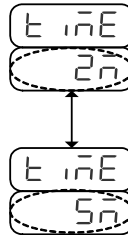
Press the Set/Confirm button. "Line" will blink.



Press the button. "tiME" will blink.



Press the Set/Confirm button to change to the "2M" (2-minute interval)/"5M" (5-minute interval) selection screen.



Printing interval: 2 minutes

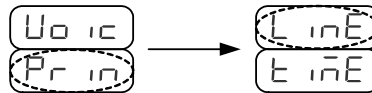
Press the ▼ or ▼ button to change between "2M" and "5M".

Printing interval: 5 minutes

Press the Set/Confirm button to store the setting.

4) Printing density

Press the Set/Confirm button. "Line" will blink.



Press the button three times. "Pcon" will blink.

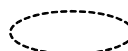


Press the Set/Confirm button to change to the printing density setting screen.

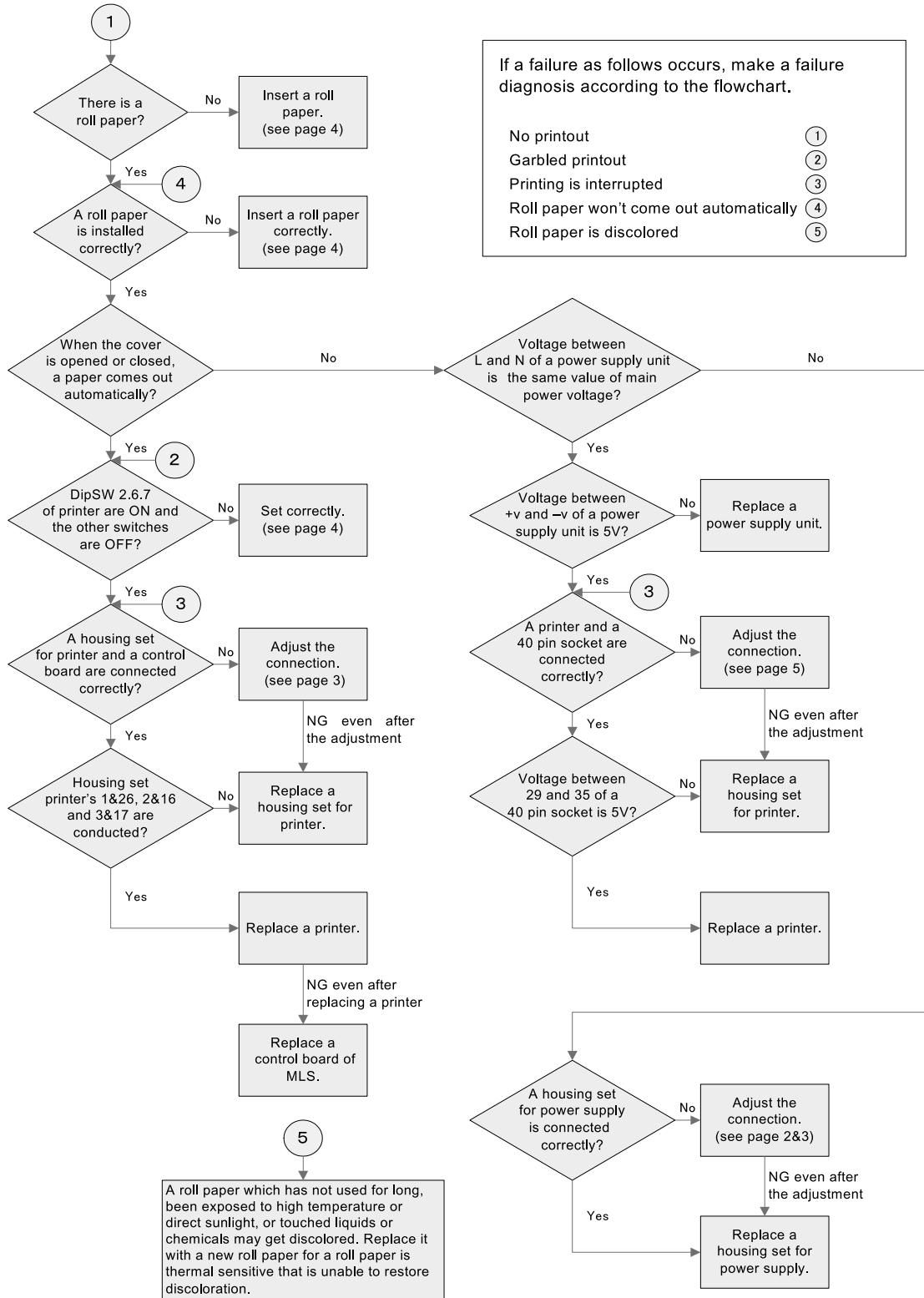


Press the ▼ or ▼ button to select the setting from 65 to 130. Higher numbers increase printing density.

Press the Set/Confirm button to store the setting.

 indicates blinking display.

Failure Diagnosis



Object Temperature Sensor Set
Model No.: MLS-375B <for MLS-3751, 3751L, 3750 (N), MLS-3781, 3781L and 3780 (N)>

Carry out the installation work properly according to the manual.
 Give this manual to customer after the installation work.

1. Contents in Container Box

Before the installation work, check that the following parts are contained in the box.

(Part Name)	(Qty)
Object temperature sensor set	1
Instruction manual	1
Instruction manual for Installation work	1
Binder	2

2. Object Temperature Sensor Installation

① Turn OFF the power supply to the unit.

② Detach the back plate.

For MLS-3751, MLS-3751L and MLS-3750(N) : 9 screws

For MLS-3781, MLS-3781L and MLS-3780(N) : 11 screws

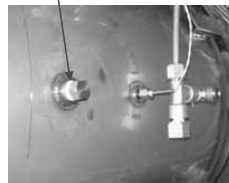
③ Detach the right side plate (9 screws)

④ Remove the stopper bolt.

[Note] Since the removed stopper bolt will be needed for use with the object temperature sensor being removed, give it to customer and ask for keeping it.

⑤ Install the temperature sensor.

Apply sealing tape around the connection. (3~4 turns)



Stopper bolt



Object temp. sensor

⑥ Insert the connector in the TH2 display section of the control PCB and bind up excess wires.



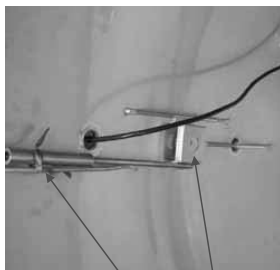
Connector for object temp. sensor

3. Temperature Adjustment

Adjust the temperature at three levels:

105°C, 121°C or 135°C.

① Fix the object temperature sensor by wires and binders so that the tip of the object temperature sensor comes close to the protection metal of the <Side Thermistor (TH1)>.



Fix.

Temp. sensor <Side Thermistor (TH1)> protection metal

② Set the power supply switch to "I (ON)" and close the lid.

③ Set the mode to test mode.

● Press the "START" while pressing the "▲" and "SET/CONFIRM" at the same time. (For about 2 sec.)

● No later than 5 sec. after "Beep" sound is heard, press the "START" while pressing the "▲" and "▼" at the same time. (For about 2 sec.)

? "Test mode will start when the "STOP" is pressed.

[Note] When the "▲" and "SET/CONFIRM" are pressed, the settings may be changed. In this case return to the original settings.

④ Press the "SELECT" button to select the "Instrument Sterilization".

⑤ Press the "SET/CONFIRM" and set the sterilization temperature at 105°C and the sterilization time at 60 min.

Leave the exhaust temperature and exhaust rate as they are.

⑥ Make sure that the object temperature button is OFF.

⑦ Start the operation. (Press the "START" button twice.)

4. Adjustment of Temperatures

● When the sensor temperature has reached the sterilization temperature, leave the unit standing for about 5 min. and then adjust the temperature.

● When the "SELECT" button is pressed, the adjustment mode changes.

● While the "TIMER" button is pressed, the following lamps light up and which mode is selected is known.

While the "TIMER" is pressed, adjustment mode can be identified.	
① "EXHAUST RATE" lights up . . .	Temp. sensor <Side Thermistor (TH1)> adjustment mode
② "TIMER" lights up . . .	Object sensor? [TH2] adjustment mode
③ "LEFT" . . .	Temp. sensor <Bottom Thermistor TH3> adjustment mode
④ Nothing lights up . . .	Pressure sensor adjustment mode
Each time the "SELECT" button is pressed, adjustment mode changes in the order as follows: ①→②→③→④→①	

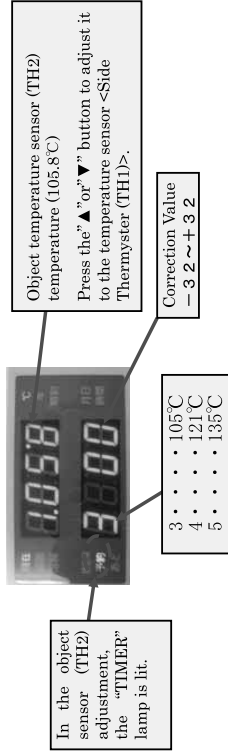
● Press the "SELECT" twice to select the object temperature sensor (TH2) adjustment mode

①Adjustment of 105℃

- When the "TIMER" is kept pressed, the object temperature sensor (TH2) temperature is displayed.
- When you let go of the "TIMER" button, the temperature sensor <Side Thermyster (TH1)> temperature is displayed.
- When the "▲" or "▼" button is pressed with the "TIMER" button being kept pressed, the object temperature sensor (TH2) temperature changes.

▲ button . . . Temperature lowers.
▼ button . . . Temperature rises.

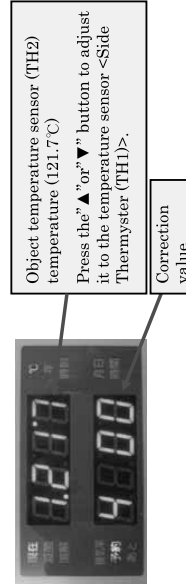
- Adjust the temperatures of the object temperature sensor (TH2) and the temperature sensor <Side Thermyster (TH1)> by pressing and let go of the "TIMER" button.



- After the adjustment of the object temperature sensor (TH2) temperature, when the "START" is pressed with the "TIMER" being kept pressed, the data is written in memory. At this time, the buzzer sound "Beep" is issued for information.

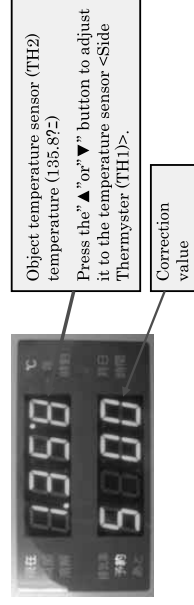
②Adjustment of 121℃

- Press the "SET/CONFIRM" button and set the temperature to 121℃. Buzzer sound "Beep" is issued for information.
- When the sensor temperature has reached the sterilization temperature, leave the unit standing for about 5 min.
- When the "▲" or "▼" button is pressed with the "TIMER" button being kept pressed, the object temperature sensor (TH2) temperature changes.
- Adjust the temperatures of the object temperature sensor (TH2) and the temperature sensor <Side Thermyster (TH1)> by pressing and let go of the "TIMER" button.
- When the "START" is pressed with the "TIMER" being kept pressed, the data is written in memory. At this time, the buzzer sound "Beep" is issued for information.



③Adjustment of 135℃

- Press the "SET/CONFIRM" button and set the temperature to 135℃. Buzzer sound "Beep" is issued for information.
- When the sensor temperature has reached the sterilization temperature, leave the unit standing for about 5 min.
- When the "▲" or "▼" button is pressed with the "TIMER" button being kept pressed, the object temperature sensor (TH2) temperature changes.
- Adjust the temperatures of the object temperature sensor (TH2) and the temperature sensor <Side Thermyster (TH1)> by pressing and let go of the "TIMER" button.
- When the "START" is pressed with the "TIMER" being kept pressed, the data is written in memory. At this time, the buzzer sound "Beep" is issued for information.



5. When the adjustment is over, press the SET/CONFIRM button and set the sterilization time to 0 min.
Proceed to the cooling process and decompress the chamber inside.
6. The lid can be opened when the temperature inside the chamber lowers down to 74℃ (64℃ for liquid sterilization) .
7. Remove the wires and binders that fix the object temperature sensor in the chamber.
8. Set the power supply switch to ?t (OFF) and cancel the test mode.
9. Attach the right side plate and back plate.