

INSTRUCTION MANUAL NO.	
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REV.	D

1.0mm PITCH I/O 120P

IDT TOOL

(Tool Number of A-IDT Tool: 57833-5000)
(Tool Number of B-IDT Tool: 57848-5000)

OPERATING MANUAL



Molex Japan Co., Ltd.

Molex Japan Co., Ltd.		Contents of Update	Instruction Manual No.	IS-8021E
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Rev.	Issued	Description		
0	1995/08/05	New creation release. ECN-JM60025		
A	1997/04/15	Revised by using the hold block to the A-IDT tool. ECN-JM70005		
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<Safety Precautions>

Please read the following before operating the tool.

1. Introduction

Thank you for choosing our **1.0mm Pitch I/O 120P IDT Tool**.

This instruction manual is prepared so that the tool is properly used. Please take the time to read this manual, making sure you understand the operating procedures described herein before attempting to operate the tool.

2. To operation supervisors

- 1) Operators should fully understand the contents of this manual before operation.
- 2) If operators do not understand English, translate this manual into the proper language.
- 3) Keep this manual near the tool so that operators can refer to it anytime.

3. Dangerous operations

Observe the following precautions to prevent a life-threatening accident.

- 1) Don't insert a part of your body or other foreign materials into the tool when you are using the lever of a tool
- 2) Don't place the tool on an unstable, off-balanced worktable from which the tool might fall down.
- 3) If more than two operators are engaged in operation or checkup at the same time, even slight miscommunication might lead to a serious accident.

Caution

- 1) Unauthorized reproduction of this document in part or in whole is prohibited.
- 2) The contents of this document are subject to change without notice.
- 3) Molex Japan Co., Ltd. assumes no responsibility for losses resulting from use or misuse of this document.

<Safety Precautions>

Please read the following before operating the tool.

4. Careful handling

Keep the items below to use the tool safely and properly.

* Please contact our application-tooling group if something's wrong with the tool.

1) Tool malfunctions

If you notice any unusual sound or movement in the tool, stop the operation immediately and check the suspicious parts.

2) Foreign materials entering

If foreign materials such as water or metals accidentally get inside the tool, stop the operation immediately and remove those materials.

5. Installation site

Be careful about the following items when you install the tool.

1) Temperature and humidity

Don't operate the tool in extremely high/low temperature or extremely high humidity.

* Place it where the temperature is stable around 23 degrees centigrade and the air is well ventilated.

2) Dust and corrosive gas

It will become the cause of failure if dust, corrosive gas, etc. are in the circumference of this tool.

* Please don't install this tool to such a place.

3) Unstable work table

When this tool is set up in an unbalance worktable, it not only becomes a dangerous operation but also there is a case to cause the tool damage and it is dangerous.

* Please fix the tool on a stable table horizontally.

<Quality Precautions>

You surely carry out the following for defect-free production.

1. Introduction

In order not to produce a defective article with this tool, this chapter has described “Must be carried out”, and “Must not be carried out” as an important matter on operation.

Keep in mind that there is a possibility that a defective article will be produced when not protecting this.

2. Must be carried out

Please be sure to perform the following matter to maintain product quality.

1) Enforcement of startup check

Please check the tool in accordance with the “startup checklist” described in this document before an operation start, and start operation after confirming nothing is wrong with the tool.

* If the check is neglected, there is a possibility that a defective article will be produced.

2) Confirmation of quality

Please start the production after confirming the quality of a product picked up from the first operation, and it passes all of the claims required in the ITD (termination) specifications and the I/O harness drawing of a corresponding connector.

* It is recommended to initiate the operation on the preferable condition that enough margins for the standard are identified.

3. Must not be carried out

Please don't perform the following matter by any means to maintain product quality.

1) Too much deeply termination of upper cover

Termination of the upper cover too much deeply is a cause the damage of the plug sub-assembly and the upper cover, and it is a prohibition.

* Please terminate by the termination height of the standard (Tool bottom dead point size).

2) Set mistaken of upper cover

The upper cover and the plug are damaged when terminating in the state to make a mistake in the direction of the upper cover, and it is a prohibition.

* Please terminate after setting the upper cover in a specified tool in a prescribed direction.

1. Description

This tool is a manual IDT (termination) tool that is used to terminate the upper cover arranged wires to a plug in the cable assembly process of 1.0mm pitch I/O 120P of Molex.

As the procedure, the upper cover B is terminated to the inside of a plug in the beginning by “B-IDT tool”, and, next, the upper cover A is terminated to the outside of the plug by “A-IDT tool”.

As the termination work, the upper cover is pre-locked to a plug, and it is set on the table. The termination is executed by depressing the handle of the tool after the table is pushed in the tool.

2. Tool Configuration and Applicable Products

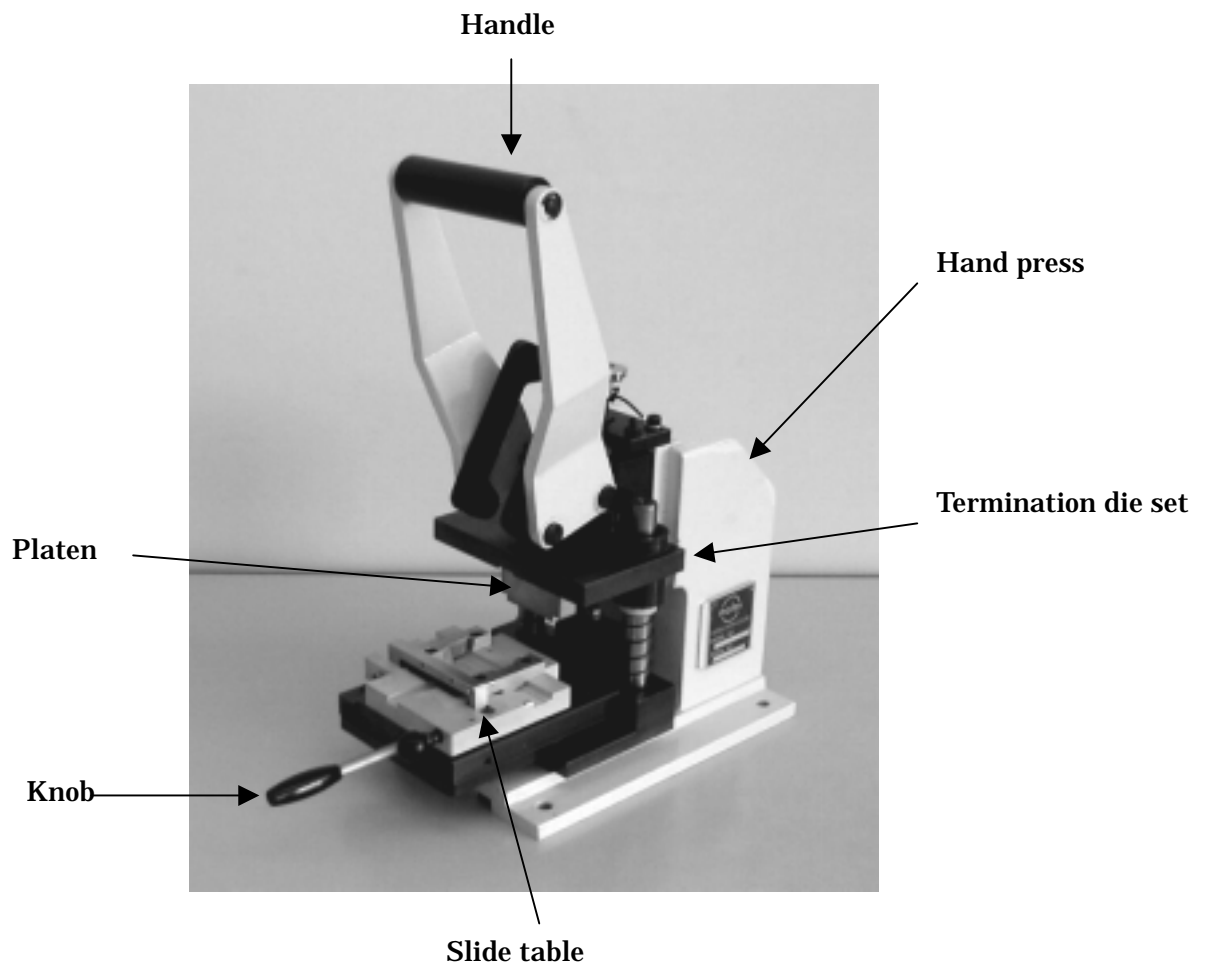
2.1. Tool Name and Configuration

- | | |
|--------------------------|--|
| 1) Tool name and number: | (1) 57833-5000: 1.0mm Pitch I/O 120P A-IDT Tool
(2) 57848-5000: 1.0mm Pitch I/O 120P B-IDT Tool |
| 2) Tool configuration: | (1) Slide table
(2) Hand press
Toggle system (Maximum termination force: 600kgf or more) |

2.2. Applicable Connector and Cable

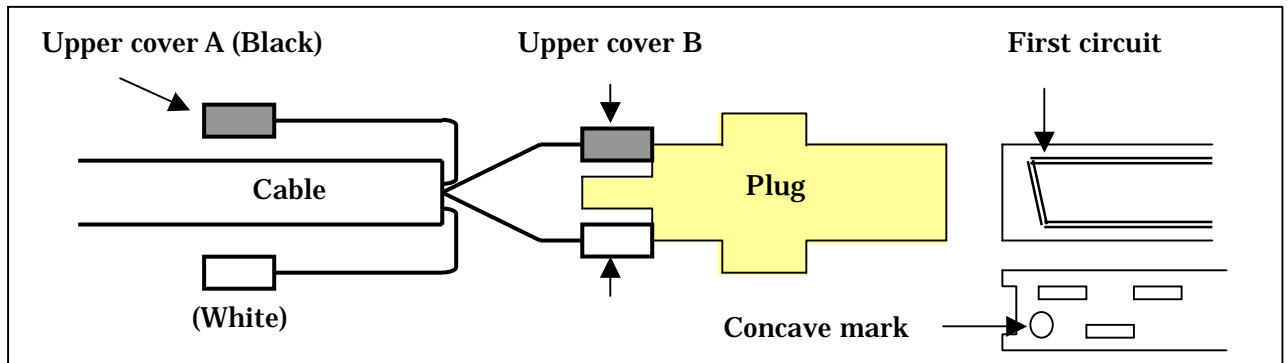
- | | |
|---------------|---|
| 1) Connector: | Molex 1.0mm pitch I/O 120P connector
53584-1201: Plug Housing Sub-Assembly
53577-1200: Upper Cover A (White)
53577-1201: Upper Cover A (Black)
53578-1200: Upper Cover B (White)
53578-1201: Upper Cover B (Black) |
| 2) Cable: | UL20276, #28 AWG, Multi-pair braid shielded cable or other Molex quality cables.
Insulation diameter = ϕ 0.58mm,
Cable outer diameter = ϕ 14.0mm or less |

2.3. Tool Appearance and Unit Name

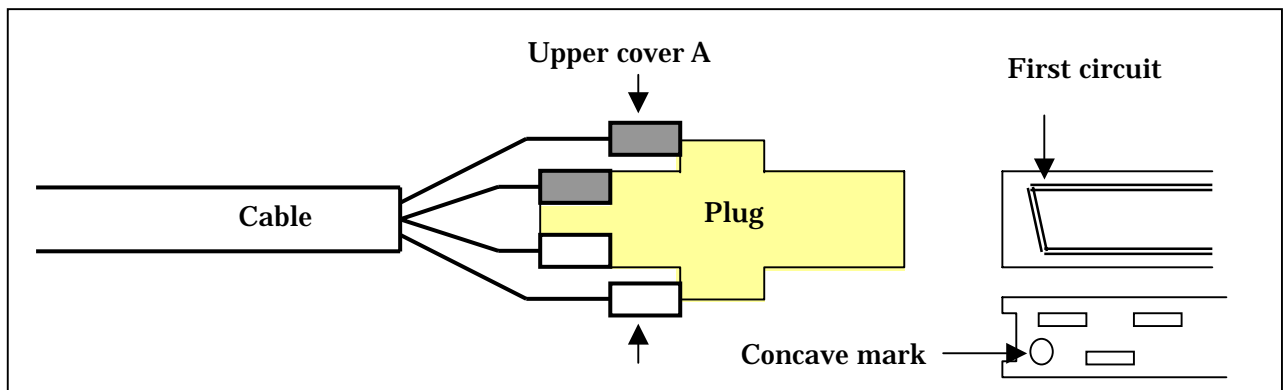


2.4. Order of Termination

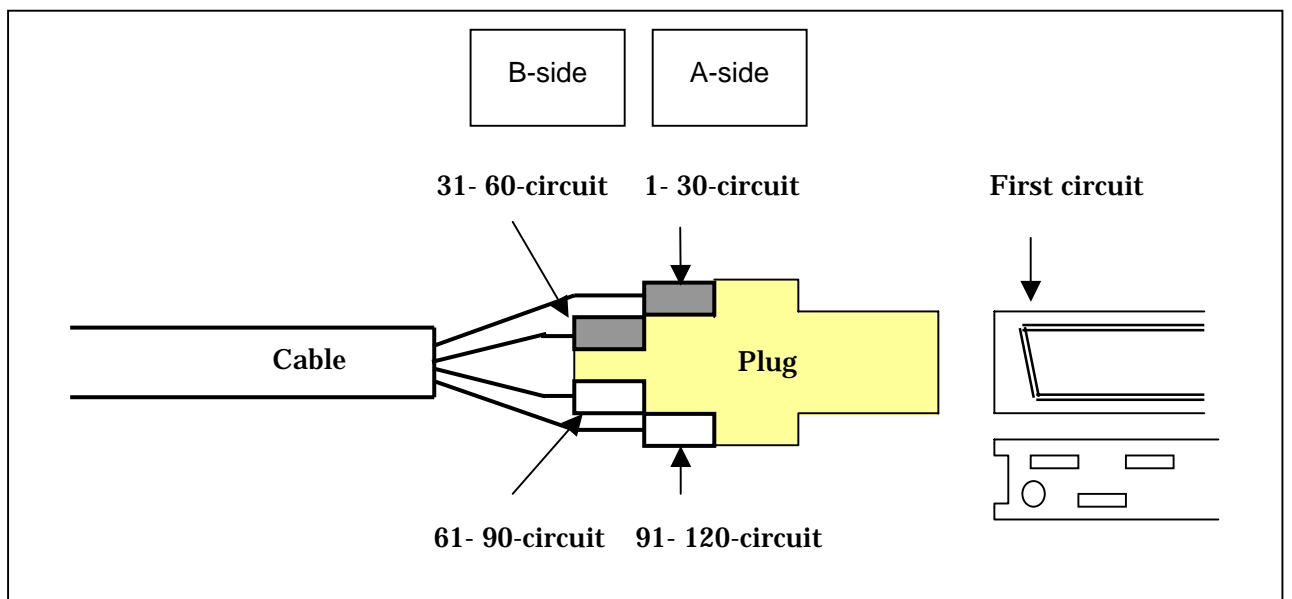
1) Termination of Upper Cover B



2) Termination of Upper Cover A



2.5. Circuit Number Assignment



3. Specifications

3.1. Tool Specifications

- 1) **Pre-lock of upper cover:** The upper cover that arranges the wire is pre-locked to the plug by the hand before termination.
- 2) **Termination:** The slide table that sets the plug is pushed into the tool and the termination is executed by depressing the tool handle.
[Order of termination]
(1) Termination of B-side, (2) Termination of A-side
- 3) **Termination method:** It is the termination method that bumps the platen to the work set guide on the slide table by depressing the handle of the tool.
- 4) **Termination height:** The termination height is managed by the bottom dead point size of the tool.
* The bottom dead point size of the A-IDT Tool and the B-IDT Tool is different.
- 5) **Bottom dead point gauge:** It is the accessory of a tool and used when the bottom dead point size of the tool is measured.

3.2. External Dimensions and Weight

- 1) **External dimensions:** 180 (width) x 380 (depth) x 440 (height) mm
- 2) **Weight:** Approx. 16 kgf

3.3. Operating Environment Conditions

- 1) **Operating ambient temperature:** 5-35 degrees centigrade (Away from direct sunlight)
- 2) **Operating ambient humidity:** 35%-85% RH (No condensation)
- 3) **Operating atmosphere:** Atmosphere should be free of corrosive gases and contaminants such as dust or lint.

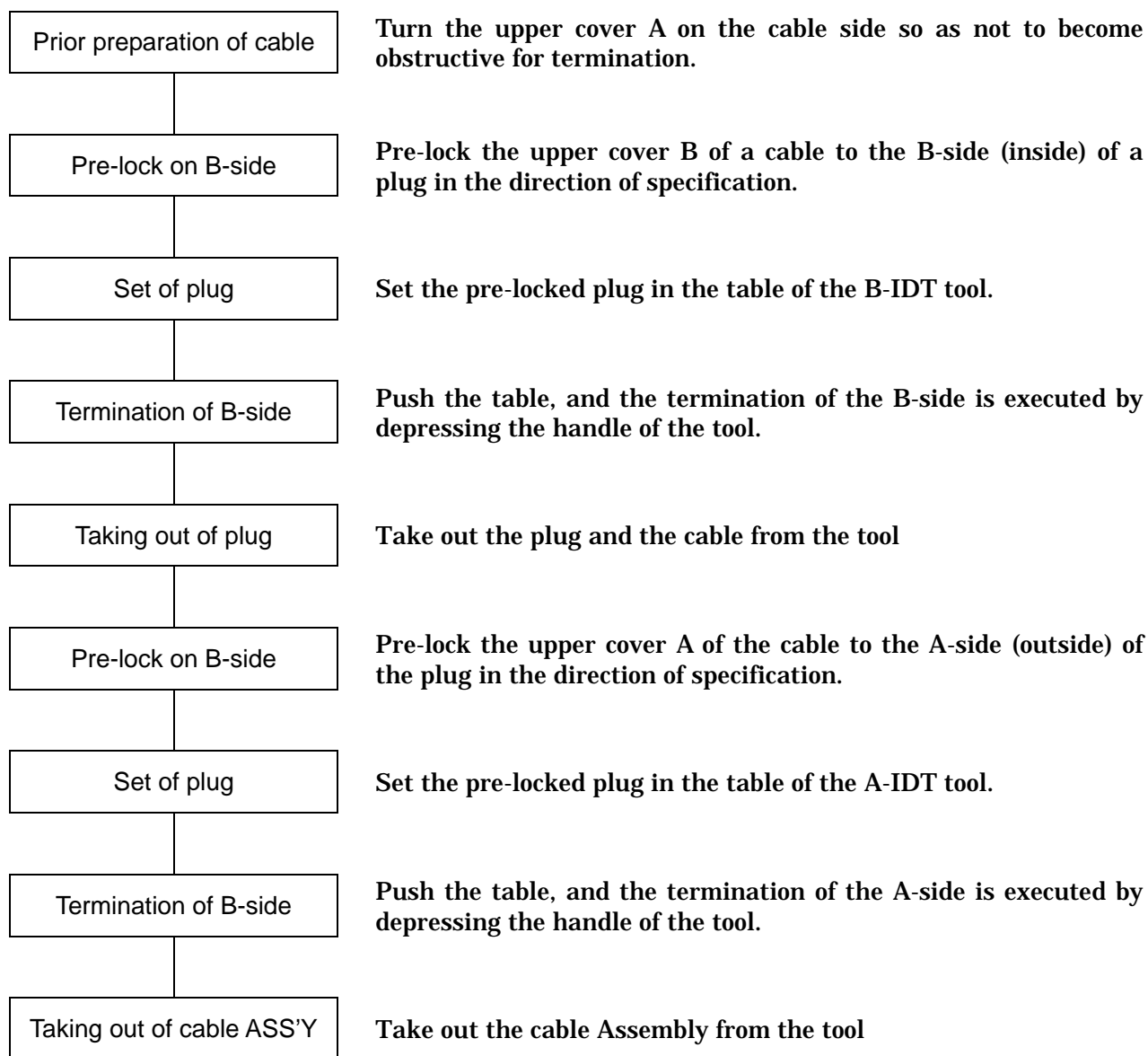
3.4. Installation Space

Tool installation space on a worktable required for the purposes of performing operation and maintenance checkups.

900 (width) x 900 (depth) x 1600 (height) mm

4. Operation Method

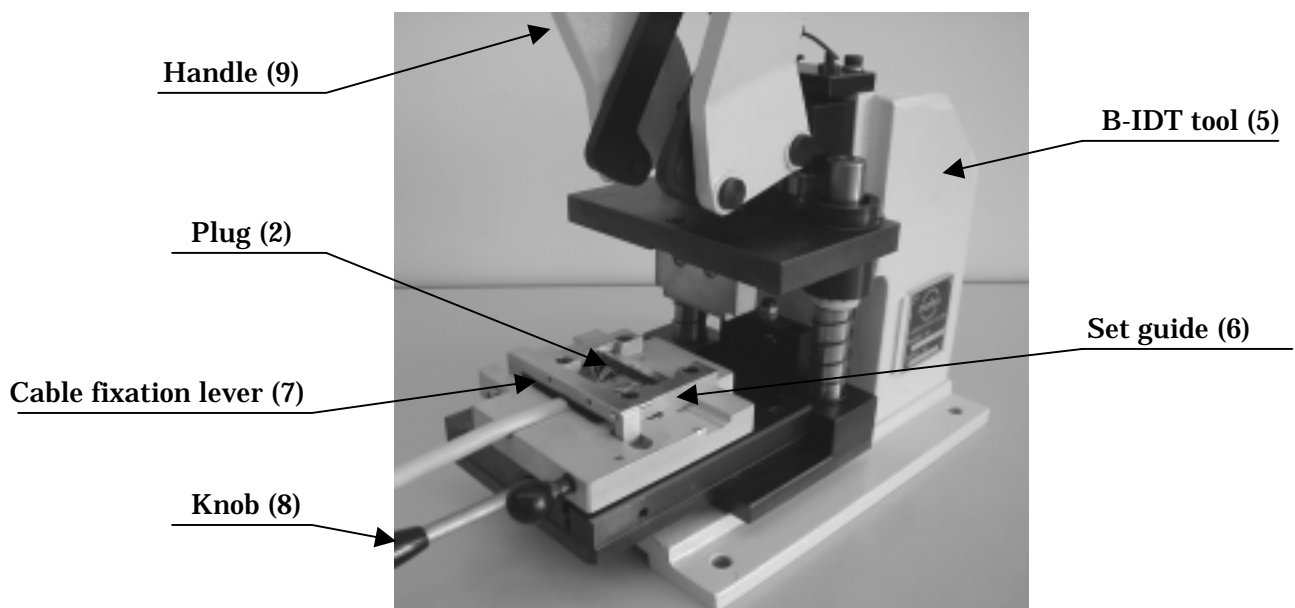
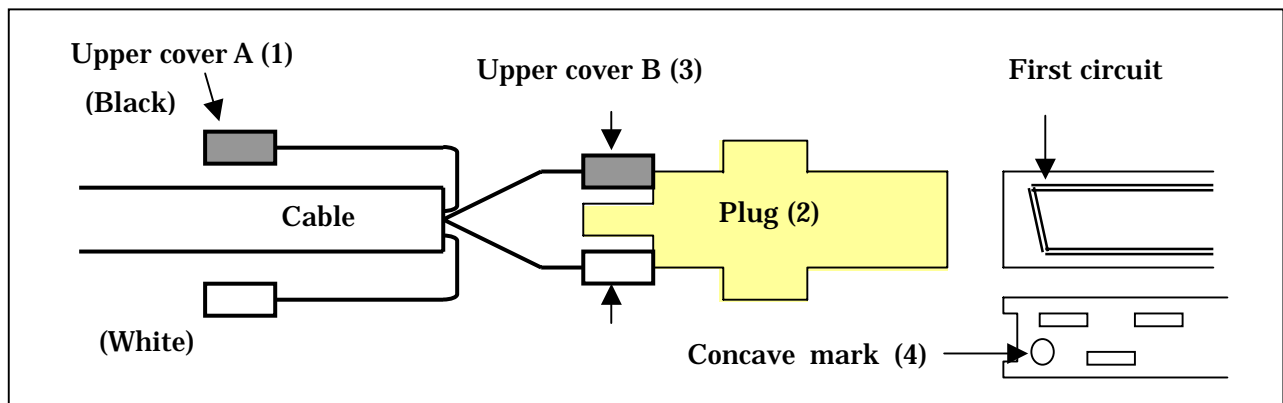
4.1. Termination Procedure



4.2. Termination of Upper Cover B

- 1) Turn the “upper cover A (1)” on the cable side so as not to become obstructive for termination.
- 2) Set the “concave mark (4)” of the “upper cover B (3)” to the first circuit number side of the “plug (2)”, and pre-lock it to the “B-side” (inside).
- 3) Next, set the pre-locked “plug (2)” in the “set guide (5)” of “B-IDT tool (6)”, and fix the cable with the “cable fixation lever (7)”.
- 4) Grip the “knob (8)” of the table by one hand, push it into the interior of the tool completely, and the termination of the B-side is executed by depressing the “handle (9)” of the tool to the operation edge by the hand on the other side.

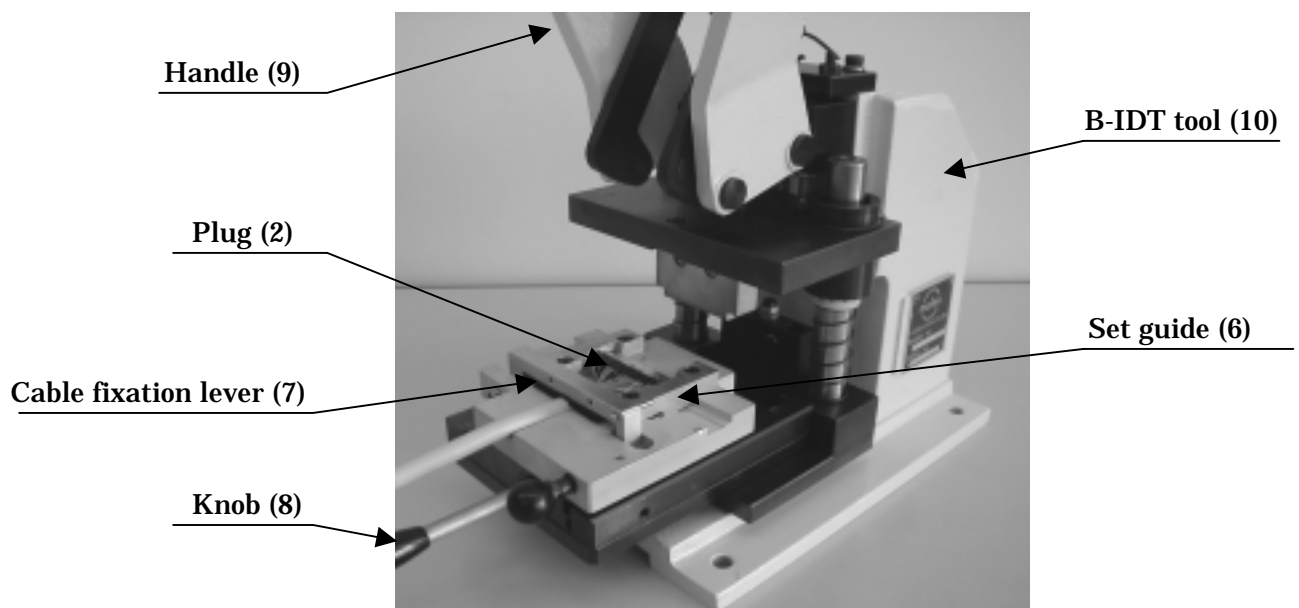
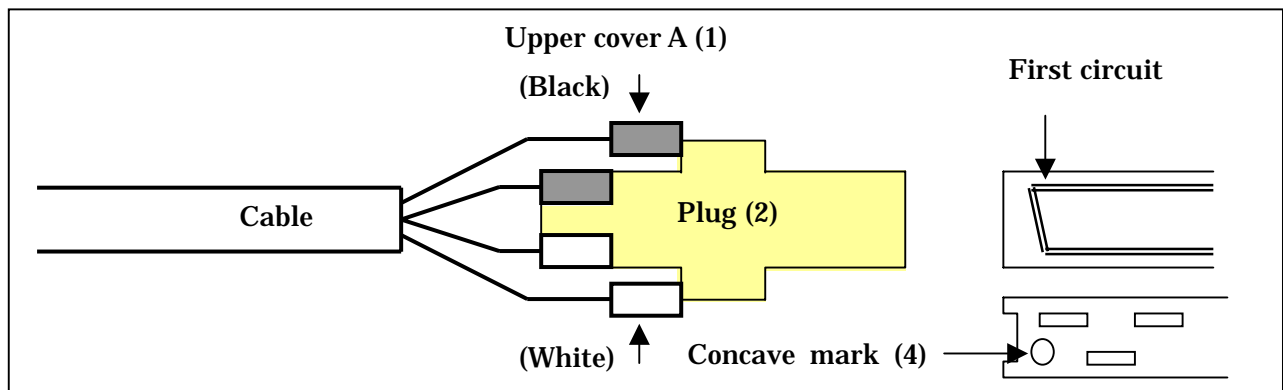
“Note” Please put each hand on the “knob” and the “handle” of the tool without fail for safety and operate it.



4.3. Termination of Upper Cover A

- 1) Take out the plug and the cable from the B-IDT tool
- 2) Set the “concave mark (4)” of the “upper cover A (1)” to the first circuit number side of the “plug (2)”, and pre-lock it to the “B-side” (inside).
- 3) Next, set the pre-locked “plug (2)” in the “set guide (6)” of “A-IDT tool (10)”, and fix the cable with the “cable fixation lever (7)”.
- 4) Grip the “knob (8)” of the table by one hand, push it into the interior of the tool completely, and the termination of the A-side is executed by depressing the “handle (9)” of the tool to the operation edge by the hand on the other side.

“Note” Please put each hand on the “knob” and the “handle” of the tool without fail for safety and operate it.

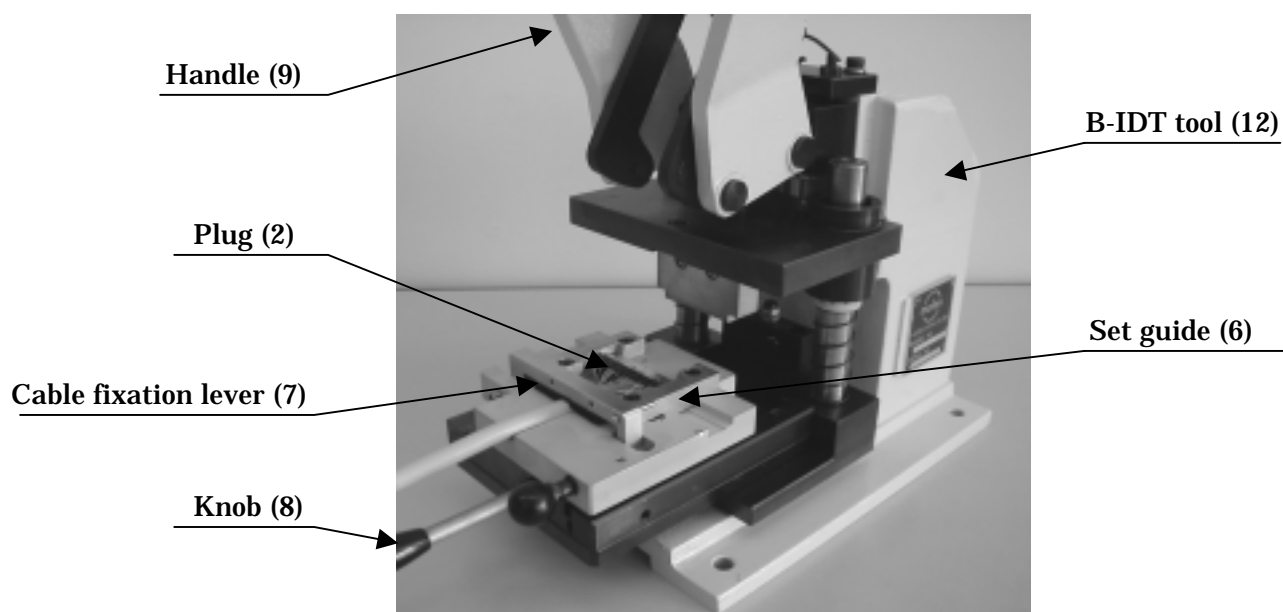
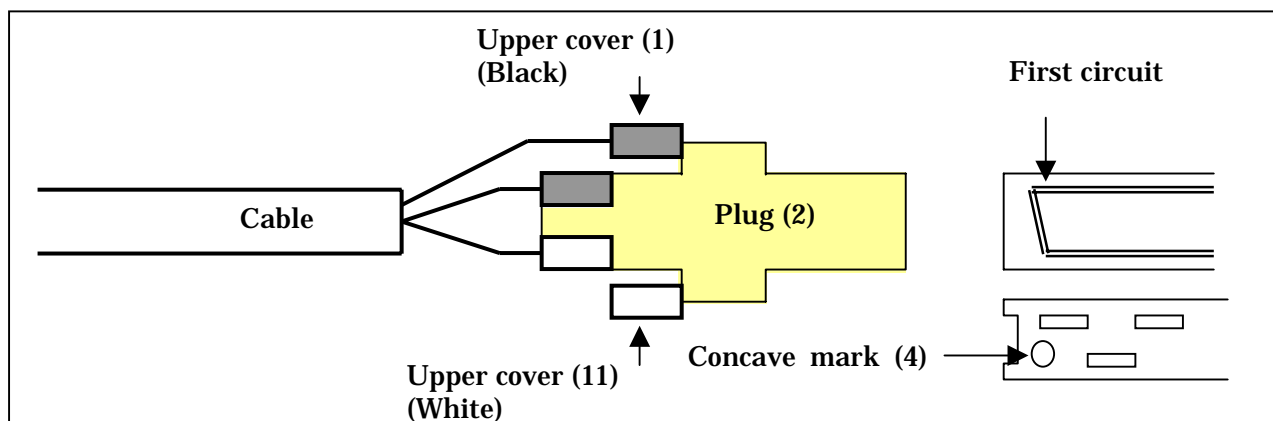


4.4. Termination of Upper Cover A Without One side Wire

It is a termination procedure for there is no wire arrangement in the one side of A-row. (The wire is not in 91- 120-circuit)

- 1) Pre-lock the upper cover A of the cable to the first circuit number of the “plug (2)”, and pre-lock only an “upper cover A (11)” in the other side.
- 2) Next, set the pre-locked “plug (2)” in the “set guide (6)” of “A-IDT tool (12)”, and fix the cable with the “cable fixation lever (7)”.
- 3) Grip the “knob (8)” of the table by one hand, push it into the interior of the tool completely, and depress the “handle (9)” of the tool to the operation edge by the hand on the other side and the termination of the A-side is executed.

“**Note**” Please note that the bottom dead point size of the tool is different from the tool usually.



5. Maintenance and Check

5.1. Daily Maintenance

1) Management of tool

Before a work start, please carry out the tool check in accordance with the “startup checklist” in this manual, and start work after checking that it satisfies a standard.

* Please record each check result simultaneously.

2) Removal of foreign substances

Since foreign substances such as dust and wire scrap adheres to the “set guide”, and “platen”, etc. during operation, please remove a foreign substance timely.

* Neglect may become the cause of a defective termination.

3) Cleaning of work end

Please wipe with a dry cloth lightly after cleaning the tool with compression air every day at the time of a work end. There is an effect that prevents rusting.

4) Lubrication

Please supply proper amount of “Lithium family grease” (JIS No. 2) to the shaft of a die set and the ram of a hand press with the frequency of once a month.

5.2. Check of Tool

Please reconfirm the standard value with 1.0mm pitch I/O 120P IDT (termination) specifications of the latest version before it works.

1) Bottom dead point size of tool

The bottom dead point size of the tool must be in the standard value.

<Standard> Bottom dead point size of A-IDT tool = $10.8 \pm 0.05\text{mm}$

Bottom dead point size of B-IDT tool = $7.8 \pm 0.05\text{mm}$

(Special) Bottom dead point size of A-IDT tool without one side wire
= $10.65 \pm 0.05\text{mm}$

2) Lock of upper cover

The terminated upper cover must be locked to the plug surely.

3) Damage of connector

There must be neither crack nor remarkable damage of the plug and the upper cover by termination.

4) Platen surface

Neither damage nor the foreign substance must adhere on the termination side surface of the platen.

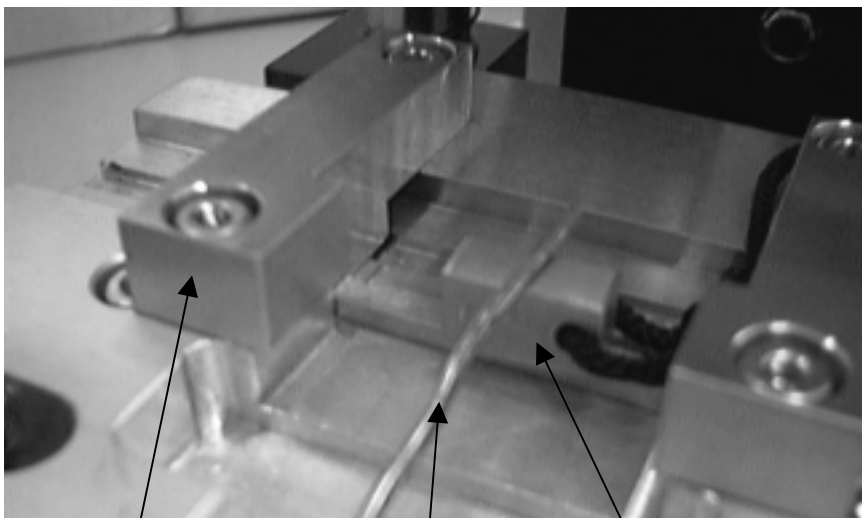
5.3. Measurement Method of Tool Bottom Dead Point Size

- 1) Arrange the “bottom dead point gauge (1)” of the attachment to the termination position in the “set guide (2).” (The sculpture character is made the front)
- 2) Arrange the “string solder (3)” (about $\phi 2.0$ - $\phi 2.5$ mm) on the “bottom dead point gauge (1)” and terminate it.
- 3) After terminating, measure the thickness of the “bottom dead point gauge + string solder” with calipers.
- 4) Measurements must meet the following standard.

<Standard> Bottom dead point size of A-IDT tool = 10.8 ± 0.05 mm

Bottom dead point size of B-IDT tool = 7.8 ± 0.05 mm

“Note” Please note that the accurate size cannot be measured when solder is too thin.



Set guide (2)

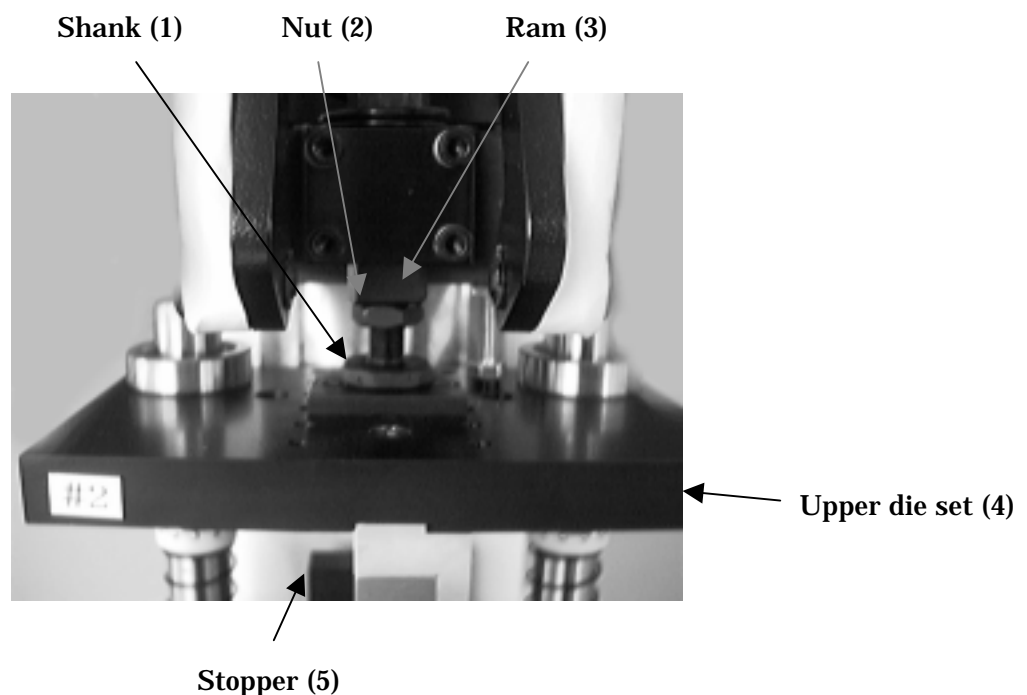
String solder (3)

Bottom dead point gauge (1)

5.4. Adjustment Method of Tool Bottom Dead Point

- 1) Loosen the “nut (2)” of the “shank (1)” on the hand press and adjust the bottom dead point of the wire pusher turning the “shank (1).” Tighten the nut after it adjusts and the shank is fixed to the “ram (3).”
- 2) Amount of adjustment and direction
 - “Amount of adjustment”
One scale = about 0.17mm (One rotation =1.0mm)
 - “Direction of adjustment”
The wire is deeply pushed: Shank is turned left.
The wire is shallowly pushed: Shank is turned right.
- 3) The “stopper (4)” is adjusted in the position with the space of 0.5mm from the “upper die set (5)” at the bottom dead point of the tool.
 - * The stopper is for interference prevention of the upper and lower when the die set is removed from the hand press.

“Note” Please start the work after confirming without fail that the tool bottom dead point size meets the standard after adjustment.

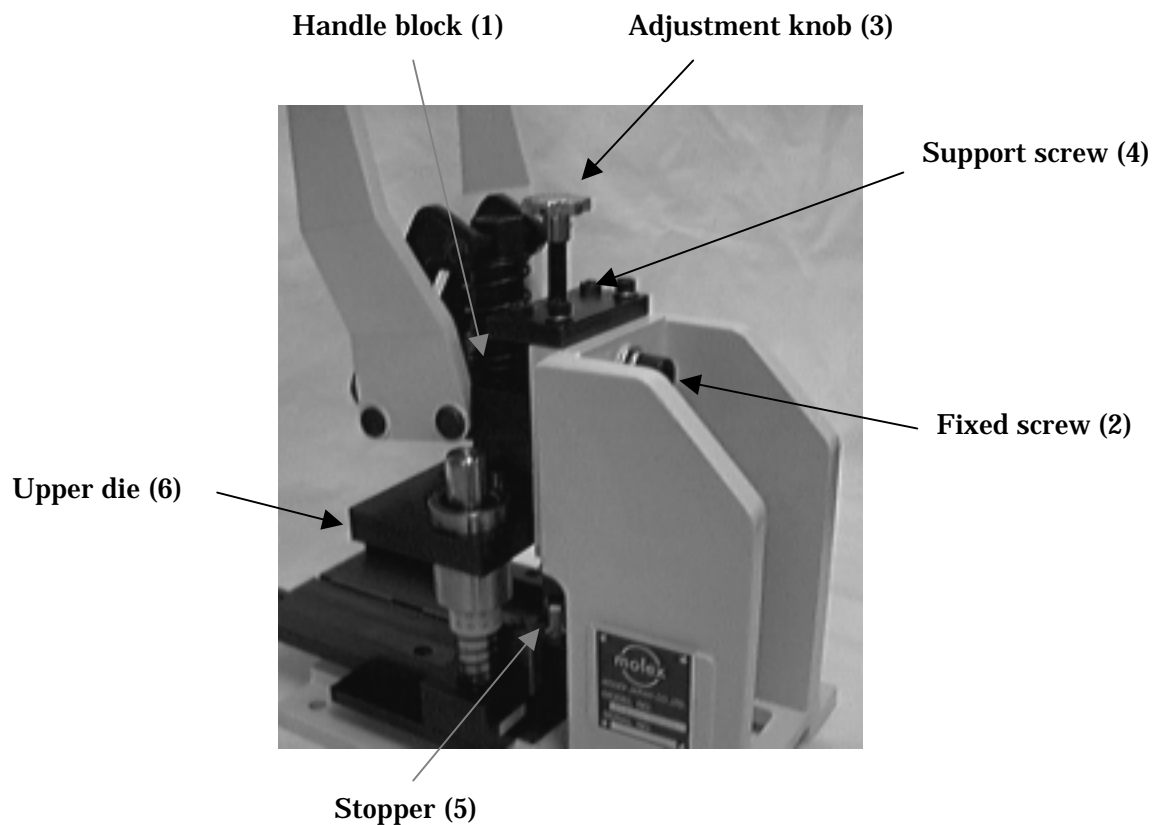


5.5. Adjustment Method of Hand Press Bottom Dead Point

When the adjustment of the bottom dead point is not good enough by the shank alone, the bottom dead point of the main body of the hand press is adjusted according to the following procedure.

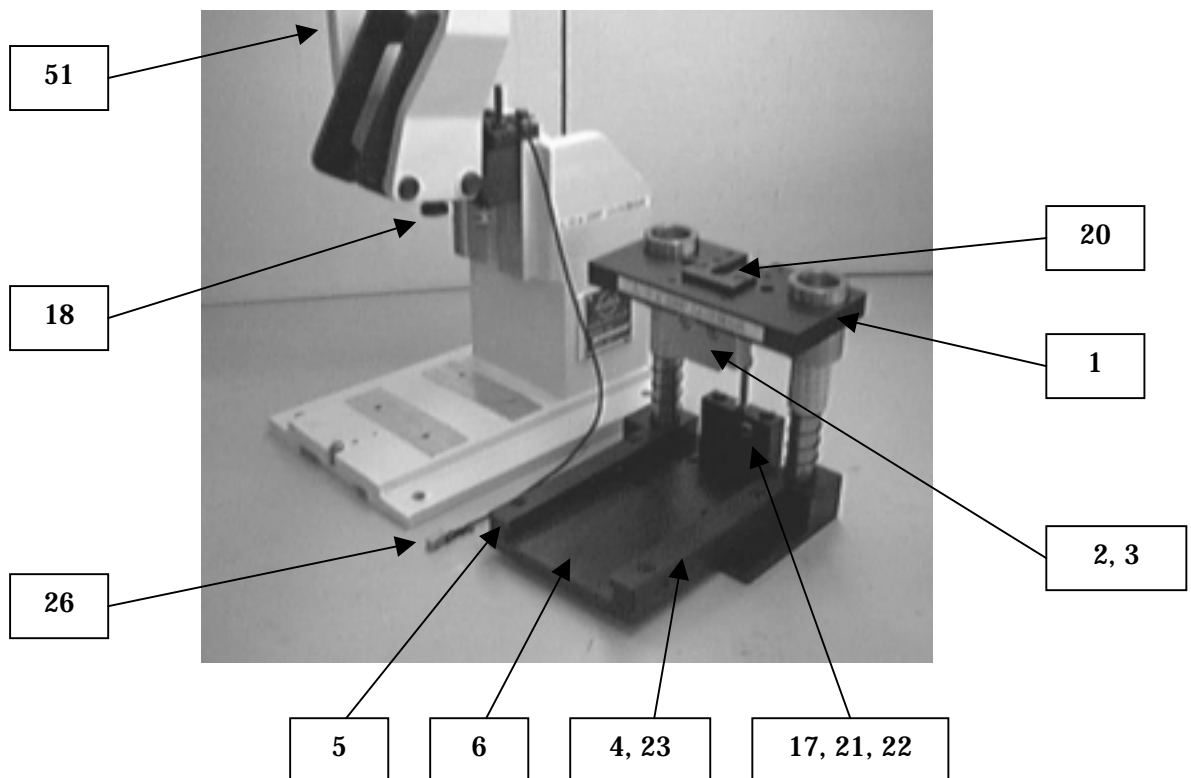
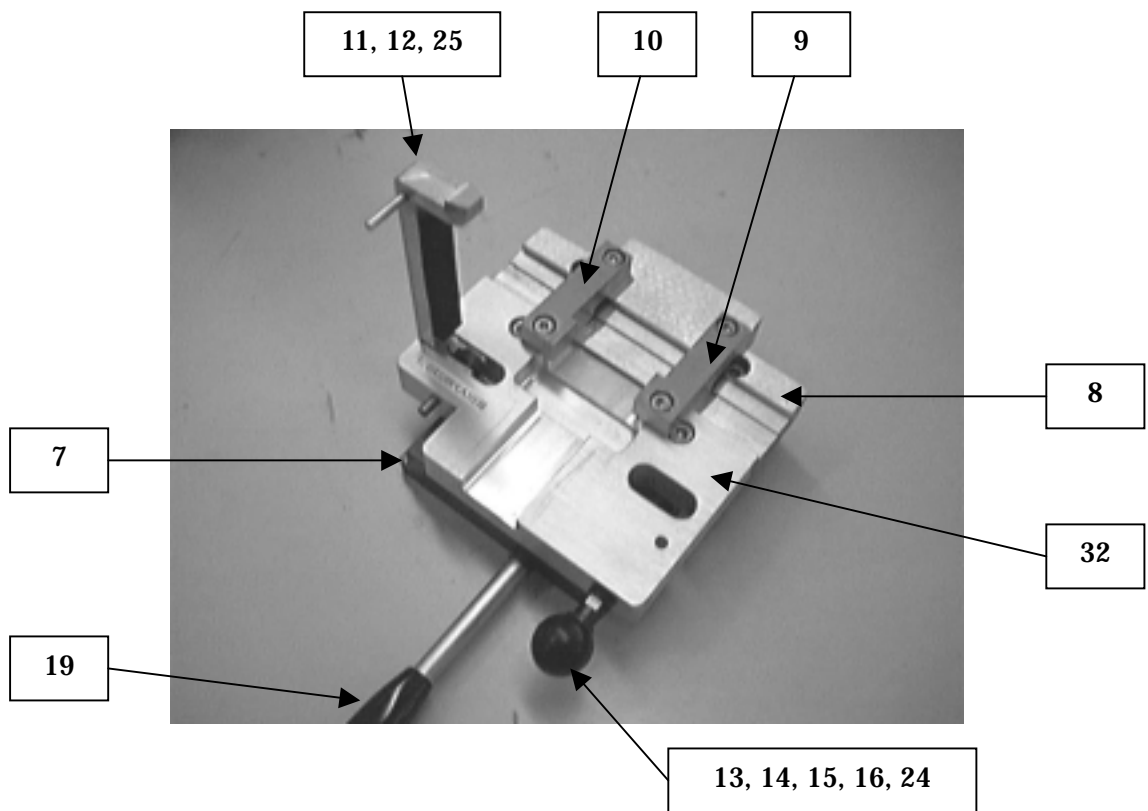
- 1) Loosen the “fixed screw (2)” of the “handle block (1)” of the hand press and adjust the bottom dead point of the main body of the hand press moving the handle block with the “adjustment knob (3).”
- 2) Adjust the screw at the same time when there is a “support screw (4)” in the handle block.
- 3) Set the space of about 0.5mm at the bottom dead point position between the “upper die (6)” and the “stopper (5).”

“Note” Please note that there is a case of the tool damage when the bottom dead point of the main body of the hand press is adjusted low too much.



6. Parts List

6.1. IDT Tool Development (1.0mm pitch I/O 120P)



6.2. Parts List (1.0mm Pitch I/O 120P IDT Tool) (1 of 2)

[Applicable Model] 57833-5000: 1.0mm pitch I/O 120P A-IDT Tool
57848-5000: 1.0mm pitch I/O 120P B-IDT Tool

No.	Parts No.	Parts Name	Q'ty	Maker: Parts No.
-	57833-5100	120P (A) IDT Die Set ASS'Y	(1)	
-	57848-5100	120P (B) IDT Die Set ASS'Y	(1)	
	[Perishable Parts]			
2	57848-2001	120P (B) Platen	1	
2	57833-2001	120P (A) Platen	1	
	[Parts Only for 120P (A)]			
8	57833-1008	120P (A) Slide Table	1	
9	57833-1029	120P (A) Set Guide-R	1	
10	57833-1030	120P (A) Set Guide-L	1	
26	57833-1026	120P (A) Gauge, Platen	1	
	[Parts Only for 120P (B)]			
8	57848-1008	120P (B) Slide Table	1	
9	57833-1009	120P (B) Set Guide-R	1	
10	57833-1010	120P (B) Set Guide-L	1	
26	57848-1026	120P (B) Gauge, Platen	1	
	[Standard Parts]			
1	57827-1001	Die Set	1	
3	57827-1003	Platen Holder	1	
4	57827-1004	Guide Rail-R	1	
5	57827-1005	Guide Rail-L	1	
6	57827-1006	Slide Base	1	
7	57827-1007	Slider	1	
11	57827-1011	Cable Clamp Lever	1	
12	57827-1012	Spring, Clamp Lever	1	
13	57827-1013	Latch Finger	1	
14	57827-1014	Spring, Latch Finger	1	
15	57827-1015	Nut, Latch Finger	1	
16	57827-1016	Spacer, Latch Finger	1	
17	57827-1017	Stopper Block	1	
18	57850-1018	Shank	1	
20	57850-1020	Shank Plate	1	
32	57833-1032	Cable Base	1	

7. 1.0mm Pitch I/O 120P IDT Tool Startup Checklist

[Applicable Model] 57833-5000: 1.0mm pitch I/O 120P A-IDT Tool
57848-5000: 1.0mm pitch I/O 120P B-IDT Tool

“Note” Please check the following matter before the commencement of work, and start operation after checking those without a problem. Please record check results simultaneously.

No.	Check point	Standard	Method/equipment	Record	Startup	Monthly
1	Tool bottom dead point size	A = $10.8 \pm 0.05\text{mm}$ B = $7.8 \pm 0.05\text{mm}$	Measure by a caliper. (Solder + gauge)	Data	O	
2	Lock of upper cover	Must be locked to the plug	Visual check	-	O	
3	Damage of connector	No crack and remarkable damage	Visual check	-	O	
4	Platen surface	No damage and adhesion of foreign article	Cleanup	-	O	
5	Plug set part	No foreign article	Cleanup	-	O	
	[Monthly Checking]					
6	Ram and die set shaft	No dry up	Grease supplying	-		O

