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สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย



APPENDIX A
HANDLING OF CUSTOMER COMPLAINTS
(MOLEX THAILAND, 1997)

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1. Title :

Handling of Customer Complaint

2. Purpose :

To outline how the customer complaints have been handled by the respective staffs of Molex Thailand, in order to ensure the satisfaction of customer to our reaction activities recovering of the transaction errors.

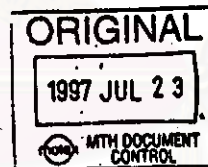
3. Scope :

All customer complaints handling procedures performed by the respective staffs of Molex Thailand and its subcontractor are complied by this procedure.
The transaction errors that cause of customer complaining under this procedure are classified into five categories.

- Manufacturing Errors which could cause of products quality failed or partial packing quality, for example poor quality or short quantity of the bundle/bag package.
- Warehouse Operating Errors which could cause of shipping error, short quantity, mixed products, etc.
- Buy/Resell Quality Deficiency, all quality deficiency of the resell products.
- Design/Application Errors, all quality deficiency which cause of quality of design.
- Customer Sales Services, all quality deficiency which cause of errors of administrative works, for example order entered error, delivery planning error, delivery or customer information error, etc.

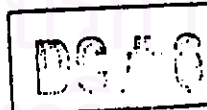
4. Reference :

THQA-0009 : Returning Material procedure.
THSA-0002 : Order Entry procedure.

**5. Definition :**

Indirect Sell : Shipment is made directly from manufacturing entity to customer, but invoice is made from Molex Thailand to customer.

Resell : Shipment and invoice are made from Molex Thailand to customer.

6. Equipment / Material : None**7. General Requirement :**

Once this procedure is taken effectiveness, the 8.5 paragraph "Handling of Customer's Complaints" in The THSA-0002 "Order Entry" procedure will be obsolete automatically.

8. Procedures.

8.1 Quality Deficiency Report (Refer to QDR form number THQA-0070)

The quality deficiency report is divided into two main sections. The first part would contain all necessary information of customer complaining and description of the deficiency issue. For the second part, it would contain the information of our corrective and preventive actions plan/taken to resolve the problem and prevent of reoccurrence.

Note: Please take a look for details at the specimen of QDR form in appendix I.

8.2 Received of customer complaint.

Our contact channel with customer for the quality issue are either Sales or QA. Engineer. Once she got informed of customer complaint, she would try her best to get as much as information and translate to the QDR format, in order to help the process owners to isolate the problem. Any specific actions are required by customer must also describe in the QDR. The QDR should be raised and sent to the process owners as soon as possible, in order for them to short the cycle time of the reaction activities, however, preferred cycle time to issue the QDR is within 24 hours after received the complaint. The QDR will be registered in the customer complaint log prior to issued, this is to establish the historical records and tracking system.

8.3 Establishment of Problem Solving Team.

QA. Engineer and/or the respective department with senior responsibility will from the core team to solve the problem. The core team should combine with cross functional responsibilities and it should be a clear defined of responsibilities within the team.

8.4 Interim Actions.

We are committed to take the containment actions and respond back to the customer within 48 hours after received of customer complaint.

The containment actions should be considered as following.

- a) Disposition of customer stock.
- b) Disposition of Molex Thailand and/or its supplier stock.
- c) Short term actions to contain the problem, not to flow out to customer.
- d) Other actions which are requested by customer.

The problem solving team will take full responsibility to provide the containment actions and respond back to customer within the desire time frame.

Note: Guideline of 8Ds corrective and preventive actions are described in the second part of QDR. The corrective and preventive actions report up to D3 are committed to submit to customer within 48 hours after noticed of the problem.

Customer claim or return requests are complied with the "Returning Material" procedure THQA-0009.



8.5 Verification of Problem and Investigation for Root Causes.

The problem solving team will perform the verification and investigation of the problem, to define both the root causes of problem occurred and escaped mechanisms. And then, the team will verify each cause and determine the percentage of impact to the problem.

If possible, we must received the defective samples for verification in order to get the clear picture of the problem and to isolate it.

In case, the problem is finally identified as the customer errors or cause of quality failed did not generate by our operating, the QDR can be considered to drop at this point. making note to the QDR explanation the reason for QDR dropped is required. If the defective ratio is satisfied acceptance quality level (usually refer to 0.1% AQL) and customer does not request us to take corrective actions, team may consider to drop the team activities at D3, then explain the reason for QDR dropped. However, both cases QA. Engineer and Team Champion must review and approve.

8.6 Corrective Action and Implementation Plan.

After determined the root causes, the term will then define the corrective action to correct each cause. Nevertheless, the term must verify the effectiveness of each action and defined the percent of effected to the problem.

The implementation plan of each corrective action will be defined next, "when the action can be implemented and who will take responsible for".

8.7 Preventive Action and Implementation Plan.

The team need to consider for the preventive action as well as define the implementation plan. The preventive action would be considered on two significant matters as a minimum, 1st the need to revise of related documented procedures and the training that may need to be arranged. This is to ensure that the documented procedures are maintained and the respective people are well understood, enable to perform or adjust their work without doubtful.

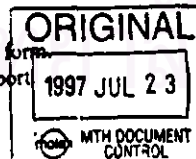
8.8 Verification to ensure the effectiveness of actions taker, and congratulation.

QA. Engineer and Team Champion will take responsibility to verify the effectiveness of actions taken to ensure the problem is solved and prevented it from reoccurrence in next future. Nevertheless, they must ensure that those activities are reported and very well communicated to the customer, as well as been satisfied them.

2. Appendices:

Form that illustrate in appendix I is a specimen for referent purpose. Its control copy can be obtained at the documents control section.

Appendix I : THQA-0070 "Quality Deficiency Report" form.
 Appendix II : Quality Deficiency Summary Monthly Report.
 Appendix III : Quality Deficiency Outstanding Report.



Appendix I



Quality Deficiency Report

QDR No.:

Section 1: Customer Complaint Report	MTH Received Date:	QA Recorded Date:		
To:	From:	QA Engineer Review:		
cc:	Customer:	QA Mgr. Approves:		
Molen Part No.:	Customer Part No.:	Customer's report ref. No.:		
Invoice No.:	F.O. No.:	Manufacturing Date:		
Shipping Quantity:	Shipping Date:	Detected Location:		
Defect code:	Defective Rate:	Samples Received ___ per. <input type="checkbox"/> Not Required.		
Type of deficiency: <input type="checkbox"/> Manufacturing <input type="checkbox"/> Customer Sales Service <input type="checkbox"/> Retail <input type="checkbox"/> Warehouse <input type="checkbox"/> Design / Application <input type="checkbox"/> In direct call				
Defect Detailed Description:		Defect Sketch:		
CUSTOMER REQUESTS				
Disposition of Customer Stock: _____		ROA No. (_____)		
Disposition of Molen Stock: _____		SS No. (_____)		
Interim actions required by customer: _____				
Corrective actions report required. Interim actions by _____ Full actions by _____				
<input type="checkbox"/> Not require actions report. (Explanation why: _____)				
Corrective Actions Response Time Table				
Action Item	Response Date	ECD	Completed Date	Updated By
Up to D1				
Up to D5				
Up to D8				
Comments:				

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Quality Deficiency Report

QDR No.:

Section II: Corrective and Preventive Actions (RDs)

D1 Determine an Member
 (.....) Leader
 (.....) Champion
 (.....) Member
 (.....) Member
 (.....) Member
 Date of team assignment:

D2 Problem Description
D2 Determine and Implement The Interim Actions.
3.1 Containment Action
 - Action Plan.
 - Implement & Verify for Effective.
3.2 Interim Action.
 - Customer Stock Disposition.
 - Make stock Disposition.
 - Other .
 - Verify the effectiveness.

D4 Investigate and define the root cause.
 4.1 Root cause of problem occurred.
 4.2 Verify root cause. (4.1)
 4.3 Root cause of problem escaped.
 4.5 Verify root cause. (4.3)

D2 Determine Corrective Actions.
 5.1 Corrective action to eliminate root cause. (4.1)
 5.2 Verify the effectiveness of corrective action. (5.1)
 5.3 Corrective action to eliminate root cause. (4.3)
 5.4 Verify the effectiveness of corrective action. (5.3)

D2 Implement Corrective Actions. (DC)
D2 Determine and Implement Prevention Action.
 7.1 Review of documented procedure / Training.
 7.2 Consideration of similar problem.

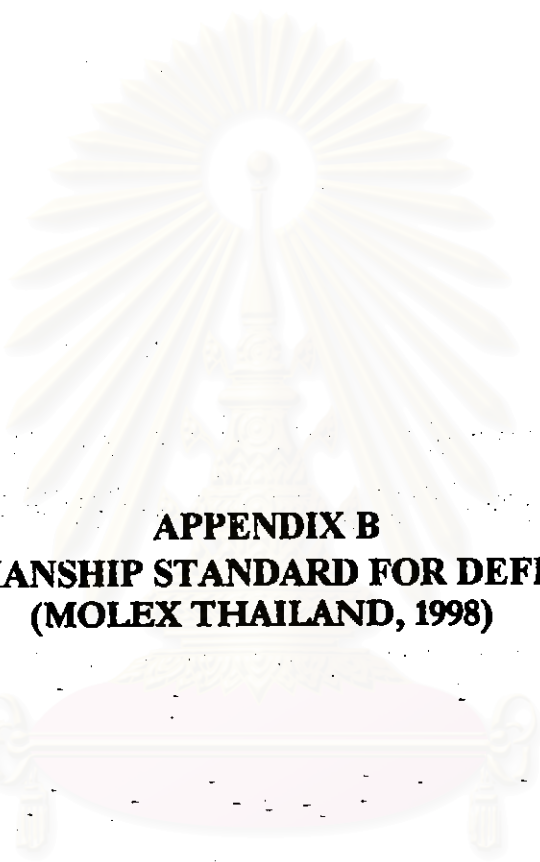
D2 Verify the effectiveness of actions taken and consideration of team success.

Verify by Completed by

QA Engineer. Team Champion.

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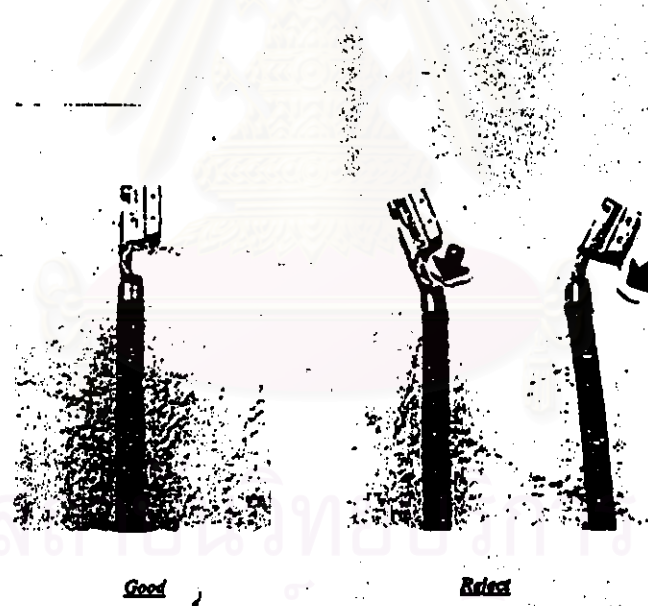


APPENDIX B
WORKMANSHIP STANDARD FOR DEFECT TYPE
(MOLEX THAILAND, 1998)

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

WORK INSTRUCTION TITLE : Workmanship Standard	WI#	QC062
	REV#	A
	REF.	THQA-0005
	PAGE	66 OF 76

Defect Type : Terminal Bent Up or Bent Down
Defect Code : 64
Definition : This refers to the degree of terminal bending with respect to (from) the horizontal axis crosses limits.
Possible Cause : a) Poor setup of applicator tooling.
 b) Poor feeding of terminal from reel.
Criteria For Control :
 The degree of bending up or down exceeding the crimp specification is not acceptable.
Measuring / Inspection : The bending angle should be measured using the profile projector.



Rationale : a) Terminal bend up / down will cause the difficulty of inserting terminal into housing
 b) The effective tab height of terminal will be affected. This will result in poor terminal / housing retention.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION TITLE : Workmanship Standard	WI#	QC062
	REV#	A
	REF.	THQA-0005
	PAGE	32 OF 76

Defect Type : Insulator Over and Under Crimp
Defect Code : 30
Definition : Over crimp refers to insulator that is extruded / extended into the conductor barrel while crimping .And under crimp refers insulator that do not flushed or extended beyond insulation support (insulator barrel).
Causes :
 a) Poor tooling set-up
 b) Poor feeding of wire during crimping process.
 c) Poor feeding of terminal from reel.

Criteria For Control :
 a) If wire insulation does not extend beyond insulation support / insulator barrel or even do not flush with insulation barrel, reject the product.
 b) If wire insulation is extruded / extended into conductor barrel , reject the product.

Measuring / Inspection : Visual inspection under low power microscope



Good



Reject

Reject



Rationale :
 a) Under crimp may create poor retention force in the terminal.
 b) Over crimp may create electrical failure as conductor is not properly matched with conductor barrel.

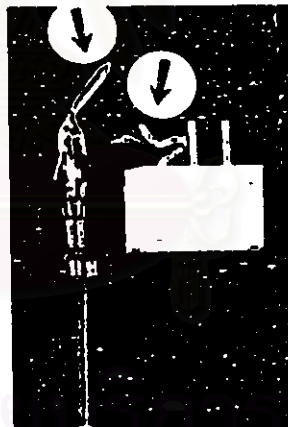
PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : <i>98/05/11</i>
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Flashed</i>	Date : <i>98/05/11</i>

WORK INSTRUCTION TITLE : Workmanship Standard	WI#	QC062
	REV#	A
	REF.	THQA-0005
	PAGE	19 Of 76

Defect Type : Damaged Terminal /Pin
Defect Code : 17
Definition : This refer to deformation of terminal / pin visible at a glance to naked eyes. It also includes unbalanced crimping of conductor and insulator barrels..
Cause :
 a) Poor tooling set-up
 b) Tool wear and tear
 c) Terminal jam.
Criteria For Control :
 Damaged terminal is considered as a serious defect and should be rejected.
Measuring / Inspection : Visual inspection with naked eyes / low power microscope.



Good



Reject

Rationale :
 a) It may create insertion problem in to the female part
 b) This may causes electrical failure.
 c) May also causes poor retention force.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R..	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION

TITLE : Workmanship Standard

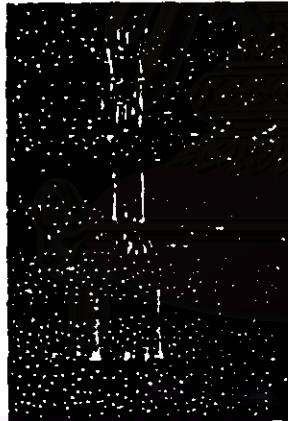
WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	26 Of 76

Defect Type : Extruded Wire Length Out of Spec.
Defect Code : 24
Definition : This refers to defected (over / under) length of conductor from the tip of conductor barrel.
Causes : a) Poor set-up of applicator tooling
 b) Poor feeding of wire from reel

Criteria For Control :
 The conductor , when flushed with conductor barrel is acceptable. Extruded wire length that is out of crimp specification is not acceptable.

Measuring / Inspection : Visual inspection with low power microscope and the profile projector

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Good



Reject

Rationale : a) Conductor does not expose beyond conductor barrel is an indication of poor pull - out force.
 b) Over extruded conductor is not acceptable. This will hinder the mating of the Harness / Connector during application.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 22/05/11
APPROVED BY	Name : Chowdhury M. R..	Sign : <i>Chowdhury</i>	Date : 22/05/11



WORK INSTRUCTION

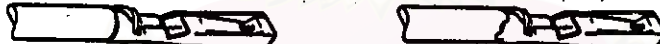
TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	5 OF 76

Defect Type : Burr on Crimped Terminal
Defect Code : 05
Definition : This refers to flashes at the conductor barrel of a crimped terminal.
Causes : a) Punch and Anvil clearance too large.
 b) Punch / Anvil wear out

Criteria For Control :
 Burr that is large and uneven on both sides of the conductor barrel is not acceptable.
 If in doubt, use a Go / No-Go gauge for the terminal type to decide.

Measuring / Inspection : Visual inspection under low power microscope



Good

Reject

Rationale :
 a) High Burr on terminal used for wire - insertion will reduce the effective tab- height of the crimped terminal. This will result low terminal / housing retention force.
 b) High Burr of board - in terminal will result high insertion force when used on PCB.

PREPARED BY	Name : Phanit T.	Sign: <i>Phanit T.</i>	Date: 98/05/11
APPROVED BY	Name : Chowdhury M. R..	Sign: <i>Chowdhury</i>	Date: 98/05/11

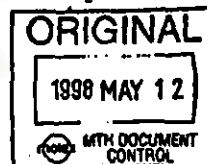
WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	50 OF 76

Defect Type : One Side Crimping
Defect Code : 4#
Definition : One side crimping refers to incomplete crimping where insulator is covered by one side of insulator barrel. Other side may be broken or not bend.
Possible Cause :
 a) Poor alignment of punch / anvil with terminal and wire
 b) Terminal jam
 c) Poor alignment of terminal with terminal carrier

Criteria For Control :
 The Insulator must be covered properly with two sides of insulator barrel.
Measuring / Inspection : Visual inspection with naked eyes.



Good



Reject

Rationale : It may causes poor retention force between terminal and insulator.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	9 Of 76

Defect Type : Conductor Barrel Not Cover Conductor
Defect Code : 09
Definition : This refer to conductor is not covered by conductor barrel.
Cause :
 a) Conductor barrel is not alignment with punch when crimping.
 b) Feeding of terminal not uniform.
 c) Worn out of conductor punch

Criteria For Control :
 Conductor must be covered by conductor barrel.

Measuring / Inspection : Visual inspection with naked eyes.



Good



Reject

Rationale : It may cause fray of wire that results dis-engaged from terminal.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : <i>9/5/11</i>
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : <i>9/5/11</i>

WORK INSTRUCTION

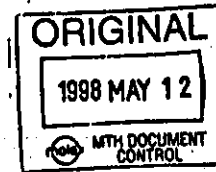
TITLE : Workmanship Standard

WI#	QC062
RE /#	A
RE #	THQA-0005
PAGE	67 Of 76

Defect Type : TTL (Total Length) Out of Spec.
Defect Code : 65
Definition : This refers total length of wire / harness product is out of specification.
Possible Cause :
 a) Tooling set up problem
 b) Feeding of wire is not uniform
 c) Wear and tear on blade cutting edges

Criteria For Control :
 TTL should be controlled in accordance with the drawing specification.

Measuring / Inspection : Measuring scale



Good



Reject

Rationale :
 a) The product can not be used properly
 b) It may cause dissatisfaction to customers.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

TITLE : Workmanship Standard	WORK INSTRUCTION	WI#	QC062
		REV#	A
		REF.	THQA-0005
		PAGE	62 Of 76

Defect Type : Tab Too Low / Unlocked

Defect Code : 60

Definition : This refers to poor locking due to tab of terminal does not hold adequately with housing. Due to unlocking terminal can be moved easily and tab is not visible in the window.

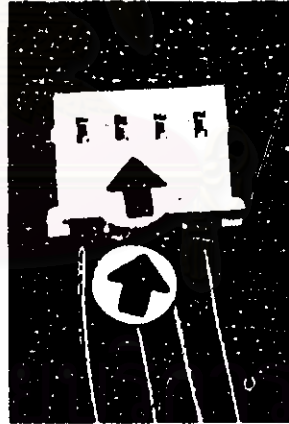
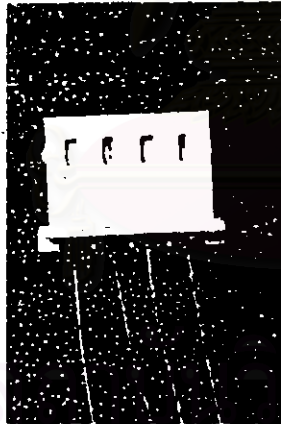
Possible Cause :

- a) Insertion of terminals into housing not complete
- b) Deformed terminal.
- c) Lance height is out of specification

Criteria For Control :

Reject the part if tab of terminal does not hold to the housing.

Measuring / Inspection : Visual inspection with manual pulling. If confusion do pull out.



Good

Reject

Rationale : This results in poor retention force

PREPARED BY	Name : Phanit T.	Sign: <i>[Signature]</i> T.	Date : 09/05/10
APPROVED BY	Name : Chowdhury M. R..	Sign: <i>[Signature]</i> Maskeel	Date : 28/05/11

WORK INSTRUCTION		WI#	QC062
TITLE : Workmanship Standard		REV#	A
		REF.	THQA-0005
		PAGE	2 OF 76

Defect Type : Alternation of Wire

Defect Code : 02

Definition : This refers to wrong position of wire between one circuit (port of housing) to other. Say, black wire should be inserted in pin no 3, actually it is inserted in pin no 4.

Cause : Human Error for wrong insertion of terminals between circuits (ports) of housing.


Criteria For Control :
Wire insertion must be in the order / sequence of drawing specification.

Measuring / Inspection : Visual inspection.


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Reject

Rationale : It may cause electrical failure.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 9/10/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 7/8/11

WORK INSTRUCTION

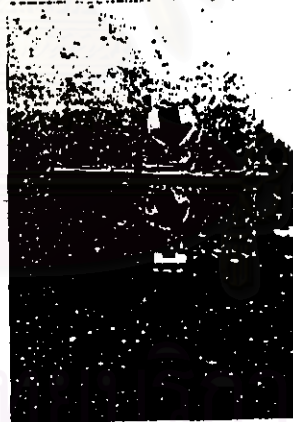
TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	33 Of 76

Defect Type : Lance Height Out of Spec.
 Defect Code : 31
 Definition : This refers to wrong dimension of lance height.
 Causes : a) Material itself
 b) Poor set-up of crimping applicator
 Criteria For Control :
 Lance height should be as per drawing specification.
 Measuring / Inspection : Visual inspection under low/high microscope.




Good



Reject

Rationale : It may create locking incomplete that results poor retention force between terminal and housing.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION		WI#	QC062
TITLE : Workmanship Standard		REV#	A
		REF.	THQA-0005
		PAGE	22 Of 76
<p>Defect Type : Difference of Wires Out of Spec.</p> <p>Defect Code : 20</p> <p>Definition : This refers total length variation of different wires in a finished harness product; creates limit specification.</p> <p>Cause : a) Tool set-up error for wire cutting (cutting section). b) Human error while trimming</p> <p>Criteria For Control : Variation of length of wires must be control by drawing specification.</p> <p>Measuring / Inspection : Dimension check with steel ruler</p>			
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<p>Remarks : This may cause dissatisfaction to customer.</p>			
PREPARED BY	Name : Pharit T.	Sign : <i>Pharit T.</i>	Date : 9/05/10
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>M. R. Chowdhury</i>	Date : 9/8/10/11

WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	37 OF 76

Defect Type : Missing Conductor
Defect Code : 35
Definition : This refers to conductor that is not visualised / seen with untrained eye at the end edge of crimped terminal.
Cause :
 a) Set up for cutting strip blade length is out of spec.
 b) Wire feeder is knocked when crimping.
 c) Nick protection sensor is not installed properly
 d) Striping / Cutting blades broken

Criteria For Control :
 Conductor must exist in conductor barrel when visual inspection.

Measuring / Inspection : Visual inspection under low power microscope



Good



Reject

Rationale : It may cause electrical failure.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R..	Sign : <i>Blashed</i>	Date : 78/05/11

WORK INSTRUCTION

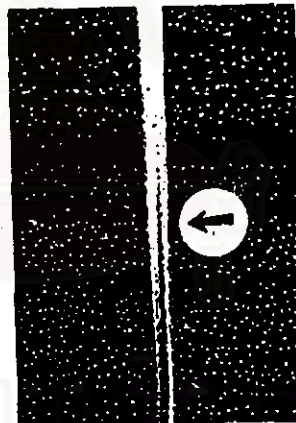
TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	8 Of 76

Defect Type : Color Error
 Defect Code : 08
 Definition : This refers to wrong color of wire, housing etc.
 Causes : a) Human error.
 b) Color blindness.
 Criteria For Control :
 Color should be as per drawing specification.
 Measuring / Inspection : Visual inspection with naked eyes.



Good



Reject

Rationale: It may create dissatisfaction to customer.

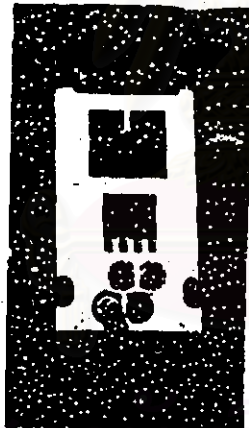
PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION

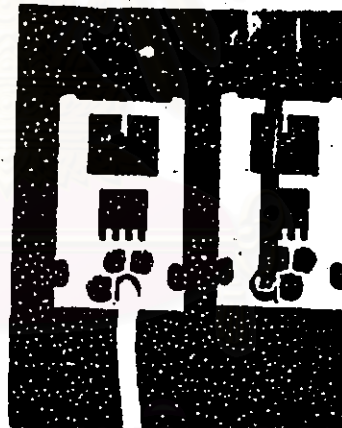
TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	28 OF 76

Defect Type : Insertion Too Deep or Shallow (Incomplete)
Defect Code : 26
Definition : This refers to deeply / heavily or slightly (incompletely) inserted terminal in to the housing.
Cause : a) Poor set-up of assembly fixture (for component / auto assembly).
 b) Human error.
Criteria For Control :
 Terminal that is under / over inserted is not acceptable.
Measuring / Inspection : Visual inspection with naked eyes / lower power microscope



Good



Reject

Rationale : a) It may effect to electrical failure
 b) Incomplete insertion may create incomplete locking that results poor retention force.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : <i>98/05/11</i>
APPROVED BY	Name : Chowdhury M. R..	Sign : <i>Chowdhury</i>	Date : <i>98/05/11</i>

WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	31 Of 76

- Defect Type :** Insulator Come Out
Defect Code : 29
Definition : The insulator is not held by insulator barrel of terminal.
Cause :
- a) Human error : The stripped wire is placed improperly on the tooling by operators.
 - b) Set-up problem
 - c) Poor bond strength of material.
 - d) Strip length too long

Criteria For Control :

Insulator not held by the insulator barrel is considered as major defect and should be rejected.

Measuring / Inspection : Visual inspection with naked eyes

ORIGINAL
 1998 MAY 12
 WITH DOCUMENT CONTROL



Good



Reject

- Rationale :**
- a) This may create poor retention force in the terminal.
 - b) Insertion into the housing might create problem.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chowdhury</i>	Date : 98/05/11

WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	18 OF 76

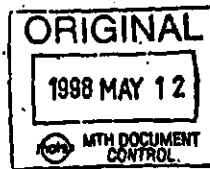
Defect Type : Damaged Housing

Defect Code : 16

Definition : Damage housing refers to indentation mark (scratch) or impression on wafer / housing - visible at a glance to the untrained eyes - that are usually caused by assembly tooling. It also include housing / wafer with part of it break - off.

Causes :

- a) Poor tooling set-up . .
- b) Tool wear and tear
- c) Misalignment when positioning the parts.



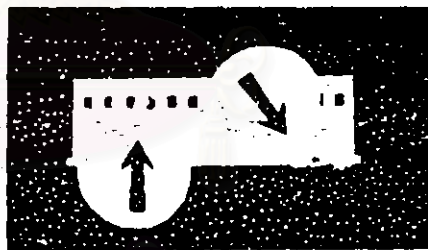
Criteria For Control :

- a) Damaged in the critical area of a part , i.e. in Core hole area or polarizing feature area which are considered serious and should be rejected.
- b) Large chunk of housing that are chipped - off is considered a serious defect - regardless of location and should be rejected.
- c) Light visible tool impression is considered a minor defect, so this can be accepted.

Measuring / Inspection : Visual inspection with naked eyes/ low power microscope.



Good



Rejctd

Rationale :

- a) It may create dissatisfaction to customer.
- b) Damage housing at core hole area may affect the retention force between the core hole and the pins / terminals and create difficulty in matching with male part .

PREPARED BY	Name : Phant T.	Sign : Phant T.	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : Blashed	Date : 78/05/11

WORK INSTRUCTION

TITLE : Workmanship Standard

WI#	QC062
REV#	A
REF.	THQA-0005
PAGE	38 Of 76

Defect Type : Missing Insertion (Wire)
 Defect Code : 36
 Definition : This refers to missed wire from total insertion circuit as per drawing specification..
 Cause : Human error (Manual insertion)
 Criteria For Control :
 Insertion should be as per drawing specification.
 Measuring / Inspection : Visual inspection with naked eyes



Rationale : It may cause electrical failure.

PREPARED BY	Name : Phanit T.	Sign : <i>Phanit T.</i>	Date : 98/05/11
APPROVED BY	Name : Chowdhury M. R.	Sign : <i>Chashed</i>	Date : 98/05/11

WORK INSTRUCTION

TITLE : Workmanship Standard

WIN	QC062
REV#	A
REF.	THQA-0005
PAGE	58 Of 76

Defect Type : Short Mold
Defect Code : 56
Definition : Housing with incomplete plastic filling
Possible Causes :
 a) Runner too long or small or both
 b) Insufficient injection pressure
 c) Insufficient mold venting
 d) Mold temperature too low



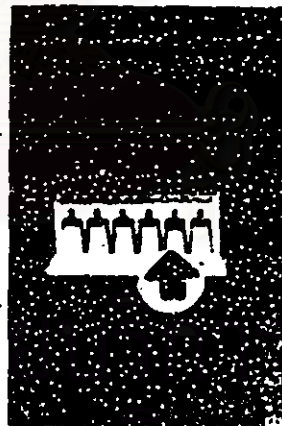
Criteria For Control :

- a) Preferred : Completely filled housing
- b) Acceptable : Slightly on any size housing
- c) Reject : Medium short mold in core hole & heavy short mold on housing surface.

Measurement / Inspection : Visual inspection with naked eyes. When confusion use 10 X Microscope.



Good



Reject

Rationale : Short mold at functional area (e.g. latch area, fitting area and core areas) cause poor retention force.

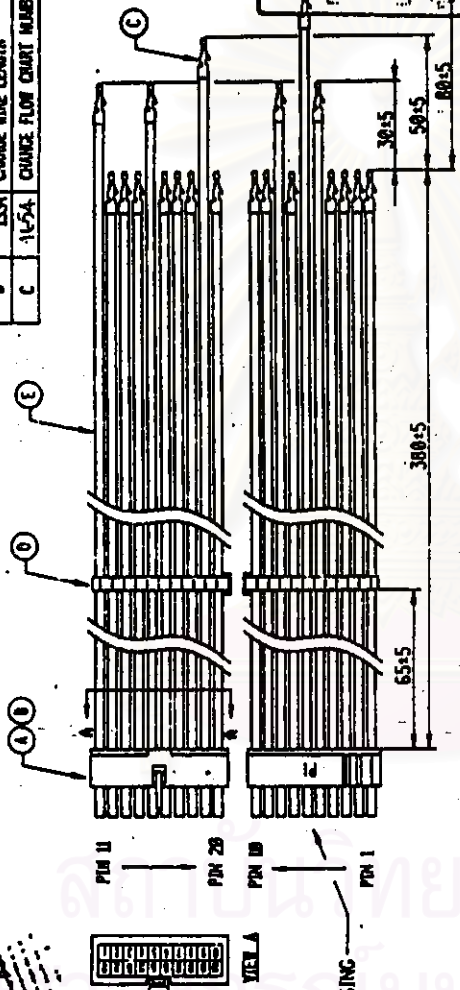
PREPARED BY	Name : Phanit T.	Sign: <i>Phanit T.</i>	Date : 28/05/11
APPROVED BY	Name : Chowdhury M. R..	Sign: <i>Chowdhury</i>	Date : 29/05/11



APPENDIX C
DRAWING AND FLOW CHART OF SELECTED PART NUMBER
FOR FMEA IMPLEMENTATION
(MOLEX THAILAND, 1997)

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

REV. LEV.	REV. NO.	DESCRIPTION	DATE
A	-	RELEASED	56/01/98
B	1334	CHANGE WIRE LENGTH	56/09/98
C	1454	CHANGE FLOW CHART NUMBER	97/05/03



CUSTOMER APPROVAL
 SEE ATTACHED
 DATE _____
 STAMP

ITEM	QTY	DESCRIPTION	CUSTOMER P/N	VENOR
E	20	WIRE UL1007 ANGRIB STR		
D	1	CABLE TIE 1-10S		
C	20	5298T 008-70-010G	TERMINAL	
B	20	9556T 09-08-003D	TERMINAL	MOLEX
A	1	9557-20R 09-01-2200	HOUSING	

WIRE COLOR	PIN NO.	LENGTH	COLOR	PIN NO.	LENGTH
GRAY	11	410 mm	GRAY	11	410 mm
BLACK	2	300 mm	BLACK	2	300 mm
BLACK	13	300 mm	BLACK	13	300 mm
BLACK	14	300 mm	BLACK	14	300 mm
WHITE	15	410 mm	WHITE	15	410 mm
RED	16	300 mm	RED	16	300 mm
RED	17	300 mm	RED	17	300 mm
RED	18	300 mm	RED	18	300 mm
BROWN	19	410 mm	BROWN	19	410 mm
RED	20	300 mm	RED	20	300 mm


REMARK : TERMINAL STRENGTH
 WIRE TO CONTACT TERMINAL : ANGIB : 8 kg. MINIMUM
 CONTACT TERMINAL TO CONNECTOR : ANGIB : 1 kg. MINIMUM
 WIRE TO CRIMP TERMINAL : ANGIB : 6kg. MINIMUM

ORIGINAL
 1997 MAY 13
 WITH DOCUMENT CONTROL

PROCESS FLOW CHART
 No. HRN _____
 171


APPR. BY	DATE	APPR. BY	DATE
<i>[Signature]</i>	97/05/03	<i>[Signature]</i>	97/05/03

889-4941-00

	<input checked="" type="checkbox"/> ECR Dwg. will not be changed until approved.	<input checked="" type="checkbox"/> Adv. Notice Change prior to dwg. rev. is allowed	No. <u>1654</u>
	<input checked="" type="checkbox"/> ECR Approved changes completed	Effective Date <u>97-05-13</u>	Sheet <u>1</u> of <u>2</u>

Requestor: PRASITH B. Date: 97-05-13 Design Control Center: N/A Customer: HIPRO

Resp. Eng.: PRASITH B. Date: 97-05-13 Checked By: _____ Date: _____ Approved By: [Signature] Date: 97-05-13

DRAWING NO.	NAME OR TITLE	OLD REV.	NEW REV.	SCL NO.	DESCRIPTION OF CHANGE
<u>899-8941-00</u>	<u>ROD W/ LIPS (S1)</u>	<u>D</u>	<u>C</u>	<u>165</u>	<u>CHANGE No. HEN 160 TO 171</u>
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>ORIGINAL</p> <p>1997 MAY 13</p> <p></p> </div>					

Reason for Change

<input type="checkbox"/> Function Improvement	<input type="checkbox"/> Cost Reduction	<input type="checkbox"/> Standardization
<input type="checkbox"/> Manufacturing Improvement	<input type="checkbox"/> New Product	<input type="checkbox"/> Q.C. Report
<input type="checkbox"/> Addition of Option	<input type="checkbox"/> Customer Request	<input type="checkbox"/> Other

Addition Info: _____

Class of Change

A. Immediate - Tooling must be changed; involves Scrap or Rework
 B. Normal - Tooling may change; use inventory
 C. Reference - Paperwork only; no effect on inventory

Tooling Cost: N/A Piece Part Cost: _____ Inventory Cost: _____

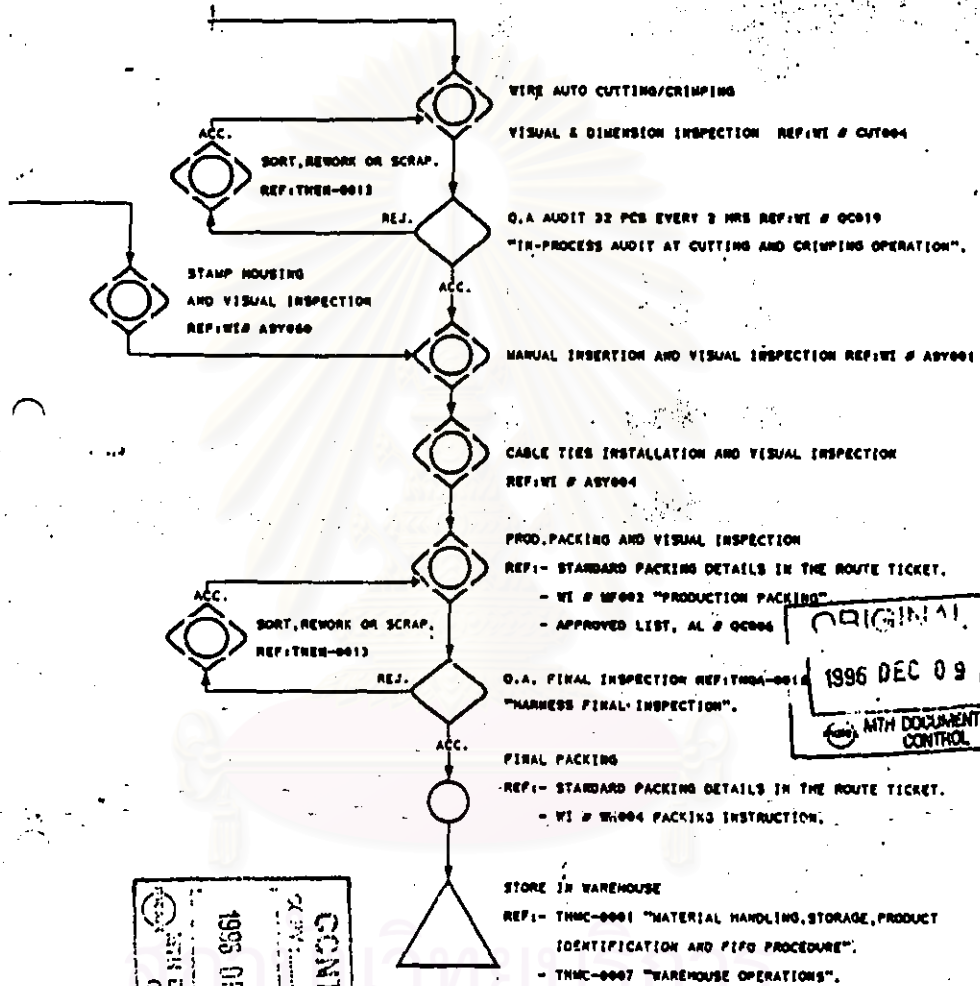
Cost Comments: _____

Circ.	Department	Comments	Reject	Signature and Date
<input checked="" type="checkbox"/>	Engineering	<u>Updated Rev - 00</u>		<u>[Signature]</u> <u>97-05-13</u>
<input type="checkbox"/>	Sales/Marketing			
<input type="checkbox"/>	Die			
<input type="checkbox"/>	Mold			
<input type="checkbox"/>	Automation			
<input type="checkbox"/>	Application Tooling			
<input checked="" type="checkbox"/>	Q.A.			<u>[Signature]</u>
<input type="checkbox"/>	PIC			
<input type="checkbox"/>	Purchasing			
<input type="checkbox"/>	Cost			
<input checked="" type="checkbox"/>	Manufacturing			<u>[Signature]</u>
<input type="checkbox"/>	Management			
<input type="checkbox"/>	International			
<input type="checkbox"/>	Other Divisions			

Document Release ENO, N/A, G.A.

PROCESS FLOW CHART
NO. HRN-171

REV.	DESCR.	PAGE	BY
00	RELEASED	96	NOV 30

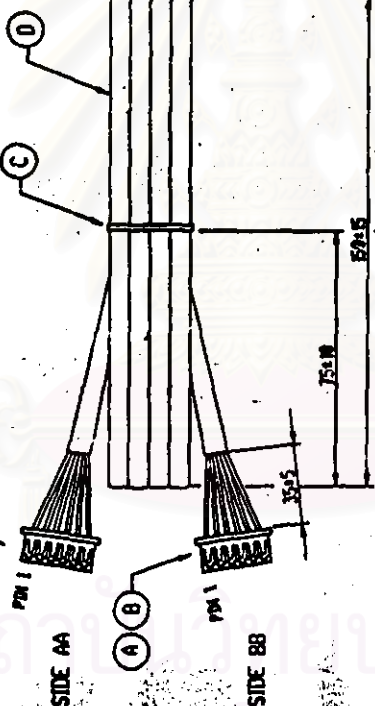


ORIGINAL
1996 DEC 09
WITH DOCUMENT CONTROL

CONTROL
1996 DEC 10
WITH DOCUMENT CONTROL

	NAME	POSITION	SIGNATURE	DATE
ORIGINATOR	TANAKORN P.	ENG'R SECTION CHIEF	<i>[Signature]</i>	96.12.03
	PATCHARA K.	Q.A. ENGINEER.	<i>[Signature]</i>	96.12.03
APPROVE BY	TANAKORN P.	ENG'R SECTION CHIEF	<i>[Signature]</i>	96.12.03
	PORMPANON K.	Q.A. MANAGER.	<i>[Signature]</i>	46 Dec 09
	CHAIRAT S.	PROD.MANAGER.	<i>[Signature]</i>	96 Dec 4

REVISIONS		
REV. LET	REV. NO.	DATE
A	-	15/03/79
B	1243	26/07/81
C	1493	19/01/82
D	192A	19/03/85



CONTROL
COPY: SALES
1997 APR 01
WITH DOCUMENT CONTROL

ORIGINAL
1997 APR 01
WITH DOCUMENT CONTROL

0 1	COMPUTER CABLE (L2/64) 6X28 STRUC WHITE	FR-SILYRE
C 1	RELEASE BOND	
B 2	SWITCH-BOARD TERMINAL	MOLEX
A 2	SUBST-BOARD HOUSING	MOLEX
REV. BY	DESCRIPTION	ISSUED
CUSTOMER WIRE	CUSTOMER P/N	REL. N/A
INTRONIC		CM888-281
PROJECT		
COMPUTER CABLE 6 CKTS		
MOLEX (THAILAND) LTD.		
SHEET NO. 225 OF 2		
SHEET TITLE: COMPUTER CABLE 6 CKTS		
DRAWN BY: [Signature]		
CHECKED BY: [Signature]		
DATE: 19/03/85		
SCALE: 1:1		
SHEET NO. 225 OF 2		
MATERIALS: [Blank]		
MATERIALS: [Blank]		

WIRE COLOR		
SIDE AA P/N No.	COLOR	SIDE BB P/N No.
1	BLACK	1
2	RED	2
3	ORANGE	3
4	YELLOW	4
5	BLUE	5
6	WHITE	6

CUSTOMER APPROVAL
[Signature]
DATE: 15/03/85

PROCESS FLOW CHART
No. HRN 225

Engineering Change

ECR Dwg. will not be changed until approved.

ECR Approved changes completed

Adv. Notice Change prior to dwg. rev. is allowed

Effective Date: 5/20/91

No. 1059

Sheet 1 of 3

Requestor: PLUMPT Date: 9/1/89 Design Control Center: N/A Customer: TYTRONIC

App. Eng: Tanaka Date: 9/1/89 Checked By: _____ Date: _____ Approved By: Tanaka Date: 5/20/91

DRAWING NO.	NAME OR TITLE	OLD REV.	NEW REV.	SPL. NO.	DESCRIPTION OF CHANGE
<u>89-4859-00</u>	<u>COMPUTER CABLE L.C.M.D.</u>	<u>C</u>	<u>D</u>	<u>1092</u>	<u>CHANGE WIRE MAKER FROM WPL → HR 7103</u>
<u>89-4859-01</u>	<u>MAS. OIL & CRIMP SPEC.</u>	<u>B</u>	<u>C</u>	<u>1091</u>	<u>AMP. UPDATE SYSTEM OPERATION ON INHOUSE</u> <u>CHANGE WIRE LENGTH</u>
					<u>89960-0006 = (w) COMP. CABLE L = 2010 mm.</u>

ORIGINAL

1997 APR 0 1

MTH DOCUMENT CONTROL

Reason for Change

<input type="checkbox"/> Function Improvement	<input checked="" type="checkbox"/> Cost Reduction	<input type="checkbox"/> Standardization
<input type="checkbox"/> Manufacturing Improvement	<input type="checkbox"/> New Product	<input type="checkbox"/> Q.C. Report
<input type="checkbox"/> Addition of Option	<input type="checkbox"/> Customer Request	<input type="checkbox"/> Other

Addition Info: HR. 3.56/m. + 0.25 unit cost → 7.4 B/EA
89-4859-01 → 4980/EA 8.03

Class of Change

<input type="checkbox"/> A. Immediate — Tooling must be changed, involves	<input type="checkbox"/> Scrap	<input type="checkbox"/> or Rework
<input type="checkbox"/> B. Normal — Tooling may change; use inventory		
<input checked="" type="checkbox"/> C. Reference — Paperwork only; no effect on inventory		

Tooling Cost: _____ Price Part Cost: 42-639 Inventory Cost: _____

Cost Comments:

Department	Comments	Reject	Signature and Date
<input checked="" type="checkbox"/> Engineering	<u>update Rev. -00, 01, 51, and all out comp. 7.</u>		<u>[Signature]</u> 9/20
<input checked="" type="checkbox"/> Sales/Marketing			<u>[Signature]</u> 9/20/91
<input type="checkbox"/> Die			
<input type="checkbox"/> Mold			
<input type="checkbox"/> Automation			
<input type="checkbox"/> Application Tooling			
<input type="checkbox"/> Q.A.			
<input checked="" type="checkbox"/> PIC	<u>Pls change supplier for cable 8997 on order</u>		<u>[Signature]</u> 9/20/91
<input checked="" type="checkbox"/> Purchasing			<u>[Signature]</u> 9/20/91
<input checked="" type="checkbox"/> Cost			<u>[Signature]</u> 9/20/91
<input checked="" type="checkbox"/> Manufacturing			
<input type="checkbox"/> Management			
<input type="checkbox"/> International			
<input type="checkbox"/> Other Divisions:			

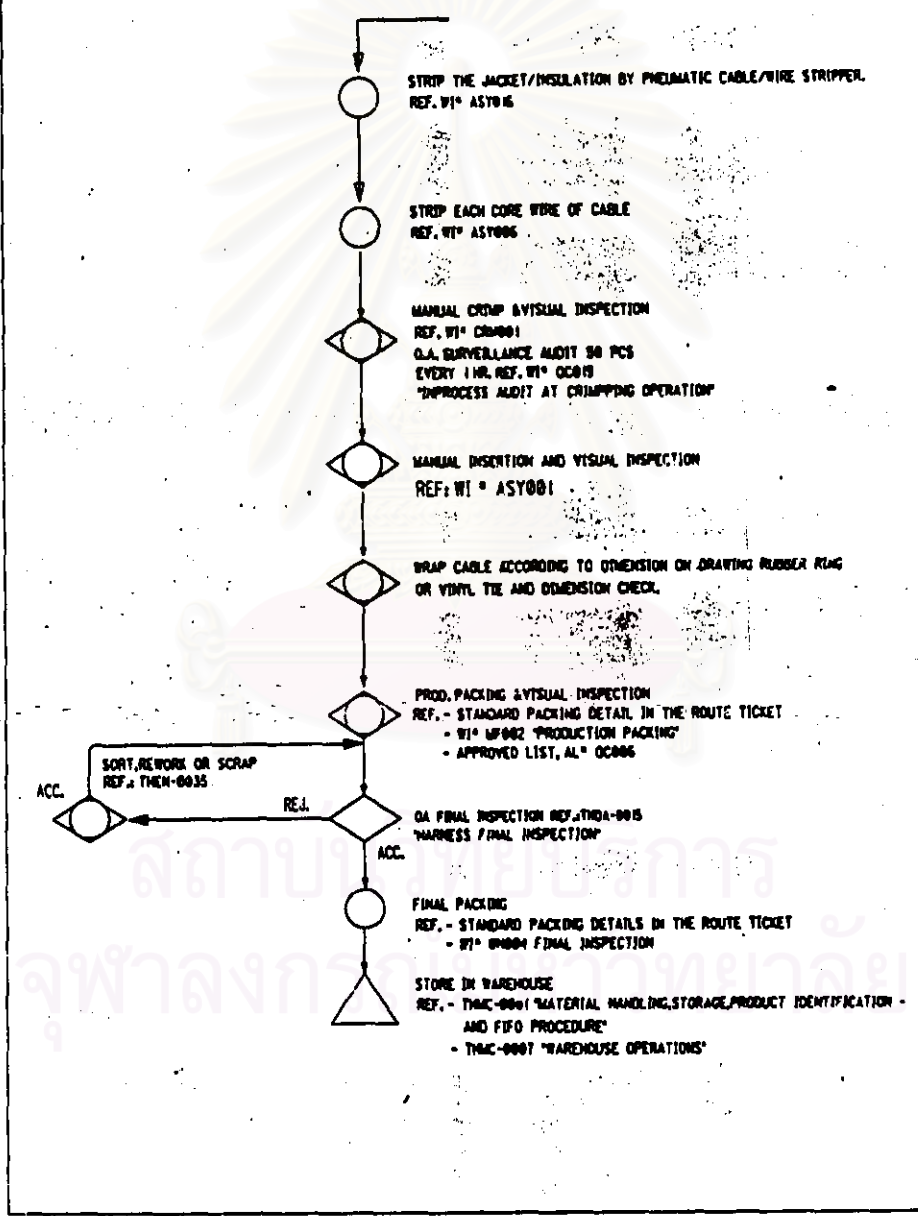
Document Release: Engineering, Sales, Q.P. Pic, Purchasing, Cost, Manufacturing, Hi/P



PROCESS FLOW CHART
NO. HRN-225

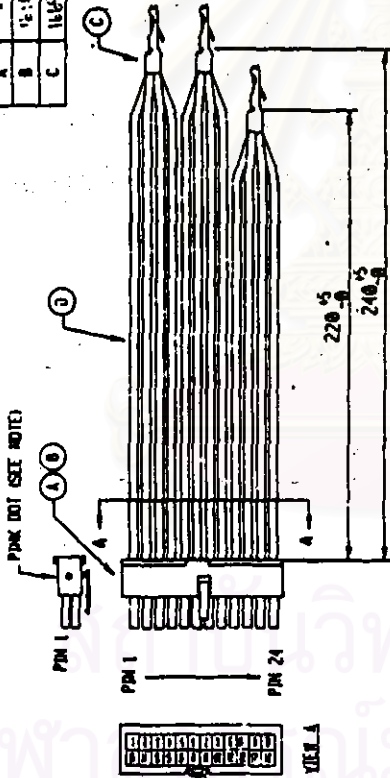
1 OF 1

REV.	DESCRIPTION	DATE
00	RELEASED	98/02/13



REVISIONS		
REV. NO.	DESCRIPTION	DATE
A	RELEASED	30/09/76
B	ADD PINK DOT AND CHANGE WIRE LENGTH	31/04/78
C	CHANGE CUST/P/N	31/05/78

WIRE COLOR		
P/N NO.	COLOR	LENGTH (L)
12.1.1.A	RED	240 mm
5.5.1.1.B	BLACK	240 mm
5.5.1.1.C	ORANGE	270 mm
11.1.1.1.D	RED	240 mm
11.1.1.1.E	BLACK	240 mm
11.1.1.1.F	ORANGE	270 mm



COPY CONTROL SALES
1997 JUN 19

0	24	WIRE (ALUMINUM STR)	WITH DOCUMENT CONTROL	JNT
C	5	3040861908	TERMINAL	
B	24	44476-1111	TERMINAL	MOLEX
A	1	5557-24R	HOUSING	
ITEM	QTY	DESCRIPTION	REASON	

CUSTOMER NAME: DELTA #3
CUSTOMER P/N: 367796821
REV: M/A

WIRE HARNESS		
APPL. BY	REV. BY	CHK. BY
PROJECT: JPS-145 P2A		
MOLLEX (THAILAND) LTD.		
CHANGCHEN	CHANGCHEN	CHANGCHEN
9/7/05/73		
PART NO. DESIGN P/N AFTER CUST. APPROVED: 889-5034-00		


WIRE COLOR		
P/N NO.	COLOR	LENGTH (L)
12.1.1.C	RED	240 mm
5.5.1.1.B	BLACK	240 mm
5.5.1.1.C	ORANGE	270 mm
11.1.1.1.D	RED	240 mm
11.1.1.1.E	BLACK	240 mm
11.1.1.1.F	ORANGE	270 mm

ORIGINAL
1997 JUN 19
WITH DOCUMENT CONTROL

- NOTE:
- PART D AND PART B ASSY MUST WITHSTAND 1.0 KG. TENSILE (TERMINAL 44476-1111 & WIRES)
 - PART B AND A ASSY MUST WITHSTAND 1.5 KG. BRISING & WIRE CRIMP (TERMINAL)
 - ADD PINK DOT ON THE SIDE OF THE HOUSING AT CIRCUIT 24.1

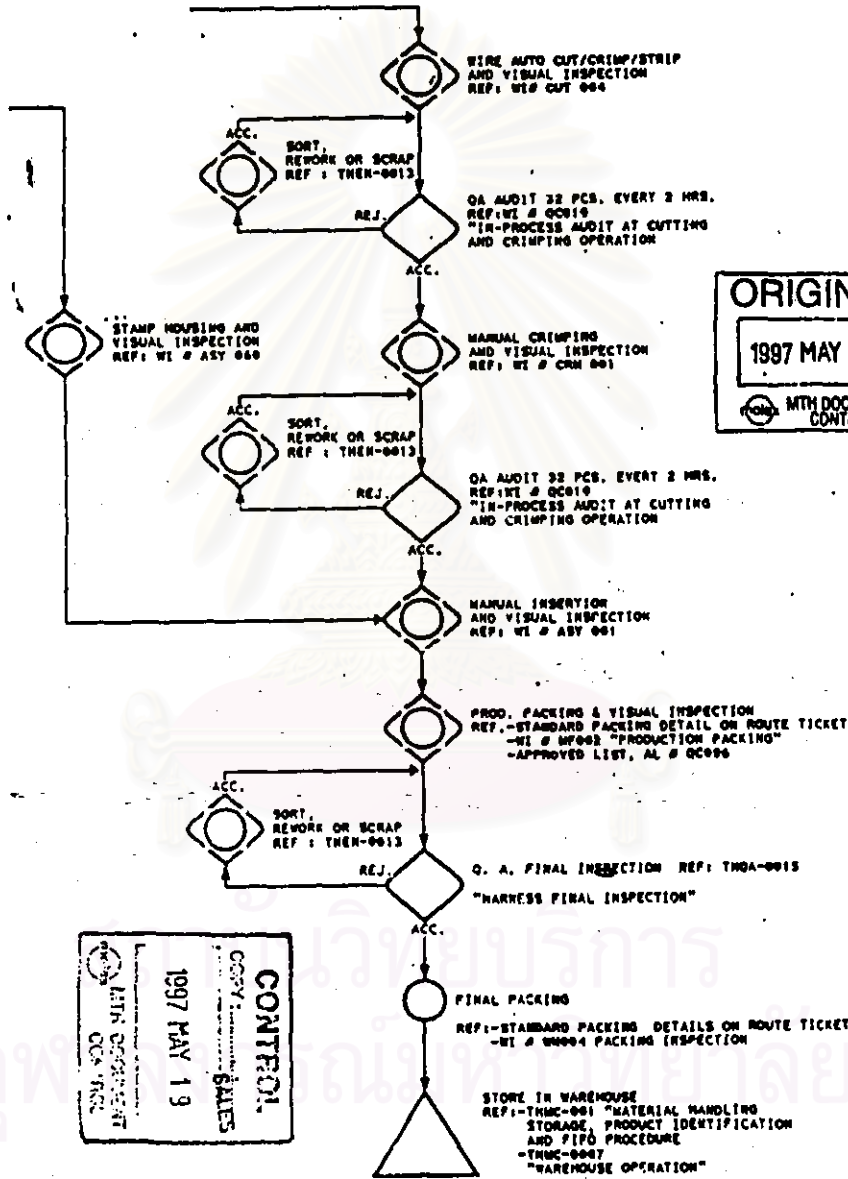
CUSTOMER APPROVAL
DATE: _____
STAMP: _____

PROCESS FLOW CHART
No. HRN 229

		<input checked="" type="checkbox"/> ECR Dwg. will not be changed until approved.	<input checked="" type="checkbox"/> Adv. Notice Change prior to dwg. rev. is allowed	No. <u>0151</u>	
		<input checked="" type="checkbox"/> ECR Approved changes completed	Effective Date <u>97.05.19</u>	Sheet <u>1</u> of <u>2</u>	
Requestor: <u>Puang pike</u> Date: <u>97-05-16</u>		Design Control Center: <u>N/A</u>		Customer: <u>Datta 43</u>	
Resp. Eng.: <u>PRASITH</u> Date: <u>97-05-19</u>		Checked By: _____ Date: _____		Approved By: <u>Tanul</u> Date: <u>97.05.19</u>	
DRAWING NO.	NAME OR TITLE	OLD REV.	NEW REV.	EX. NO.	DESCRIPTION OF CHANGE
<u>989-5034-W</u>	<u>WHL HANDB</u>	<u>B</u>	<u>C</u>	<u>1998</u>	<u>CHANGE CUSTOMER PART N/A/SEA</u>
					<u>TR 06 3677196601</u>
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ORIGINAL 1997 JUN 13 WITH DOCUMENT CONTROL </div>					
Reason for Change		<input type="checkbox"/> Function Improvement <input type="checkbox"/> Manufacturing Improvement <input type="checkbox"/> Addition of Option	<input type="checkbox"/> Cost Reduction <input type="checkbox"/> New Product <input checked="" type="checkbox"/> Customer Request	<input type="checkbox"/> Standardization <input type="checkbox"/> Q.C. Report <input type="checkbox"/> Other	
Addition Info: <u>N/A.</u>					
Class of Change		A. <input type="checkbox"/> Immediate — Tooling must be changed, involves <input type="checkbox"/> Scrap or <input type="checkbox"/> Rework B. <input type="checkbox"/> Normal — Tooling may change; use inventory C. <input type="checkbox"/> Reference — Paperwork only; no effect on inventory			
Tooling Cost: _____		Piece Part Cost: _____		Inventory Cost: _____	
Cost Comments: _____					
Circ.	Department	Comments	Reject	Signature and Date	
<input checked="" type="checkbox"/>	Engineering	<u>Updated REV. 00.</u>		<u>Tanul P. 97.05.19</u>	
<input checked="" type="checkbox"/>	Sales/Marketing			<u>Tanul 05/19/97</u>	
<input type="checkbox"/>	Die				
<input type="checkbox"/>	Mold				
<input type="checkbox"/>	Automation				
<input type="checkbox"/>	Application Tooling				
<input checked="" type="checkbox"/>	O.A.			<u>Tanul 05/19/97</u>	
<input checked="" type="checkbox"/>	PIC			<u>Tanul 05/19/97</u>	
<input type="checkbox"/>	Purchasing				
<input type="checkbox"/>	Cost				
<input checked="" type="checkbox"/>	Manufacturing			<u>Tanul 05/19/97</u>	
<input type="checkbox"/>	Management				
<input type="checkbox"/>	International				
<input type="checkbox"/>	Other Divisions				
Document Release: <u>ENG / SALE / QA / MANUAL / WHI</u>					

REV	DESCRIPTION	DATE
00	RELEASED	97APR30

PROCESS FLOW CHART
NO. HRN-229



ORIGINAL
1997 MAY 13
MTH DOCUMENT CONTROL

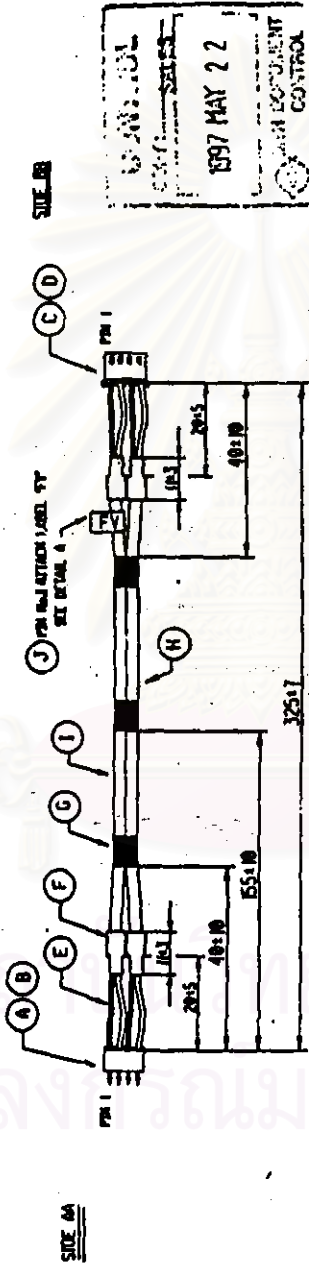
CONTROL
COPY: _____
DATE: 1997 MAY 19
MTH DOCUMENT CONTROL

	NAME	POSITION	SIGNATURE	DATE
ORIGINATOR	TAKAKORN P.	ENG'R. SECTION CHIEF	<i>[Signature]</i>	97.05.12
	PAISIT T.	C. A. ENGINEER	<i>[Signature]</i>	97.05.12
APPROVED BY	TAKAKORN P.	ENG'R. SECTION CHIEF	<i>[Signature]</i>	97.05.12
	PORHAPANON K.	Q. A. MANAGER	<i>[Signature]</i>	97 May 12
	CHAIKAT S.	PRODUCTION MANAGER	<i>[Signature]</i>	97 May 13

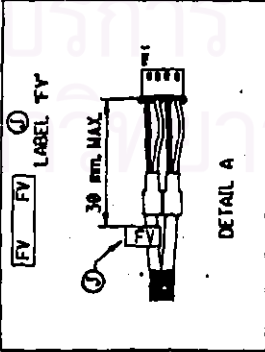
CUSTOMER APPROVAL
 DATE: 9/5/19
 NAME: Mohi
 STAMP
 DATE

REVISIONS

REV. LVL.	CHG. NO.	DESCRIPTION	DATE
A		CHANGE WIRE VELOUR & COLOR CORE WIRE	13/11/01
B	0586	CHANGE TO USED LABEL TV	13/11/08
C	0521	CHANGE CORE WIRE TO WHITE ØPR2.0	13/11/08
D	1157	CHANGE P/W OF SHIELDING TUBE	17/05/12



ORIGINAL
 1997 MAY 22
 MTR DOCUMENT CONTROL




LABEL TV	DESCRIPTION	VELOUR
J	SHIELD WIRE UL IBS ANCOB STRIP/WHITE/BROWN	ALL VELOUR
M	SHIELD WIRE UL IBS ANCOB STRIP/WHITE/BROWN	WIRE P-MARK
G	PVC TAPE 04-2235-3080 ON BLACK	W/TO
F	5118-18 Ø1.8-Ø2.7820 SHRM TUBE LB W/L-F-FL-CLACK	SUMITOMO
E	5115-22 Ø1.8-Ø2.7820 SHRM TUBE LB W/L-F-FL-CLACK	MOLLY
D	5303PTI Ø8-78-Ø579	
C	5251-4852-37-5413	
B	51911 Ø8-78-Ø413	
A	5195-04 122-02-Ø417	
ITD	RTY	

ORIGINAL
 1997 MAY 22
 MTR DOCUMENT CONTROL

CUSTOMER WIRE	SIAM NEC	CUSTOMER P/N	73J4002	REV.	N/A
DESCRIPTION	CN 4P(FV)325W.MIX	PROJECT	CITY		
WIRE TYPE	UL IBS ANCOB BROWN	APPL. BY			
WIRE COLOR	BROWN	REV. BY	THANAKORN		
WIRE COLOR	WHITE	DRG. BY	CHAMPEN		
WIRE COLOR	DRYIN	DATE			
WIRE COLOR	WHITE	PART No. DESIGN P/W AFTER CUST. APPROVAL			87/05/12
WIRE COLOR	DRYIN				
WIRE COLOR	WHITE				

WIRE TYPE	WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR
UL IBS ANCOB BROWN	DRYIN	DRYIN	DRYIN	DRYIN	DRYIN
UL IBS ANCOB BLACK	WHITE	WHITE	WHITE	WHITE	WHITE

PROCESS FLOW CHART
 No. HRN 035

 Engineering Change		<input checked="" type="checkbox"/> ECR Dwg. will not be changed until approved.	<input checked="" type="checkbox"/> Adv. Notice Change prior to dwg. rev. is allowed.	No. <u>7656</u>
		<input checked="" type="checkbox"/> E-N Approved changes completed	Effective Date <u>97, 05, 19.</u>	Sheet <u>1</u> of <u>3</u>
Requestor: <u>Chander</u>	Date: <u>97-05-12</u>	Design Control Center: <u>N/A</u>	Customer: <u>JVM NEC.</u>	
Resp. Eng.: <u>PRASITH.</u>	Date: <u>14-05-99</u>	Checked By: _____	Approved By: <u>[Signature]</u> Date: <u>97.05.19</u>	

DRAWING NO.	NAME OR TITLE	OLD REV.	NEW REV.	S/N NO.	DESCRIPTION OF CHANGE
<u>819-0192-09</u>	<u>CN. AP. (FV) 325M MIX</u>	<u>0</u>	<u>D</u>	<u>1 of 2</u>	<u>Change part no. of shrink Tube From. H. 3.0 mm: To 8T3-0-11F and. 3H.</u>
<u>819-0192-xx</u>	<u>NICE CUT & CRMP 30PC.</u>	<u>D</u>	<u>E</u>	<u>2 of 2</u>	<u>1.5 mm To 3T1-9-23F</u>
					<u>Delete part no. 819-0192-03, 04 To 819-0192-</u>
<u>Please see attach Drawing.</u>					
<u>Modify operation - and -30 level</u>					

ORIGINAL

1997 MAY 22

WITH DOCUMENT CONTROL

Reason for Change	<input checked="" type="checkbox"/> Function Improvement <input type="checkbox"/> Manufacturing Improvement <input type="checkbox"/> Addition of Option	<input type="checkbox"/> Cost Reduction <input type="checkbox"/> New Product <input type="checkbox"/> Customer Request	<input type="checkbox"/> Standardization <input type="checkbox"/> Q.C. Report <input type="checkbox"/> Other
Addition Info: _____			

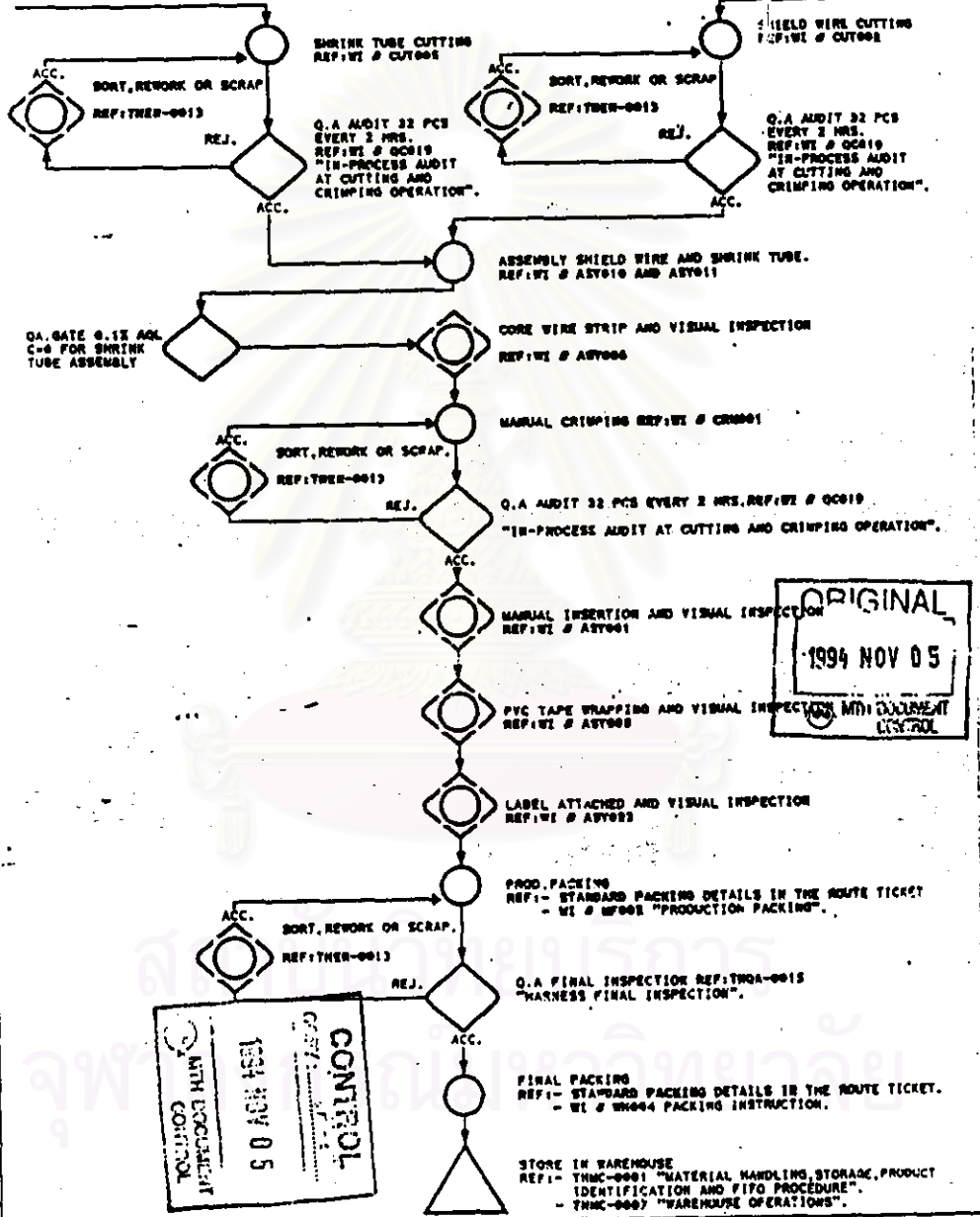
Class of Change	<input checked="" type="checkbox"/> A. Immediate - Tooling must be changed, purchase <input type="checkbox"/> B. Normal - Tooling may change; use inventory <input type="checkbox"/> C. Reference - Paperwork only; no effect on inventory	<input type="checkbox"/> Scrap <input type="checkbox"/> Rework
Tooling Cost: _____	Piece Part Cost: _____	Inventory Cost: _____
Cost Comments: _____		

Circ.	Department	Comments	Reject	Signature and Date
<input checked="" type="checkbox"/>	Engineering	<u>Updated rev. - 09, 01, 02, 03, 30</u>		<u>[Signature] 97.05.19</u>
<input checked="" type="checkbox"/>	Sales/Marketing			<u>[Signature] 97/5/19</u>
<input type="checkbox"/>	Die			
<input type="checkbox"/>	Mold			
<input type="checkbox"/>	Automation			
<input type="checkbox"/>	Application Tooling			
<input checked="" type="checkbox"/>	O.A.			<u>[Signature] 97/5/19</u>
<input checked="" type="checkbox"/>	PIC	<u>NA file release in office</u>		<u>[Signature] 97/5/19</u>
<input checked="" type="checkbox"/>	Purchasing			<u>[Signature] 97/5/19</u>
<input checked="" type="checkbox"/>	Cost			<u>[Signature] 97/5/19</u>
<input type="checkbox"/>	Manufacturing			<u>[Signature] 97/5/19</u>
<input type="checkbox"/>	Management			
<input type="checkbox"/>	Internationals			
<input checked="" type="checkbox"/>	Other Divisions W/H			<u>[Signature] 97/5/19</u>

Document Release: Eng, Sales, QA, planner, purchasing, Cost, Cutting, Manual Entry, SUB-CON, NC

PROCESS FLOW CHART
NO. NRM-035

REV	DESCRIPTION	DATE
1	RELEASED	04 SEP 81



ORIGINAL
1994 NOV 05
MINI DOCUMENT
CONTROL

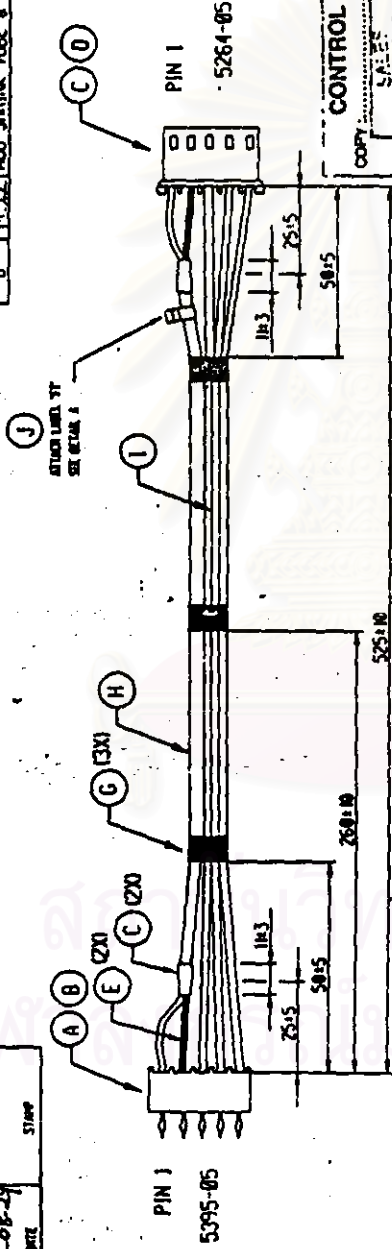
CONTROL
1994 NOV 05
WITH DOCUMENT
CONTROL

	NAME	POSITION	SIGNATURE	DATE
ORIGINATOR	PRACHOK B.	PROJECT ENGINEER.	<i>Prachok B</i>	09 SEP 81
	PORNPAHOM E.	Q.A. ENGINEER.	<i>Pornpahom E</i>	24-09-81
APPROVE BY	SUTHAN N.	ENG'R SECTION CHIEF	<i>Suthan N</i>	24-09-81
	TORSAN P.	Q.A. MANAGER.	<i>Torsan P</i>	24-09-81
		PROC. MANAGER.	<i>Suthan N C.S</i>	24-09-81

Source: Molex Thailand document file

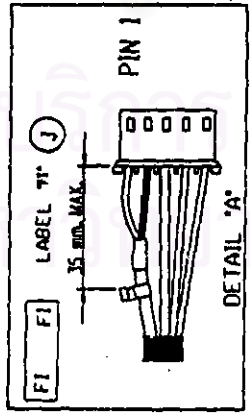
REV. NO.	REV. DATE	DESCRIPTION	DATE
A		RELEASED	15/08/21
B	13/10	600 SHRINK TUBE & ENG. NO.	17/08/21

CUSTOMER APPROVAL	
<i>[Signature]</i>	DATE
17-08-21	17-08-21
WHITE	STAMP



CONTROL
COPY: SALES
1997 SEP 02
MTH DOCUMENT CONTROL

ORIGINAL
1997 SEP 02
MTH DOCUMENT CONTROL



ITEM	QTY	DESCRIPTION	REMARKS
1	1	WIRE LABEL 7T	
2	1	WIRE LABEL 7T	
3	1	WIRE LABEL 7T	
4	1	WIRE LABEL 7T	
5	1	WIRE LABEL 7T	
6	1	WIRE LABEL 7T	
7	1	WIRE LABEL 7T	
8	1	WIRE LABEL 7T	
9	1	WIRE LABEL 7T	
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46	1	WIRE LABEL 7T	
47	1	WIRE LABEL 7T	
48	1	WIRE LABEL 7T	
49	1	WIRE LABEL 7T	
50	1	WIRE LABEL 7T	

CUSTOMER WIRE	SIAM NEC
DESCRIPTION	CN SP (F) 525W, MIX
CUSTOMER P/N	72-525005
REV.	N/A

WIRE COLOR	WIRE SIZE	WIRE TYPE
1 WHITE	1	1
2 GREEN	2	2
3 WHITE	3	3
4 WHITE	4	4
5 WHITE	5	5

PROCESS FLOW CHART
No. HRN 086

881-4524-00

Engineering Change

ECR Dwg. will not be changed until approved. Adv. Notice Change prior to dwg. rev. is allowed. No. 1732

ECR Approved changes completed. Effective Date 9.09.01 Sheet 1 of 1

Requestor: PHUMIL Date: 99-08-21 Design Control Center: N/A Customer: SIAM WGO.

Resp. Eng: SPASPH Date: 97-09-01 Checked By: _____ Date: _____ Approved By: [Signature] Date: 92.08.01

DRAWING NO.	NAME OR TITLE	OLD REV.	NEW REV.	SH. NO.	DESCRIPTION OF CHANGE
<u>99-1539-00</u>	<u>CN EP (PI) 025W 19x</u>	<u>A</u>	<u>B</u>	<u>10P2</u>	<u>MODIFY OPERATION JEREMING.</u>
<u>99-1539-00</u>	<u>WIRE CUT SCRIBER APC</u>	<u>A</u>	<u>B</u>	<u>10P2</u>	

ORIGINAL

1997-SEP-02

WITH DOCUMENT CONTROL

Reason for Change

Function Improvement Cost Reduction Standardization

Manufacturing Improvement New Product D.C. Report

Addition of Option Customer Request Other

Addition Info: N/A.

Class of Change

A. Immediate — Tooling must be changed, involves Scrap or Rework

B. Normal — Tooling may change; use inventory

C. Reference — Paperwork only; no effect on inventory

Tooling Cost: _____ Piece Part Cost: _____ Inventory Cost: _____

Cost Comments: _____

Dept	Department	Comments	Reject	Signature and Date
<input checked="" type="checkbox"/>	Engineering	UPDATE REV. AND D.C.H.		<u>[Signature]</u> 99.08.01
<input type="checkbox"/>	Sales/Marketing			
<input type="checkbox"/>	Die			
<input type="checkbox"/>	Mold			
<input type="checkbox"/>	Automation			
<input type="checkbox"/>	Application Tooling			
<input checked="" type="checkbox"/>	Q.A.			<u>[Signature]</u> 97.09/02
<input type="checkbox"/>	Purchasing			
<input type="checkbox"/>	Cost			
<input checked="" type="checkbox"/>	Manufacturing			<u>[Signature]</u> 97.08.22
<input type="checkbox"/>	Management			
<input type="checkbox"/>	International			
<input type="checkbox"/>	Other Divisions			

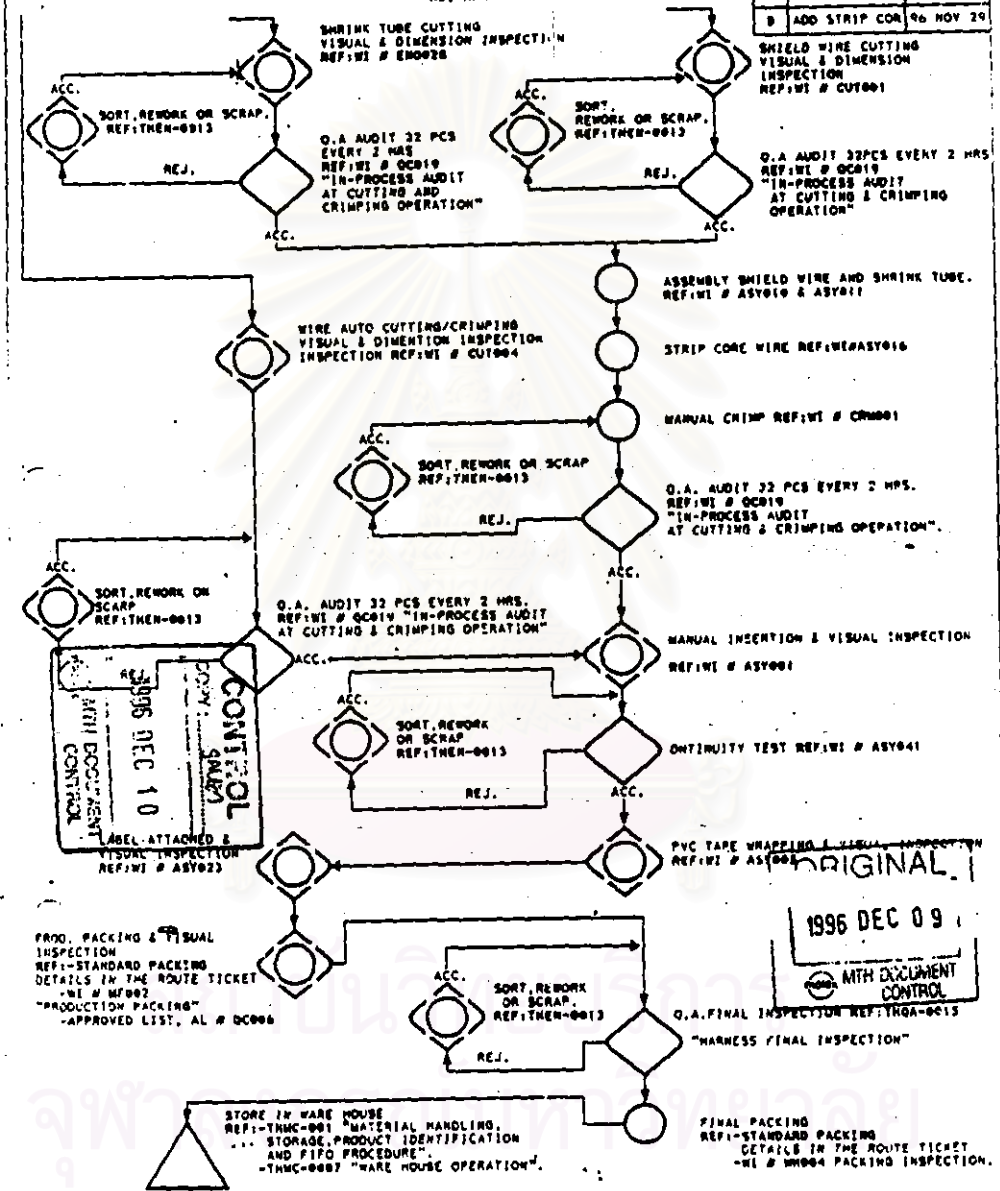
WITH DOCUMENT CONTROL

1997-SEP-02

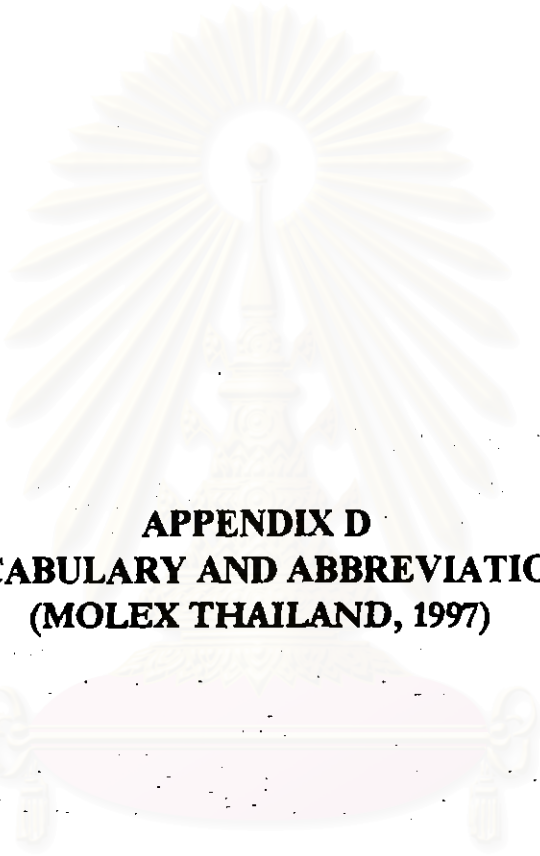
Document Release Engineer / O.A. / Elmer / Production

PROCESS FLOW CHART
NO. HRN-866

REV	RELEASED	Page
A	ADD CONT. TEST	96 APR 20
B	ADD STRIP COR	96 NOV 29



	NAME	POSITION	SIGNATURE	DATE
ORIGINATOR	TANAKORN P.	ENG'R SECTION CHIEF	<i>[Signature]</i>	5. 11.29
	PATCHARA E.	Q.A. ENGINEER.	<i>[Signature]</i>	09.12.96
APPROVE BY	TANAKORN P.	ENG'R SECTION CHIEF	<i>[Signature]</i>	96.11.26
	PORNPAWON K.	Q.A. MANAGER.	<i>[Signature]</i>	6.12.01
	CHAIRAT S.	PROD. MANAGER.	<i>[Signature]</i>	96.12.04

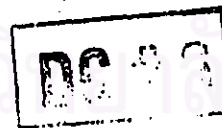
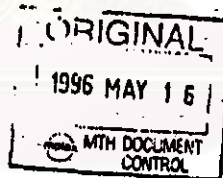


APPENDIX D
VOCABULARY AND ABBREVIATION
(MOLEX THAILAND, 1997)

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

Table of Contents

Topic / S	Page
1. Title	2
2. Purpose	2
3. Scope	2
4. Reference	2
5. Definitions	2
6. Equipment / Material	2
7. General Requirement	2
8. Vocabulary & Abbreviation	2
8.1 Quality Vocabulary	3
8.2 Abbreviation	8



สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

1. **Title :**

Quality Vocabulary & Abbreviations.

2. **Purpose :**

- To define and obtain mutual understanding of the meaning of certain abbreviations and words. Then abbreviations might be used in general discussion, communication as well as Quality Manual , Procedures or Specifications.

- This procedure is for reference and guidelines only, and is not exhaustive.

3. **Scope :**

All words, vocabulary and abbreviations that are used in Molex and general terms used in electronics and quality matters.

4. **Reference :**

Nil

5. **Definitions :**

Nil

6. **Equipment / Material :**

Nil

7. **General Requirement :**

Nil

8. **Vocabulary & Abbreviation :**

DC # 6

8.1 Quality Vocabulary :

ISO 9000 Quality management and quality assurance standards - Guidelines for selection.

ISO 9001 Quality system - Model for quality assurance in design/development, production, installation and servicing.

ISO 9002 Quality system - Model for quality assurance in production and installation.

ISO 9003 Quality system - Model for quality assurance in final inspection and test.

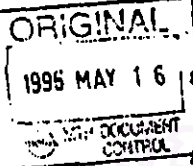
ISO 9004 Quality system management and quality system elements - Guidelines.

8.1.1 **Quality :** The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

8.1.2 **Grade :** An indicator of category or rank related to features or characteristics that cover different sets of needs for products or services intended for the same functional use.

8.1.3 **Quality Top ; Quality Spiral :** Conceptual model of interacting activities that influence the quality of a product or service in the various stages ranging from the identification of needs to the assessment of whether these needs have been satisfied.

8.1.4 **Quality Policy :** The overall quality intentions and direction of an organization as regards quality, as formally expressed by top management.



8.1.5 **Quality Management :** The aspect of the overall management function that determines and implements the quality policy.

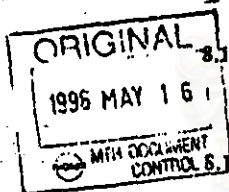
8.1.6 **Quality Assurance :** All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.



8.1.7 **Quality Control :** The operational techniques and activities that are used to fulfil requirements for quality.

Quality System : The organizational structure, responsibilities, procedures, processes and resources for implementing quality management.

- 8.1.9 Quality Plan :** A document setting out the specific quality practices, resources and sequence of activities relevant to a particular product, service, contract or project.
- 8.1.10 Quality Audit :** A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.
- 8.1.11 Quality Surveillance :** The continuing monitoring and verification of the status of procedures, methods, conditions, processes, products and services, and analysis of records in relation to stated references to ensure that specified requirements for quality are being met.
- 8.1.12 Quality System Review :** A formal evaluation by top management of the status and adequacy of the quality system in relation to quality policy and new objectives resulting from changing circumstances.
- 8.1.13 Design Review :** A formal, documented, comprehensive and systematic examination of a design to evaluate the design requirements and the capability of the design to meet these requirements and to identify problems and propose solutions.
- 8.1.14 Inspection :** Activities such as measuring, examining, testing, gauging one or more characteristics of a product or service and comparing these with specified requirements to determine conformity.
- 8.1.15 Traceability :** The ability to trace the history, application or location of an item or activity, or similar items or activities, by means of recorded identification.
- 8.1.16 Concession ; Waiver :** Written authorization to use or release a quantity of material, components or stores already produced but which do not conform to the specified requirements.
- 8.1.17 Production Permit ; Deviation Permit :** Written authorization, prior to production or before provision of a service, to depart from specified requirements for a specified quantity or for a specified time.
- 8.1.18 Reliability :** The ability of an item to perform a required function under stated conditions for a stated period of time.
The term "reliability" is also used as a reliability characteristic denoting a probability of success or a success ratio.



DC # 6

8.1.19 Product Liability ; Service Liability : A generic term used to describe the onus on a producer or others to make restitution for loss related to personal injury, property damage or other harm caused by a product or service.

8.1.20 Nonconformity : The nonfulfillment of specified requirements.

8.1.21 Defect : The nonfulfillment of intended usage requirements.

8.1.22 Specification : The document that prescribes the requirements with which the product or service has to conform.

8.1.23 Connector : A coupling device which provides an electrical and mechanical connection / disconnection between and receptacle. Usually consists of plastic over shell also known as a housing or body or block. Some connectors can also have an outer metal shell. The remaining part(s) of the connector are the metal contacts or terminal, these conduct the electricity or transmit signals. A connector or electrical connector is also known (particularly in the US) as an Electrical Interconnect Device.

8.1.24 Connector Housing : Insulating material that encapsulates contacts. Once pins and sockets are inserted a connector. Connector housing are usually made of plastic, and housing is sometimes called block or shell or body

*** Using for terminal insertion**



8.1.25 Header : usually the name given to the P.C.B half of a wire to board or board to board connector. in the case of the latter the other half is known as a P.C.B. connector or box connector. Header can be "shrouded" (manufacturing circles other names used for headers are wafer or base.

*** Assembly with pin (finished assembly)**

8.1.26 Naked header : Usually one half of a PCB mounted with no skirt or shroud, sometimes called a wafer or base.

*** Wafer actually use for pin insertion.**

8.1.27 Shroud : synonymous with Insulation support.

8.1.28 Shroud Connector : One half of a pin & socket connector at the mating end that is protected around the perimeter by a skirt (Partially Shrouded) or when each individual terminal is protected (fully shrouded).

8.1.29 Shroud Header : Usually on half of a PCB mounted connector that is shielded around all contacts by a skirt (Fully shrouded) or on 3 sides only (Partially Shrouded) sometimes called a shrouded wafer or base.

8.2 Abbreviation :

<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
123	- Lotus 123, Spreadsheet Management	MIS
8D	- Eight Discipline Corrective Action	QA
Acc	- Accept	QA
AP	- Accounts Payable	Account
APP'D	- Approved	All
AQL	- Acceptance Quality Level	QA
AR	- Accounts Receivable	Account
AR	- Awaiting Rework	MIS
AS	- Auto-Assembly	MIS
AS/400	- Application System/400 "(IBM Mini-Computer)"	All
Asst.	- Assistant	All
Assy	- Assembly	All
Attn	- Attention	All
Auth	- Authorise	All
Auto	- Automatical	All
AVL	- Approved Vendor List	Mat'l
AWG	- American Wire Gauge	Eng
BLK	- Black	Eng
BLU	- Blue	Eng
BOI	- Board of Investment	Mat'l
BOM	- Bill of Material	MIS
BRN	- Brown	Eng
BSI	- British Standards Institute	QA
Cal	- Calibration	QA
CL	- Control Language	MIS
CO	- Customer Order	MIS
CPU	- Central Processing Unit	MIS
CR	- Crimping	MIS
CRP	- Capacity Requirements Planning	MIS
CSA	- Canadian Standards Association	Eng
CSR	- Customer Service Representative	QA, Sales
Cust	- Customer	QA
C.S	- Crimping Specification	Eng



<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
DDS	- Data Description Specifications	MIS
Def.	- Defect	QA
Dept.	- Department	All
Doc.	- Document	QA
DOS	- Disk Operating System	MIS
DTD	- Dated	QA
DWG	- Drawing	Eng
EC	- European Community	QA
ECD	- Expected Complete Date	QA
ECN	- Engineering Change Notice	Eng
ECR	- Engineering Change Request	Eng
EDP	- Electronic Data Processing	MIS
Emp	- Employee	QA
Eng	- Engineer	QA
E-5267-NCX	- E-Engineering Drawing	Eng
E/T	- Electrical	QA
FA	- Financial Analysis/General Ledger	MIS
Fax	- Facsimile	QA
FG	- Finished Goods	MIS
FIFO	- First-In, First-Out	Mat'l
Fm	- From	All
F.A.	- First Article	QA
F.O.	- Factory Order	Mat'l
GB	- Gigabyte, Thousand Million Bytes	MIS
GI	- Goods Inwards	MIS
GM	- General Manager	QA
GRN	- Goods Receipt Note	MIS
GRN	- Green	Eng
CRY	- Gray	Eng
GR&R	- Gage Repeatability & Reproducibility	QA
HN	- Harness	MIS
hr	- Hour	Mat'l
HR	- Human Resources	HR
IM	- Item Master	MIS
IN	- Inventory Control	MIS
Insp.	- Inspection / Inspect	QA
IPQA	- Inprocess Quality Assurance	QA
IPQC	- Inprocess Quality Control	QA
IQA	- Incoming Quality Assurance	Mat'l
IQC	- In-Coming Quality Control	Mat'l
ISO	- International Standards Organization	QA
ITR	- Inspection Trouble Report	QA



<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
JC	= Job Card / Machine Utilisation	MIS
J.D.	= Job Description	QA
KB	= Kilobyte , Thousand Bytes	MIS
kg.	= Kilogram	Eng
LAN	= Local Area Network	MIS
LAR	= Lot Acceptance Rate	QA
LF	= Logical File	MIS
LRR	= Lot Rejection Rate	QA
MAU	= Multiple Access Unit	MIS
Max	= Maximum	All
Mb	= Megabytes , Million Bytes	MIS
MF	= Manufacturing	Mat'l
MFG	= Manufacturing	Mat'l
MGR	= Manager	Mat'l
MI	= Management Information	MIS
Mil-Std.	= Military Standard	QA
Min	= Minimum	QA
MIS	= Management Information Systems	MIS
MO	= Moulding	MIS
MRB	= Material Review Board	QA
MRP	= Material Requirements Planning	Mat'l
MRP II	= Manufacturing Resources Planning	MIS
MTC	= Manufacturing Code	Mat'l
Mat'l	= Material	Mat'l
Mtg	= Meeting	QA
MTH	= Molex Thailand	QA
MXS	= Molex Singapore	QA
MXT	= Molex Taiwan	QA
MXM	= Molex Malaysia	QA
M.	= Manual	Mfg.
mm.	= Millimeter	Eng
M/C	= Machine	Mat'l
No.	= Number	QA
NTS	= Not to Scale	Eng
N/A	= Not Applicable , Not Available	QA
Obj	= Object / Objective	QA
OIP	= Order , Inventory , Purchase	Mat'l
OP	= Operations	MIS
Opt.	= Optional	QA
OS-1	= Topcoated Wire	Eng

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1996 MAY 16

MTH DOCUMENT CONTROL

DC # 6

<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
PC	Personal Computer	MIS
PCS	Pieces	AI
PF	Physical File	MIS
PG	Plating	MIS
PO	Purchase Order	MIS
PP	Punch Press / Stamping	MIS
PPM	Part Per Million	QA
PR	Purchase Requisition	Mat'l
PR	Production , Harness Assembly	MIS
Prob.	Probability	QA
Prod.	Production	QA
Proj	Project	QA
PUR	Purple	Eng
PVC	Poly Vinyl Chloride	Eng
PW	Professional Write , Word Processing	MIS
P.E.	Process Engineer	QA
P/N	Part Number	Eng
P/Name	Part Name	Mat'l
QA	Quality Control , Harness Assembly	MIS
QA	Quality Assurance	QA
QC	Quality Control	MIS
QCC	Quality Control Circle	QA
QM	Quality Control , Crimping	MIS
QMR	Quality Management Representative	QA
QS	Quality System	QA
QTY	Quality	Eng
QW	Quality Control , Wire Out	MIS
Q.A.P.	Quality As Produced	QA
Q.M.	Quality Manual	QA
R	Range	QA
Rej	Reject	QA
Relia	Reliability	QA
RESP. ENG.	Responsible Engineer	Eng
REV	Revision	Eng
REVW	Review	Eng
RJ	Reject	MIS
RPG	Report Program Generator	MIS
Rpt	Report	QA
RS	Resource Structure	MIS
RTN	Return	QA
RTV	Return to Vendor	QA
RWK	Rework	QA

ORIGINAL
1996 MAY 16
MIS DEPARTMENT

<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
SA	Sales Analyst	MIS
SC	Standard Costing	MIS
SD	Sales Drawing	Eng
Sec	Section	QA
SF	Sales Forecasting	MIS
SH	Shipping	MIS
Sign	Signature	QA
SPC	Statistical Process Control	QA
Spec	Specification	QA
SQC	Statistical Quality Control	QA
Sr.	Senior	QA
Std.	Standard	QA
STR	Stranded Wire	Eng
Subj	Subject	QA
Sub-Con	Sub-Contractor	QA
Sup.	Supervisor	QA
S.D.	Standard Deviation	QA
S.O.P.	Standard Operation Procedure	Eng
S/C	Steering Committee	QA
TASC	Solid Tinned Wire	Eng
Tol	Tolerance	QA
TOPS	Team Oriented Problem Solving	QA
TQC	Total Quality Control	QA
TQM	Total Quality Management	QA
UAI	Use As Is	QA
UL	Underwriter Laboratory	Eng
UT	System Utilities	MIS
VDU	Video Display Unit	MIS
VMI	Visual Mechanical Inspection	QA
VN	Vendor	MIS
VS	Versus	Mat'l
WHT	White	Eng
WIP	Work In Process	QA
Wk	Week	QA
Wkly	Weekly	QA
WR	Wire Cut	MIS
WW	Worldwide	QA
W/H	Warehouse	Mat'l
W.I.	Work Instruction	QA



<u>Abbreviations</u>	<u>Meaning</u>	<u>Area Use</u>
X	Average	QA
YEL	Yellow	Eng
ZS	System Utilities	MIS
%	Percentage	QA
>	More Than	QA
<	Less Than	QA
=	Equal	QA
≥	More Than or Equal	QA
≤	Less Than or Equal	QA
~	Approximate	QA



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จุฬาลงกรณ์มหาวิทยาลัย

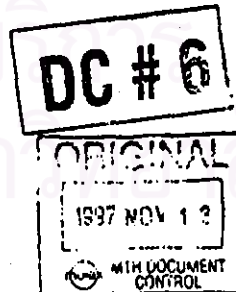




APPENDIX D
PACKING PROCEDURE
(MOLEX THAILAND, 1997)

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1. **Title :**
Packing Procedure
2. **Purpose :**
 - 2.1 To define the general standard packing procedure for Molex Thailand connectors and connector harness in shipping to Molex Thailand customer.
 - 2.2 To define the work station, packing operator and final inspection procedure.
3. **Scope :**
 - 3.1 This specification applies to the proper preparation inspection and general packing procedures for Molex Thailand. to ensure the proper shipment of parts to customer.
 - 3.2 Reference to Work Instruction of operation packing by customer.
4. **Reference :**
Drawing of carton boxes.
5. **Equipment / Material :**
 - 5.1 Carton Box Type : HA-0.5 (180x290x90 mm)
(WxLxH) HA-1 (200x400x200 mm)
HA-1.5 (300x400x200 mm)
HA-2 (400x400x200 mm)
HA-2.5 (300x620x200 mm)
 - 5.2 Plastic Bag Type : (5"x7") - Clear Colour
(WxL) (8"x11") - Clear Colour
(10"x15") - Clear Colour
(8"x11") - Blue Colour
(10"x15") - Blue Colour
 - 5.3 Adhesive Tape
 - 5.4 Rubber Band
 - 5.5 Air Bubble
 - 5.6 Plastic Tray
 - 5.7 Max Stapple No. 3416 size 5/8"
 - 5.8 Stappling Machine
 - 5.9 Weighting Scale
 - 5.10 Sealing Machine



6. Definition : Nil
7. General Requirement : Nil
8. Procedure

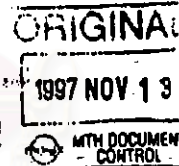
8.1 General Packing Procedure.

- 8.1.1 The working table must be free from any foreign material other than the parts to be worked on.
- 8.1.2 Only one type of product is allowed to be processed at any one time.
- 8.1.3 Packer must verify to ensure that the lot submitted is conforming to the part specified in the accompanying factory order route ticket for material traceability.
- 8.1.4 The factory order route ticket must accompany the lot at all time until the lot is packed out.
- 8.1.5 Packer should check the followings :-
- 8.1.5.1 Mixed Products
 - 8.1.5.2 Mixed Marking
 - 8.1.5.3 Mixed Part No.
- 8.1.6 If there are any problems with any lot submitted for packing, packing leader should report to warehouse chief to contact QA Supervisor or Production Supervisor.

8.2 Steps of Packing.

- 8.2.1 Quantity count.
- 8.2.1.1 Physical count
 - 8.2.1.2 Weight count (ref item 8.3)
- 8.2.2 Intermediate packing - Tie into bundles or packed into plastic bags with standard quantities 1, 10, 50, 100, 200, 500. To facilitate easy quantity check and to ensure sufficient protections are given to parts for shipment. This packing will be done by production area before pass to QA.
- 8.2.3 Packer Put "Final QA Tag" in each bundle or bag.
- 8.2.4 Final packaging - Pack into shipping carton and sealed.

Note : 8.2.3 and 8.2.4 will be done by packing area.

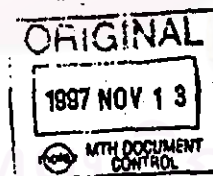


8.3 Weight Count for Intermediate Packing Quantity.

- a) **Weight count by production area.**
 - 8.3.1 Check a sample for correct part
 - 8.3.2 Use a calibrated electronic scale to weight count units.
 - 8.3.3 Turn the main switch to "on"
 - 8.3.4 Push cancel / reset button
 - 8.3.5 Count sample size
Refer to work instruction.
 - 8.3.6 Place sample size in the scale pan
 - 8.3.7 Push sample size button
 - 8.3.8 Add 1 or 2 units into the sample size to ensure that the scale reflects the correct increase in quantity which means that the calibration is completed and ready for weight count. If not, increase sample size and calibrate the scale again.
 - 8.3.9 Put units into scale pan to the required quantity and ready for intermediate packing.
- b) **Weight count by packing area**
Final packing in carton box will be weight and record gross weight (see item 8.4.5 of THMC- 0001) before store in finished goods warehouse.

8.4 Intermediate Packing Method.

- 8.4.1 **Connectors**
series and circuits of connectors.
 - 8.4.1.1 In plastic bag such as 5267 / 5268 / 70319 series
Put connector into plastic bag and seal and pack in to carton box q'ty of pack are shown in standard packing



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- Packing for 5267-5268
- Even number clear colour bag.
- odd number blue colour bag.



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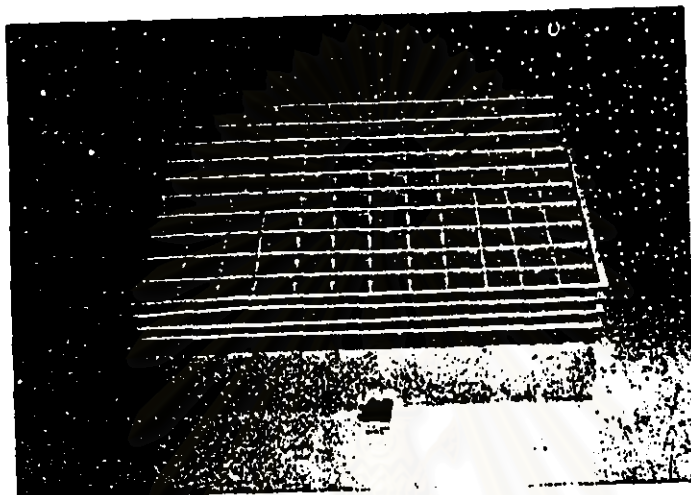
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8.4.1.2 In plastic tray such as edge card / Jack / 5597 series. Usually these connector will be packed first production line to prevent part damage. We also use these, plastic tray and pack into carton box q'ty of pack are shown in standard packing.



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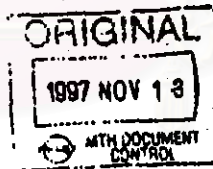
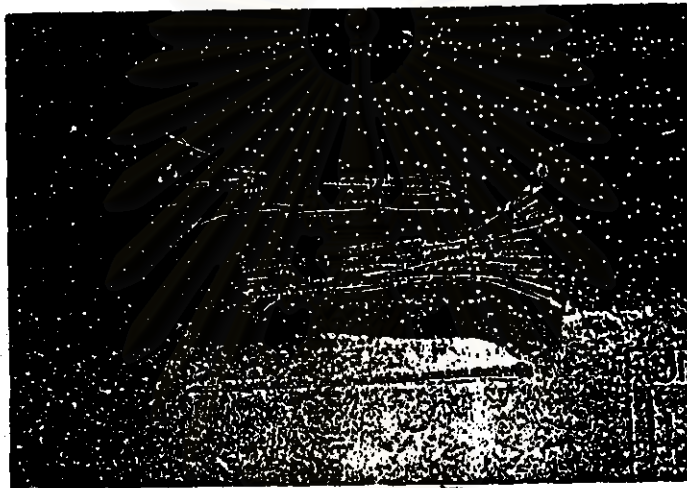
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8.4.2 Wire Harness

8.4.2.1 Tie into bundle with rubber band.

Units are tied either at both ends or at the centre of the bundle to ensure that it is neat and easy to handle.



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8.4.2.2 Pack in condition same as 8.4.2.1 but put into plastic bag to prevent damage and easily count and use.

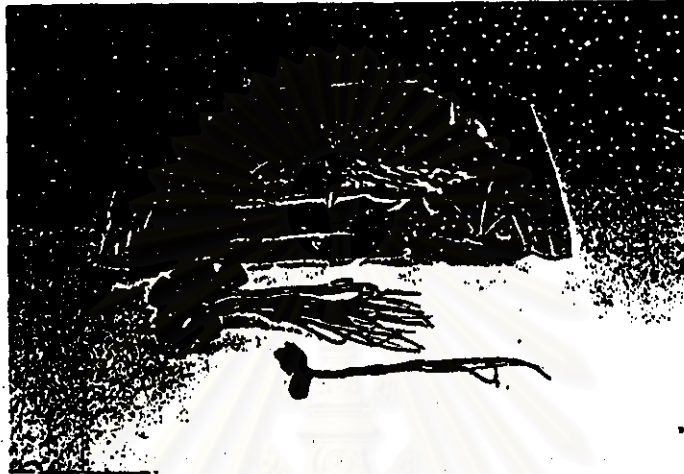


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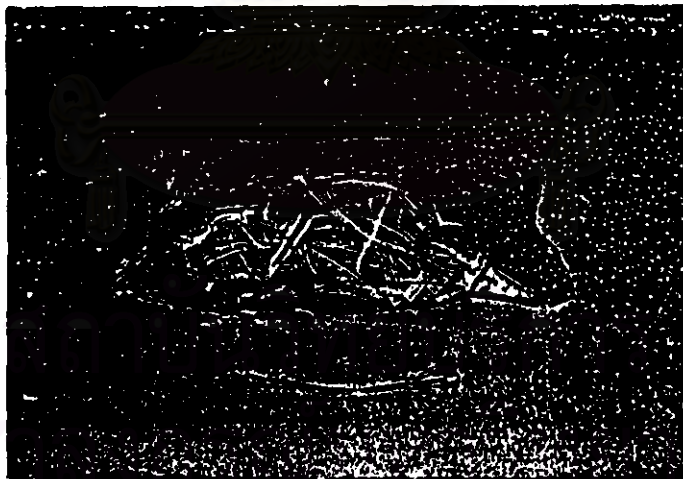
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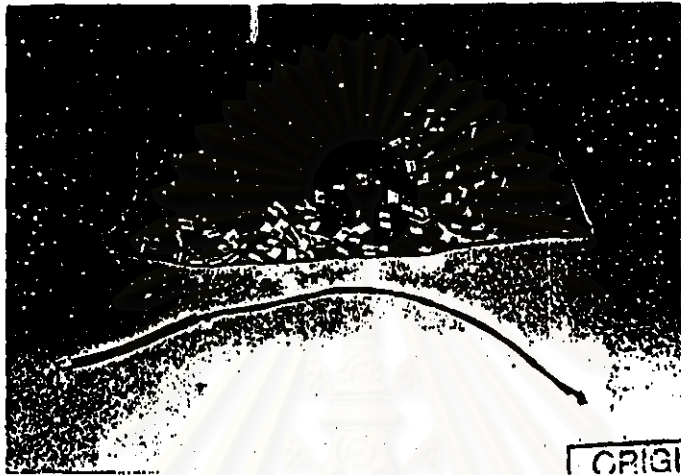


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8.4.2.3 Pack in plastic bag

Units are packed into plastic bag.





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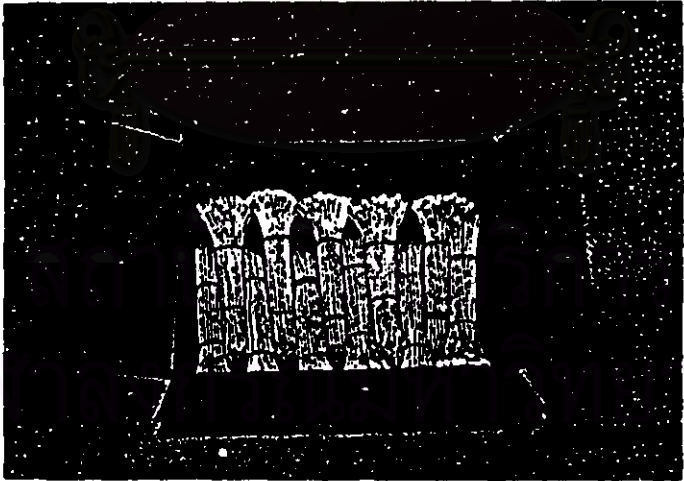

8.5 Final Packing In shipping Carton

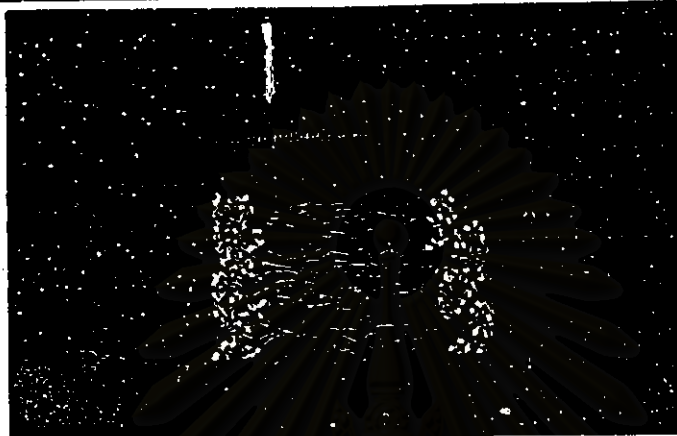
Packer receive finished goods which are packed (intermediate packing) from production line (pass QA.) step of final packing are as follow :

8.5.1 Check physical quantity against label quantity.

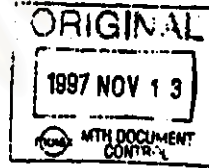
8.5.2 Arrange bundles or bag packed parts neatly in the carton

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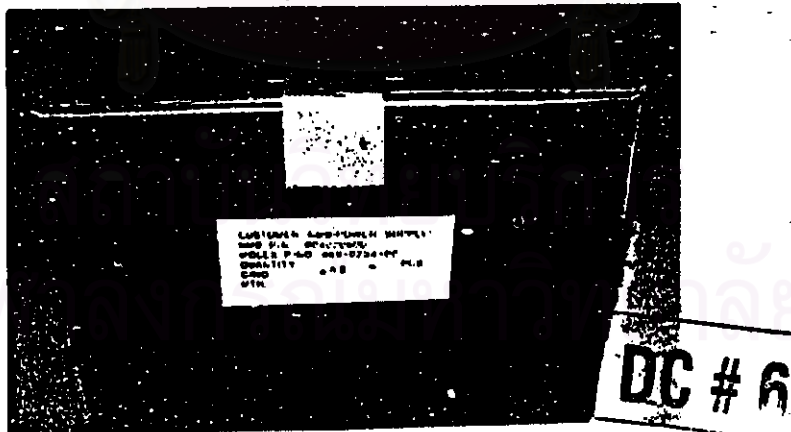


- 8.5.3 Cartons are to be sealed with adhesive tape
- 8.5.4 Label must be pasted at the designate area on the box. The following are to be printed clearly on the label.
 - 8.5.4.1 Customer Name
 - 8.5.4.2 Customer Part No.
 - 8.5.4.3 Molex Part No.
 - 8.5.4.4 Quantity
 - 8.5.4.5 C/No



* Lot No are shown in production tag.

- 8.5.5 FIFO stamp will be stamped on the box identify Day/Month/Year and tamp gross wt. and pack by.



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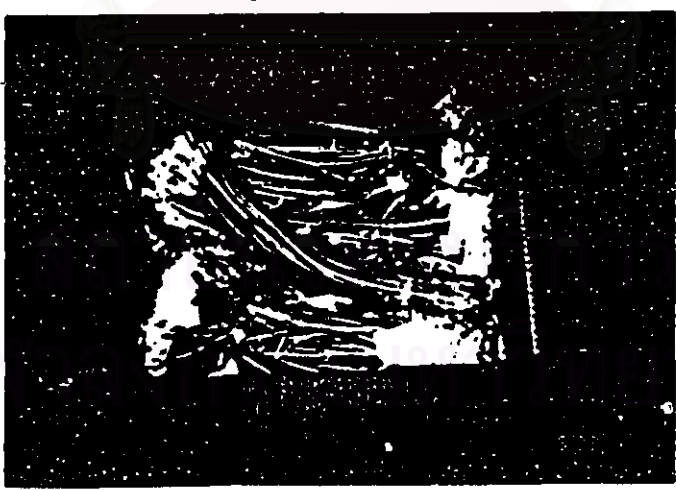
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- 8.5.6 No more than one type of finished product is allowed to be packed in the same box unless otherwise specified.
- 8.5.7 No torn or damaged carton box is allowed to be used in shipping finished goods to customer.
- 8.5.8 For customer who need UL Label sticker attached in the box such as "AT&T" Packing leader will ask QA to attach UL sticker on the box



DL # 6



8.3.9 Special Packing Requirement

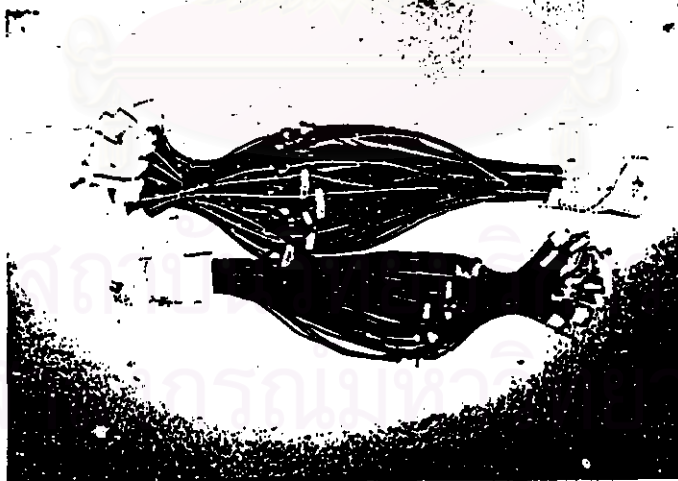
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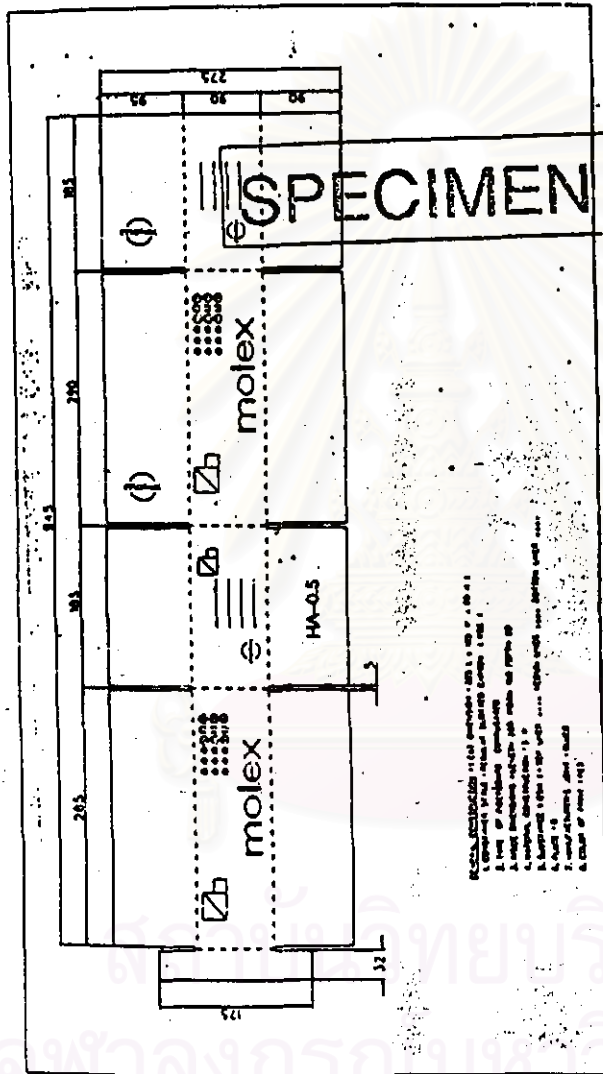
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Board in terminal such as Terminal Part # 5394 ,
87003-9000 , Etc...

for these customers ; NMB , Delta , Tatung shall be packed at the end
terminal with air bubble plastic to ensure no damage during
transportation.



Appendix A2

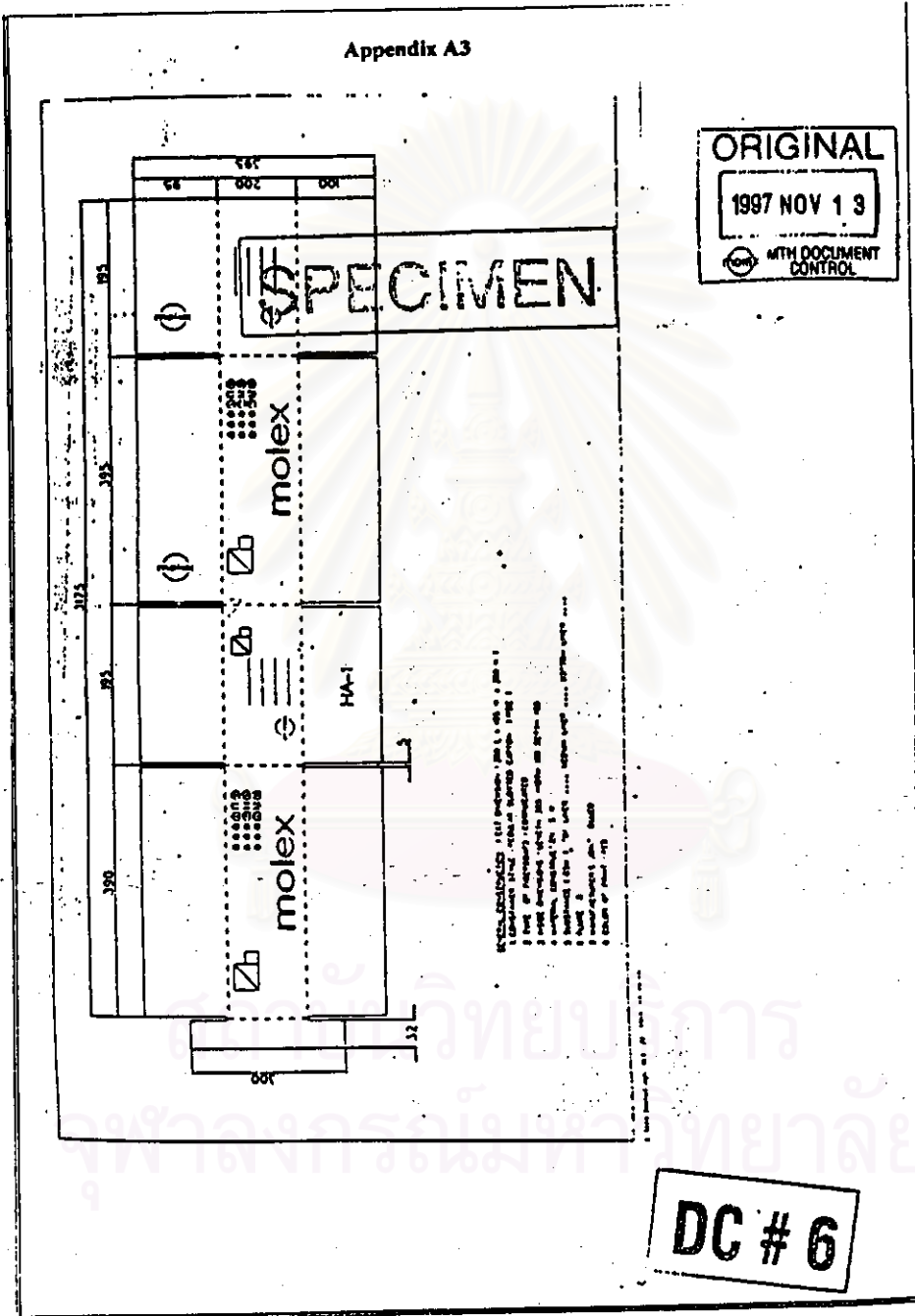


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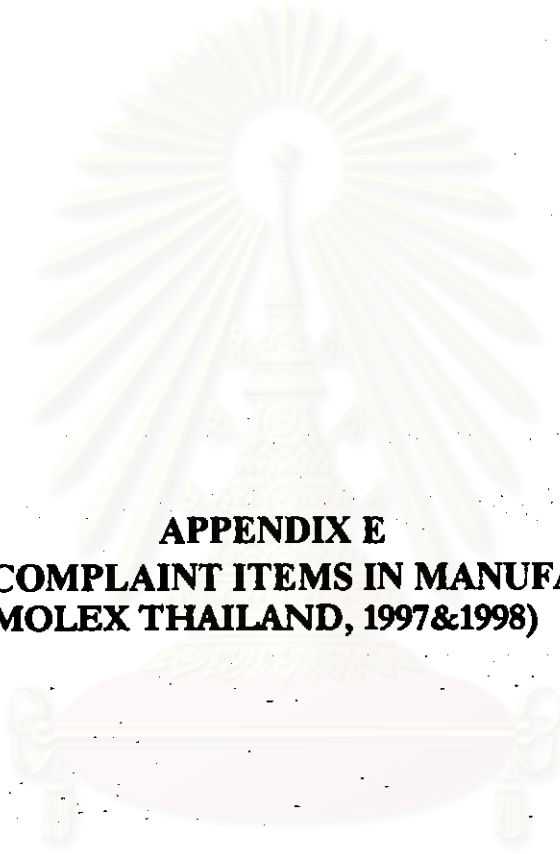
1. SPECIFICATION 1100
 2. MATERIAL 1100
 3. TYPING 1100
 4. DRAWING 1100
 5. PART NUMBER 1100
 6. DATE OF ISSUE 1100

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Appendix A3



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APPENDIX E
CUSTOMER COMPLAINT ITEMS IN MANUFACTURING AREA
(MOLEX THAILAND, 1997&1998)

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The percentage of customer complaints year to date in fiscal year 1997

	FY 1997											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Total Line Item Shipped	1,021	1,019	1,124	1,192	1,189	1,152	1,210	946	970	1,075	966	935
Manufacturing	2	3	8	7	7	2	5	3	2	6	5	3
% Complaints	0.196	0.294	0.712	0.587	0.589	0.174	0.413	0.317	0.206	0.558	0.518	0.321
Purchased Parts (or Direct Ship)	0	0	0	2	1	0	0	1	0	0	0	0
% Complaints	0.000	0.000	0.000	0.168	0.084	0.000	0.000	0.106	0.000	0.000	0.000	0.000
Design/Application	0	2	1	3	0	0	0	0	0	0	0	1
% Complaints	0.000	0.196	0.089	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.107
Cust. Service Sales	1	0	1	0	1	1	0	1	1	1	0	0
% Complaints	0.098	0.000	0.089	0.000	0.084	0.087	0.000	0.106	0.103	0.093	0.000	0.000
Warehouse	0	1	1	0	0	0	1	0	0	0	0	0
% Complaints	0.000	0.098	0.089	0.000	0.000	0.000	0.083	0.000	0.206	0.000	0.000	0.000
Total Line Item Complaints	3	6	11	12	9	3	6	5	5	7	5	4
% Complaints (Month)	0.294	0.589	0.975	1.007	0.757	0.260	0.496	0.529	0.515	0.651	0.518	0.428
Shipped	1,021	2,040	3,164	4,356	5,545	6,697	7,907	8,353	9,823	10,898	11,864	12,799
YTD. Line Item Complaints	3	9	20	32	41	44	50	55	60	67	72	76
% Complaints (YTD)	0.294	0.441	0.632	0.735	0.739	0.657	0.632	0.621	0.611	0.615	0.607	0.594
Monthly Goal	0.920	0.900	0.880	0.850	0.830	0.810	0.780	0.760	0.740	0.720	0.700	0.680
YTD. Goal!	0.920	0.910	0.900	0.890	0.880	0.870	0.850	0.840	0.830	0.820	0.810	0.800

From customer complaint items in manufacturing area in 1997, in this thesis, the comparison of customer complaint was done in table 7.1 chapter VII and summary was done in chapter VIII as well. In the comparison of customer complaint reduction, there are two source of data which can find out in this appendix E.

In page 227, customer complaint items in manufacturing area in April 97 is equal to "6" and in May 97 is equal to "5" and in June 97 is equal to "3". These data was used in Chapter VII table 7.1 and was used in chapter VIII as well.

In page 228, customer complaint items in manufacturing area in July 97 is equal to "4" and in August 97 is equal to "5" and in September 97 is equal to "5" and in October 97 is equal to "4" In this page 228, customer complaints in manufacturing area in April 98 is equal to "4" and in May 98 is equal to "3" and June 98 is equal to "2". These described data was used in table 7.1 and was used in chapter VIII.

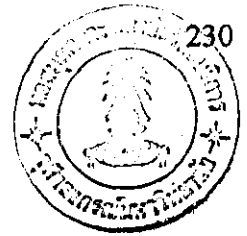
For customer complaint items in manufacturing area from July 98 to October 98 are described as following.

The outstanding of customer complaint item in manufacturing area year to date in fiscal year 1999

Molex Thailand got customer complaint items in manufacturing area in July 98, August 98, September 98 and October 98 as shown following.

Month	Customer complaint items in manufacturing area
July 98	3
August 98	2
September 98	2
October 98	2

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VITA

Phisit Charoenkitwiwat was born on September 20, 1972 in Bangkok Thailand. He graduated high school from Saint Gabriel's College and obtained his Bachelor's degree major in Electronics Engineering from Assumption University in 1993. Then he continued his graduate study in Engineering Management at the Regional Centre for Manufacturing System Engineering at Chulalongkorn University in 1996. After he graduated Bachelor's degree, he joined Interphonet Construction as a Project Engineer as the last position and after that he joined The Better Environment Company as a Sales Engineer.

Now he works for Molex Thailand Ltd and he started with Sales Engineer and promoted to Export Sales Engineer as a current position. He is fully responsible for

- 1) Promoting Molex range of products by
 - a) Having a through knowledge of Molex product range, manufacturing process and company capabilities including leadtime, pricing strategies, production capabilities and QC standards.
 - b) Understanding product application and tooling
 - c) Understanding specifications of competitors products versus our own and comprehending the strengths and weaknesses of competitors capabilities and products.
 - d) To organize/conduct presentations to customers either on his own or with assistance from colleagues.
- 2) To provide constant feedback to Molex on customer requirement by means of education fellow Molex Employees on their needs such as QC standard, leadtime requirements, forecast builds, pricing, trends and etc. To help the company to service the customers even better.
- 3) To keep sales co-ordinators, supervisors, managers plus other relevant department colleagues abreast at customer by means of updating project information.
- 4) To support/coach more junior sales staff and customer service representative to help upgrade their skill and knowledge.
- 5) Provide speedy turnaround to all customer enquiries within 24 hours
- 6) Assist customer service representative in solving customer quality/deliver problem, effective and timely manner by laising with colleagues from other departments and oversea entities.



Bringing People & Technology Together, Worldwide™

MEMORANDUM

From : Setthasorn Charoenphanich
Sales Manager / Co-Advisor
Pages : 1 (incl. this page)
Subject : Molex (Thailand) Ltd.

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Sincerely Yours,


Setthasorn Charoenphanich

