

產品編號 Product Number : 6605122BSS
(110 TYPE FEMALE TERMINAL)

項目	內容	頁數	備註
1	Design Records of Saleable Product 設計記錄	V 1	Drawing Name : 110 TYPE FEMALE TERMINAL 圖名：產品規格圖
2	Engineering Change Documents (if any) 變更文件〔若有〕		N/A 無
3	Customer Engineering approval (if require) 工程設計核准〔若要求〕		N/A 無
4	Design FMEA 設計FMEA		N/A 無
5	Process Flow Diagrams 生產流程圖	V 1	Process Flow Diagrams 生產流程圖
6	Process FMEA 製程FMEA	V 4	FMEA 失效模式與效應分析
7	Control Plan 管制計劃	V 3	Control Plan 管制計劃
8	Measurement System Analysis Studies 量測系統分析	V 1	R & R Analysis 量測設備再現性與再生性分析表
9	Dimensional /Performance Test Results 尺寸/性能測試結果	V 1	I.S.I.R. & Performance Report 初期樣品檢驗報告與產品性能試驗綜合報告
10	Material Results 材料結果	V 1	Material Report 材質證明
11	Initial Process Study 初期製程研究	V 2	X-Bar R Chart 平均值與全距管制圖
12	Qualified Laboratory Documentat 認可實驗室文件		N/A 無
13	Appearance Approval Report (AAR) 外觀核准書報告		Inappropriate 不適用
14	Sample Product 產品樣品		Sample Product
15	Master Sample 主樣品		Undemanding 無需求
16	Checking Aids 檢查輔助器材		N/A 無
17	Records of Compliance with Customer-Specific Requirements 客戶特定要求之完整記錄		Certificate of non-use of The Controlled Substances 環境管理物質不使用證明書
18	Part Submission Warrant (PSW 送審保證書	V 1	PSW 送審保證書
	Bulk Material Requirements Checklist 散裝材料檢查表		Inappropriate 不適用



胡連精密股份有限公司
Hu Lane Associate Inc.

Part Submission Warrant

送審保證書

Part Name 零組件名稱 <u>110 TYPE FEMALE TERMINAL</u>		Cust. Part Number 零件號碼	
Shown on Drawing Number 所示圖紙編號 <u>605122</u>		Org. Part Number 組織零件編號 <u>6605122BSS</u>	
Engineering Change Level 工程變更等級 <u>4.2</u>		Dated 日期 <u>2012/6/4</u>	
Additional Engineering Changes 附加的工程變更		Dated 日期	
Safety and/or Government Regulation <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否		Purchase Order No. 採購訂單號碼	
安全規定 / 政府法規		Weight (kg) 重量 (公斤) <u>0.00025</u>	
Checking Aid No. 輔助檢具號碼		Dated 日期	
Checking Aid Engineering Change Level 輔助檢具工程變更版次			

ORGANIZATION MANUFACTURING INFORMATION 組織製造廠訊息	CUSTOMER SUBMITTAL INFORMATION 提交顧客訊息
HU LANE ASSOCIATE INC.	WWELK
Organization Name and Supplier Code / Vendor Code 組織名稱和供應商 / 供應商代碼 NO. 68, HUAH HO ST.	Customer Name / Division 顧客名稱 / 部門
Street Address 街道地址 Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)	Buyer / Buyer Code 採購人員 / 採購人員代碼
City 城市 Region 地區 Postal Code 郵遞區號 Country 國家	Application 適用範圍

MATERIALS REPORTING 材料報告

Has customer-required Substances of Concern information been reported?
顧客要求的受關注物質訊息是否已報告? ☐ Yes 是 ☐ No 否 ☒ n/a 無

Submitted by IMDS or other customer format 透過IMDS報告或用顧客規定的其他表格報告: 509718119

Are polymeric parts identified with appropriate ISO marking codes?
塑膠件是否已標註相應的ISO標示編碼? ☐ Yes 是 ☒ No 否 ☐ n/a 無

REASON FOR SUBMISSION 送件理由

☒ Initial submission 首次提交 ☐ Change to Optional Construction or Material 物料變更

☐ Engineering Change (s) 工程變更 ☐ Sub-Supplier or Material Source Change 供應商或材料來源變更

☐ Tooling: Transfer, Replacement, Refurbishment, or additional
工裝: 轉移、更換、整修或添加 ☐ Change in Part Processing 零件製程變更

☐ Correction of Discrepancy 差異之修正 ☐ Parts produced at Additional Location 新廠生產之零件

☐ Tooling Inactive > than 1 year 工、模具停產超過一年 ☐ Other - please specify below 其它 - 請敘述

REQUESTED SUBMISSION LEVEL (Check one) 要求送件層級 (選一項)

☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
第一級只提交保證書 (若指定為外觀項目, 還應提交外觀核准報告)。

☐ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
第二級提交保證書、產品樣品及部份資料。

☒ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
第三級提交保證書、產品樣品及完整資料。

☐ Level 4 - Warrant and other requirements as defined by customer.
第四級提交保證書、客戶指定資料。

☐ Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.
第五級保證書、產品樣品和完整資料保留在組織製造現場, 供審查時使用。

SUBMISSION RESULTS 送件結果

☒ dimensional measurements 尺寸量測 ☒ material and functional tests 材料及性能測試 ☐ appearance criteria 外觀評估 ☒ statistical process package 統計數據

These results meet all drawing and specification requirements 以上結果是否符合所有圖面及規格要求:
☒ Yes 是 ☐ No (If "NO" - Explanation Required) 否 (如果「否」務必說明)

MOLD模型 / Cavity多模穴 / Production Process製造流程:

DECLARATION 聲明 Get material -> Production -> Package -> Move to warehouse

I affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all PPAP Manual 4th Edition Requirements. I further affirm that these samples were produced at the rate of 19.2K / 1 hrs. I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.
本人確定本保證所提出之樣品係本廠承製零件之代表, 依PPAP第四版要求所生產, 我保證此樣品 19.2K 件 / 1 小時之生產數量所完成的; 所有符合性證明文件都已歸檔備妥, 以供審查, 並說明任何與此聲明有偏差的內容, 見下文。

EXPLANATION/COMMENTS 說明 / 建議:

Is each Customer Tool properly tagged and numbered? 每種顧客的工具是否都已適當加標籤和編號? ☐ Yes 是 ☐ No 否

Organization Authorized Signature 經授權的組織代表簽名 Ryan kao Date 日期 2014/11/21

Print Name 印刷體姓名 Ryan kao Phone No. 電話 (02)2694-0551#1501 Fax 傳真 886-2-2694-8700

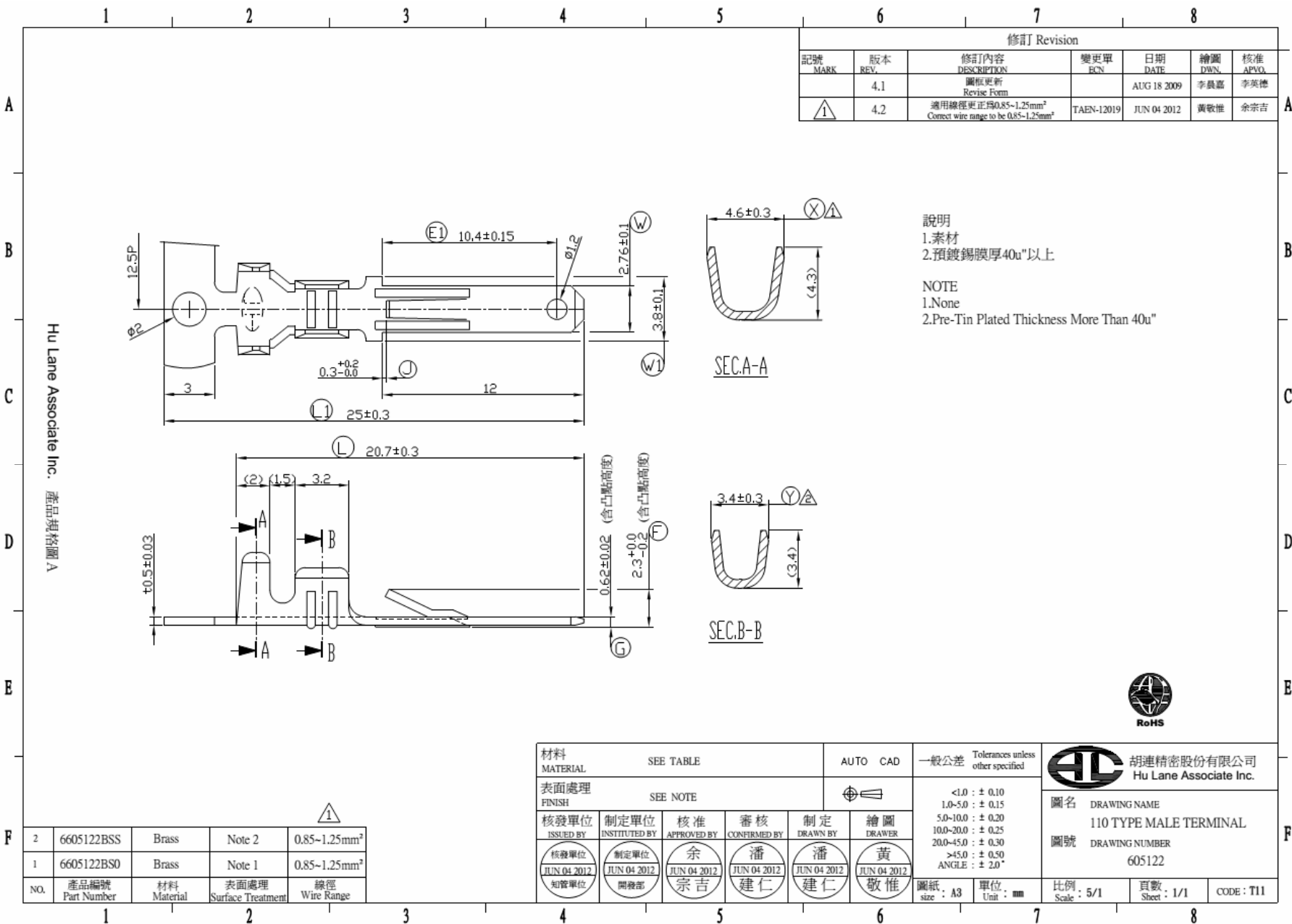
Title 職務 Supervisor E-mail A0933@hulane.com.tw

FOR CUSTOMER USE ONLY (IF APPLICABLE) 顧客專用欄 (若適用)

PPAP Warrant Disposition 保證書處理意見: ☐ Approved 核准 ☐ Rejected 拒收 ☐ Other 其他:

Customer Signature 經授權的組織代表簽名 _____ Date 日期 _____

Print Name 印刷體姓名 _____ Customer Tracking Number 顧客追蹤編號 _____



[illegible]

CERTIFICATE OF TEST

1 / 1

Customer : TWN HU LANE (T.K.)

Sheet No. : 3S1E8K0010

Specification : JIS H 3100

Material : C2680R-H0.5X310

Size : 0.500 (mm) X 310.000 (mm) X 0.000 (mm)

Date : 2014.08.27

POONGSAN

Onsan Plant :

611, DaeJung-Ri, Onsan-Up, Ulju-Kun,

Ulsan Metropolitan City, Korea

Tel : (052) 231-9114

Fax : (052) 231-9400

	Cu (%)	Zn (%)	Pb (%)	Fe (%)	Tensile Strength (N/mm ²)
SPEC. Min	64.0000	R			420.000
MAX	68.0000		0.0500	0.0500	530.000
48795D0	64.7800	R	0.0042	0.0054	482.487
- Blank Line -					
	Elongation (%)	Hardness (Hv 5kg)	GrainSize (mm)	Conductivity (%IACS)	Thickness (Outdiameter) (mm)
SPEC. Min	15.000	145.000		10.000	0.490
MAX		165.000	0.015		0.510
48795D0	19.000	153.000	0.010	26.200	0.495 0.503
- Blank Line -					
	Width (Thickness) (mm)	BendingTest (Badway)	Appearance	Weight (kg)	
SPEC. Min	309.750	(180°,			
MAX	310.250	R/t=0.5)			
48795D0	309.900 310.100	Good	Good	1,185.000	
- Blank Line -					

ORIGINAL

POONGSAN CO., LTD.

2014.08.27

ORIGINAL

Total Weight : 1,185.000 (kg)

Remark : We hereby certify that above material has been tested to comply with the specification.









* 1 kg/mm² = 9.806 N/mm²

S.P. Yoon

Manager of Quality Assurance Dept.

PROCESS FLOW DIAGRAM

Part Certification

Family name					Date (Orig.)	Prepared by	
					2008/12/20	DAVID WANG	
Part Number					Date (Rev.)	Title	
0					N/A	Product Engineer	
Part Name					Page	Phone Number	
110 TYPE FEMALE TERMINAL							
Cross Functional Team Members							Symbol Key:  Manufacturing/Assembly  Movement of Materials/Parts  Storage of Materials/Parts  Inspection
K. C. CHEN, CHUN MIN LAI, BO BO CHANG, FKP, SWC, CO CO, FANNY							
Step #	Fab	Move	Store	Insp	Operation description	Item #	Special Characteristics
							
10		*			Receiving Material		label,material weight contact supervisor
20				*	Incoming Inspection		dimensional thickness,width,hardness,tensile strength,percentage elongation
30			*		Storage		storage specification contact supervisor
40	*				To get material		label contact supervisor
50	*				To set up a mold		process speed tool and process adjustments
60	*				Stamping		visuals,gages tool and process adjustments
70				*	process quality Inspection		dimensional,visual,performance W,W1,F,F1,G,J,L,L1,X,Y,E1
80	*				Production(Labeling)		label quantity
90				*	Final Inspection		dimensional,visual,performance W,W1,F,G,J,L,L1,X,Y,E1
100			*		Storage		
110		*			Deliving		

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS

Production Part Approval Process

☐ Design FMEA

☐ Process FMEA

☐ GM Restricted

<input type="radio"/> System		<input type="radio"/> Subsystem		<input checked="" type="radio"/> Component		Page		FMEA Number							
Part Number 0				Design or Process Responsibility Ryan kao				Prepared by Ryan kao				Telephone # 886-2-2695-0551#1501			
Model Year(s) / Vehicle(s) 605122				Key Date				Original FMEA Date 2008.12.20				FMEA Revision Date N/A			

Core Team
K. C. CHEN, STEVEN PAN, BO BO CHANG, FKP, SWC, CO CO, FANNY

Design Item or Process Function Requirements	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Class	Potential Cause(s) / Mechanism(s) of Failure	Occurrence	Current preventive to Process Controls	Current Design or Process Controls	Det	RPN	Recommended Actions	Responsibility & Target Completion Date	Actions Taken	Severity	Occurrence	Det	RPN
Receiving Material	to receive wrong material	Material account not symbol	4		supply wrong material	1		check material account & supply quality manager	7	28							
Incoming Inspection	In the raw material has the impurity	material pollution	2		Material problem	3		incoming quality inspection	5	30							
Storage	wet the material	product funtion fail	4		the Storage got out of control Storage	1		Thermometer & Thermometer check list	7	28							
To get material	1.Picking wrong items	1.Extruding, damaged mold, extraordinary quality	5		A. Wrong picking card	1		A. The operational process of the product structure system	7	35							
					B. Mixed items	1		B.C. Multi control and examination during picking, mold-erecting, initial items and changing items	5	25							
					C. Wrong mark	1				5							
	2. Picking the items of wrong specifications	1.Cause abnormality in quality	5		A. Careless inspection	1		A Assure the accurate quality of the end items	7	35							
To set up a mold	1.The module is not fixed up	1. This might cause the up and the down module to deviate from the mold and be damaged	4		A. Screws not tighten up	1		A. Managed by the operator	7	28							
(Fix the module)		2. The depth is not fixed up that causes the quality of the terminal (highly) unstable	4		B. Over tightened screws that cause a break	1		B. Managed by the mold-erecting personnel	5	20							
					C. Over tightened screws that cause a crack (not break)	1		C. Non	8	32							

[illegible]

			G	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	6	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			J	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	6	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			L	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	6	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			L 1	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	6	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			X	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	6	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			Y	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			E 1	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
Stamping	1.defected surface	Customer complaint	5	A defected material	1		A modeling staff modeling reconfirmation B. operation, QP staff independence; initial product; independence; circular; final eyesight tes	2 2	10						
Production (Labeling)	1.wrong label	1. Wrong transfer, wrong account 2. Client misuse; Complaint	3 7	A. . Wrong label B. the old label remained removed, or deleted C. Wrong data	2 2 2		A chief approval; independence; final test; material control B operator independence; final test control	3 3 3	42	1.QUANTITY TO CONTROL. 2.OLD LABEL TO RETRIEVE IT.	MANUFACTURE				
Final Inspection	1. Size wrong 2. Function fail	Insufficient function	7	W A. defected material B. mode wear C. improper staff operation D.equipment abnormal	2 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing circular: final test by rule	3 3 3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
			W 1	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				

				F	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				G	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				J	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				L	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				L 1	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				X	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				Y	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
				E 1	A. defected material B. mode wear C. improper staff operation D.equipment abnormal	1 2 2 2		A. modeling reconfirmation B operation; QC staff initial product; material passing, circular: final test by rule	3	42	1.TOOLING MOLD 2.USE DIGITAL MACHINE VISION 100% CHEAK	ENGINEER				
Storage	products to damage	product funtion fail	4		the Storage got out of control Storage	2		packing check list	7	5 6	1.EVERYDAY STORAGE AREA CHECK THERMOMETER. 2.TRAIN OPERATOR PRODUCTION STORAGE.	STORAGE				
Deliving	The feed bag bursts	product funtion or surface fail	2		The feed bag damage	2		supply quality manager	4	1 6						

CONTROL PLAN

Part Certification

HU LANE ASSOCIATE INC.

Control Plan Category <input type="radio"/> Prototype <input type="radio"/> Pre-Launch <input checked="" type="radio"/> Production		Key Contact Name SUPER HU	Date (Orig) 2008/12/20	Date (Rev) N/A	Page
Control Plan Number		Key Contact Phone 886-2-2694-0551	Customer Engineering Approval (If Req'd)		Date (If Req'd)
Part Number 0	ECL	Supplier / Plant Approval / Date	Customer Quality Approval (If Req'd)		Date (If Req'd)
Part Name / Description 110 TYPE FEMALE TERMINAL		Other supplier approval by (If Req'd)	Other Approval (If Req'd)		Date (If req'd)
Supplier / Plant HU LANE ASSOCIATE INC.	Supplier Code	Other Approval Date (If Req'd)			

Core team Members

K. C. CHEN, SUPER HU , BO BO CHANG, CO CO, FANNY

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics			Special Char. Class.	Methods					Reaction Plan
			No.	Product	Process		Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
10	Receiving Material			LABEL QUANTITY	PERFORMANCE		PERFORMANCE RECORD		ONCE	100%	Visual insp.	PUT OUT THEN REPORT TO PURCHASER
20	Incoming Inspection			MATERIAL WIDTH			37.0 +0 -0.1 mm	VERNIER CALIPER	per lot package/roll 1~5: 1PC 6~10: 2PCS 11~20: 3PCS 21~30: 4PCS 31~40: 5PCS 41~50: 6PCS 51~60: 7PCS 61: 8PCS		CHECK "RECEIVING RECEIPT" SPECIFICALLY FOR Part No.	segregate, put out then report to supervisor and purchaser
				MATERIAL THICKNESS			0.50 ±0.01mm	MICROMETER				
				TENSILE STRENGTH			420~530(N/mm ²)	MICRO-COMPUTER UNIVERSAL TESTING MACHINE				
				ELONGATION RATE			>15%					
				HARDNESS			145~165(HV)	Micro-Vickers. HARDNESS TESTER				
30	Storage			AVOIDING DAMP			PACKAGE AND stack layers	Visual insp.	ONCE	100%	RECEIVING RECEIPT	PUT OUT
40	To get material	STAMPING PRESS		STOCK SPECIFICATION			REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3086	REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3052			ISSUE MATERIAL ACCORDING TO PICKING CARD	REPORT TO SUPERVISER
50	To set up a mold	STAMPING PRESS		REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167			REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167	REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167			MOLD MAINTENANCE RECORD	CONTACT SUPERVISER
60	Stamping	STAMPING PRESS		REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167			REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167	REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3167			MOLD MAINTENANCE RECORD	CONTACT SUPERVISER

CONTROL PLAN

Part Certification

HU LANE ASSOCIATE INC.

Control Plan Category <input type="radio"/> Prototype <input type="radio"/> Pre-Launch <input checked="" type="radio"/> Production		Key Contact Name SUPER HU	Date (Orig) 2008/12/20	Date (Rev) N/A	Page
Control Plan Number		Key Contact Phone 886-2-2694-0551	Customer Engineering Approval (If Req'd)		Date (If Req'd)
Part Number 0	ECL	Supplier / Plant Approval / Date	Customer Quality Approval (If Req'd)		Date (If Req'd)
Part Name / Description 110 TYPE FMALE TERMINAL		Other supplier approval by (If Req'd)	Other Approval (If Req'd)		Date (If req'd)
Supplier / Plant HU LANE ASSOCIATE INC.	Supplier Code	Other Approval Date (If Req'd)			

Core team Members

K. C. CHEN, SUPER HU , BO BO CHANG, CO CO, FANNY

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics			Special Char. Class.	Methods					Reaction Plan
			No.	Product	Process		Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
70	process quality Inspection	STAMPING PRESS		W		SPC	2.76 ± 0.05	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				W1			3.80 ± 0.06	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				F			2.30 +0.00-0.20	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				F1			1.20 +0.00-0.10	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				G			0.62 ± 0.02	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				J			0.30 +0.20-0.00	PROJECTOR	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				L			20.70 ± 0.20	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				L1			25.00 ± 0.30	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				X			4.60 ± 0.20	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				Y			3.40 ± 0.20	CALIPERS	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel
				E1			10.40 ± 0.15	PROJECTOR	5PCS	20Min	INITIAL SAMPLE INSPECTION REPORT	CONTACT mold-erecting personnel

CONTROL PLAN

Part Certification

HU LANE ASSOCIATE INC.

Control Plan Category <input type="radio"/> Prototype <input type="radio"/> Pre-Launch <input checked="" type="radio"/> Production		Key Contact Name SUPER HU	Date (Orig) 2008/12/20	Date (Rev) N/A	Page
Control Plan Number		Key Contact Phone 886-2-2694-0551	Customer Engineering Approval (If Req'd)		Date (If Req'd)
Part Number 0	ECL	Supplier / Plant Approval / Date	Customer Quality Approval (If Req'd)		Date (If Req'd)
Part Name / Description 110 TYPE FEMALE TERMINAL		Other supplier approval by (If Req'd)	Other Approval (If Req'd)		Date (If req'd)
Supplier / Plant HU LANE ASSOCIATE INC.	Supplier Code	Other Approval Date (If Req'd)			

Core team Members

K. C. CHEN, SUPER HU , BO BO CHANG, CO CO, FANNY

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics			Special Char. Class.	Methods					Reaction Plan
			No.	Product	Process		Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
80	PRODUCTION	STAMPING PRESS		REF. PART SPECIFIC CONTROL PLAN DOCUMENTS			REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3125	REF. PART SPECIFIC CONTROL PLAN DOCUMENTS NO.3125			DAILY PRODUCTION REPORT	CONTACT mold-erecting personnel
90	FINAL INSPECTION			W		SPC	2.76 ± 0.10	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				W1			3.80 ± 0.10	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				F			2.30 +0.00-0.20	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				G			0.62 ± 0.02	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				J			0.30 +0.20-0.00	PROJECTOR	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				L			20.70 ± 0.30	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				L1			25.00 ± 0.30	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				X			4.60 ± 0.30	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				Y			3.40 ± 0.30	CALIPERS	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
				E1			10.40 ± 0.15	PROJECTOR	5PCS	1DAY	PRODUCT INSPECTION REPORT	CONTACT mold-erecting personnel
100	Storage			AVOIDING DAMP/stack layers			4 layers max	visual	100%	per lot	WAREHOUSE WARRANT	segregate、review or adjust the storage envrenement
110	Deliving				label		customer requirement	visual	100%	per lot	PACKING LIST	segregate and sort

PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

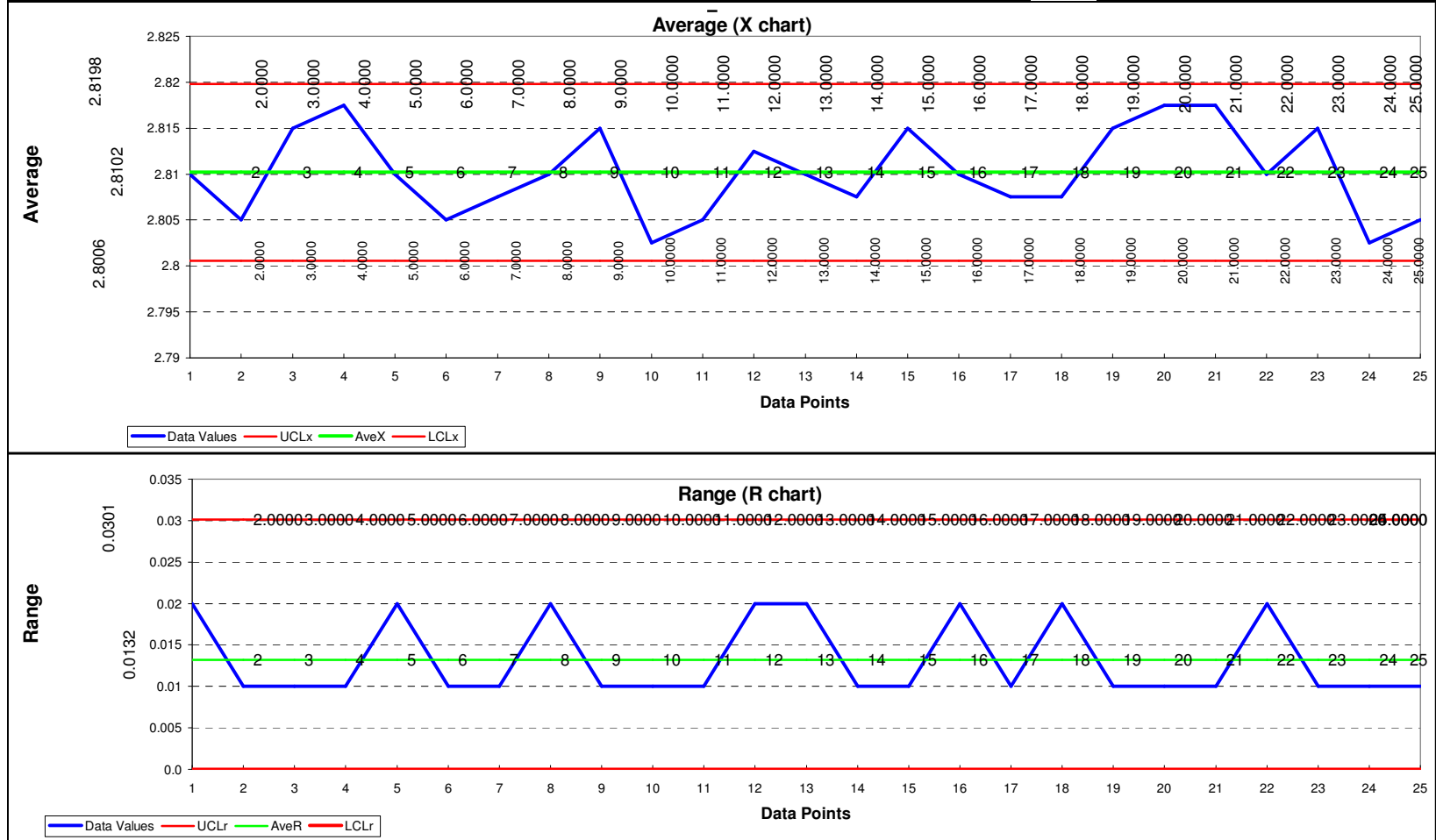
Part Certification

☒ Two sided spec (bilateral)
 ☐ One sided (MIN)
 ☐ One sided (MAX)

Number of readings per subgroup **4**

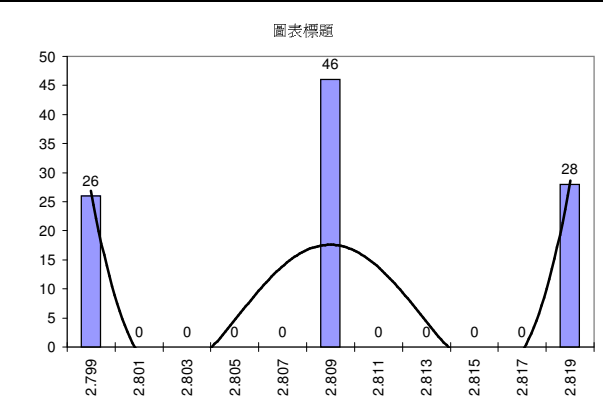
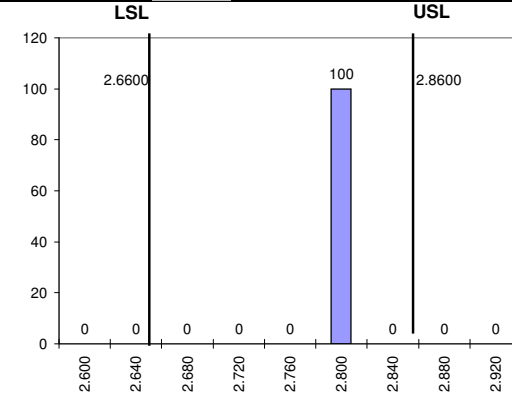
LOCATION PART	Plant	HSICHIH CITY,TAIPEI HSIEN,TAIWAN,R.O.C.			Dept:	Quality inspection	Date:	2014/11/21
	Part number:	0			Part description	110 TYPE FMALE TERMINAL		
TOOL DIMENSION	Drawing number	605122			Eng. chg. level	4.2		
	Tool number	605122			# Cavities			
	Description	W			Units	mm		
	SPEC	2.76			PLUS	0.1	MINUS	0.1
	Lower Spc	2.66			NOMINAL	2.76	Upper Spc	2.86

PROCESS INFORMATION			
Significant trends of data po	X Chart	R Chart	
Increasing RUN LENGTH	4	2	
HOW MANY RUNS	0	0	
Decreasing RUN LENGTH	3	3	
HOW MANY RUNS	0	0	
Out of control limits	0	0	
Consecutive data points above avg.	3	2	
Consecutive data points below avg.	4	3	



PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

LOCATION PART	Plant		HSICHIH CITY,TAIPEI HSIEN,TAIWAN,R.O.C.				Dept:		Quality inspection		Date:		2014/11/21		DESCRIPTIVE STATISTICS						VALUES														
	Part number:		0				Part description		110 TYPE FMALE TERMINAL						Number of readings						100														
	Drawing number		605122				Eng. chg. level		4.2						Lower spec limit (LSL)						2.6600														
	Tool number		605122				# Cavities								Nominal						2.7600														
TOOL DIMENSION	Description		W				Units		mm						Upper spec limit (USL)						2.8600														
	SPEC		2.76		PLUS		0.1		MINUS		0.1		Total sum						281.0200																
	Lwr Spec		2.66		NOMINAL		2.76		Upr Spec		2.86		Average readings (\bar{x})						2.8102																
	HISTOGRAM WITHOUT LIMITS														HISTOGRAM WITH LIMITS																				
																												Maximum						2.8200	
														Minimum						2.8000															
														Readings below LSL						0															
														Readings above USL						0															
														Average Range (R)						0.0132															
														D ₂ Value n = 4						2.0590															
														Upper capability index (CPU)						2.5893															
														Lower capability index (CPL)						7.8096															
														Capability index (C _p)						5.1995															
														Process Capability (C _{pk})						2.5893															
														Capability ratio (CR)						0.1923															
														Std Deviation (n-1)						0.0074															
														Std Deviation (n)						0.0073															
														Variance (n-1)						0.0001															
														Variance (n)						0.0001															
														Performance index (P _p)						4.5150															
														Performance ratio (PR)						0.2215															
														Performance index (P _{pk})						2.2485															
S U B G R O U P S																																			
R E A D I N G S	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20														
	1	2.81	2.80	2.81	2.81	2.80	2.81	2.80	2.82	2.82	2.80	2.81	2.81	2.80	2.81	2.82	2.81	2.81	2.80	2.81	2.81														
	2	2.80	2.80	2.81	2.82	2.81	2.80	2.81	2.81	2.81	2.80	2.80	2.80	2.81	2.81	2.82	2.81	2.81	2.80	2.81	2.82														
	3	2.82	2.81	2.82	2.82	2.82	2.81	2.81	2.80	2.81	2.81	2.80	2.82	2.81	2.80	2.81	2.80	2.81	2.81	2.82	2.82														
	4	2.81	2.81	2.82	2.82	2.81	2.80	2.81	2.81	2.82	2.80	2.81	2.82	2.82	2.81	2.81	2.82	2.80	2.82	2.82	2.82														
Average		2.81	2.805	2.815	2.8175	2.81	2.805	2.8075	2.81	2.815	2.8025	2.805	2.8125	2.81	2.8075	2.815	2.81	2.8075	2.8075	2.815	2.8175														
Range		0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01														
N O T E S																																			
R E A D I N G S	n	21	22	23	24	25																													
	1	2.81	2.80	2.82	2.80	2.81																													
	2	2.82	2.81	2.81	2.80	2.80																													
	3	2.82	2.82	2.81	2.81	2.80																													
	4	2.82	2.81	2.82	2.80	2.81																													
Average		2.8175	2.81	2.815	2.8025	2.805																													
Range		0.01	0.02	0.01	0.01	0.01																													

MEASUREMENT SYSTEM ANALYSIS FOR VARIABLES

NON DESTRUCTIVE TEST

- ☒ Using TOLERANCE method
☐ Using Part to Part variation

PLEASE SPECIFY THE FOLLOWING PARAMETERS AND COMPLETE THE FORM ACCORDINGLY

PARAMETERS ARE:

K ₁	Number of Trials	Must be either 2 or 3	3	OK
K ₂	Number of Operators	Must be either 2 or 3	3	OK
K ₃	Number of Parts	Can be any value between 2 and 10	10	OK

GAGE APPROVED, USE IT

Part number	6605122BSS	Part name	110 TYPE FEMALE TERMINAL	Plant	HU LANE ASSOCIATE INC
Characteristic	W	Gage number	BDA07	Coord by	Kyan Kao
Tolerance	0.2	Gage name	CALIPERS	Phone #	886-2-2694-0551
Total Variation (TV)	0.2	Gage ECL/revision		Date	#####

OPERATOR		P										RESULTS	
TRIAL #		1	2	3	4	5	6	7	8	9	10		AVG
A	1	2.81	2.82	2.79	2.79	2.78	2.78	2.77	2.81	2.81	2.81	A ₁	2.79700
	2	2.82	2.83	2.79	2.79	2.77	2.77	2.77	2.80	2.81	2.81	A ₂	2.79600
	3	2.82	2.83	2.80	2.79	2.77	2.77	2.77	2.80	2.80	2.81	A ₃	2.79600
	Average	2.81667	2.82667	2.79333	2.79	2.77333	2.77333	2.77	2.80333	2.80667	2.81	\bar{X}_A	2.79633
	Range	0.01	0.01	0.01	0.0	0.01	0.01	0.0	0.01	0.01	0.0	R_A	0.00700
B	1	2.82	2.83	2.80	2.79	2.77	2.78	2.78	2.81	2.81	2.81	B ₁	2.80000
	2	2.82	2.83	2.80	2.79	2.77	2.78	2.78	2.80	2.81	2.82	B ₂	2.80000
	3	2.82	2.83	2.80	2.79	2.77	2.77	2.78	2.81	2.81	2.82	B ₃	2.80000
	Average	2.82	2.83	2.8	2.79	2.77	2.77667	2.78	2.80667	2.81	2.81667	\bar{X}_B	2.80000
	Range	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.01	0.0	0.01	R_B	0.00300
C	1	2.81	2.82	2.79	2.80	2.78	2.78	2.77	2.80	2.81	2.81	C ₁	2.79700
	2	2.82	2.82	2.79	2.79	2.77	2.78	2.78	2.80	2.81	2.81	C ₂	2.79700
	3	2.82	2.83	2.79	2.80	2.78	2.77	2.77	2.80	2.81	2.81	C ₃	2.79800
	Average	2.81667	2.82333	2.79	2.79667	2.77667	2.77667	2.77333	2.8	2.81	2.81	\bar{X}_C	2.79733
	Range	0.01	0.01	0.0	0.01	0.01	0.01	0.01	0.0	0.0	0.0	R_C	0.00600
Part Avg		2.81778	2.82667	2.79444	2.79222	2.77333	2.77556	2.77444	2.80333	2.80889	2.81222	$\bar{\bar{X}}_{PART}$	2.79789
Part Range												R_{PART}	0.05333
$\bar{R} = R_A + R_B + R_C / \text{No of operators} =$												\bar{R}	0.00533
$\bar{X}_{DIFF} = [\text{Max}(\bar{X})_{ABC}] - [\text{Min}(\bar{X})_{ABC}] =$												\bar{X}_{DIFF}	0.00367
$UCL_R = \bar{R} * D_4 =$												UCL_R	0.01376
$LCL_R = \bar{R} * D_3 =$												LCL_R	0.00000

OPERATOR	NAME	NOTE: The Total Tolerance Method should be used when the gage is used for product. When out of control conditions exist, analyze the data for Gage acceptability. The total variation method is generally used for variation reduction activities.
A	HUANG SU LIN	
B	AMY WU	
C	RONNIE PENG	
GOOD UNTIL GAGE ECL/revision CHANGE		

FROM DATA SHEET:		$\bar{R} = 0.00533$	$\bar{X}_{DIFF} = 0.00367$	$R_{PART} = 0.05333$
Measurement Unit Analysis		Based on the TOLERANCE Method		
Repeatability - Equipment Variation (EV)				
EV = $\bar{R} * K_1$		Trials	K ₁	% EV = 100[EV/Tol]
EV = 0.01627		3	3.05	% EV = 8.13
Reproducibility - Appraiser Variation (AV)		(n parts, r trials)		
AV = $\sqrt{[(\bar{X}_{DIFF} * K_2)^2 - (EV^2 / nr)]}$		Oper	K ₂	% AV = 100[AV/Tol]
AV = 0.00944		3	2.70	% AV = 4.72
Repeatability & Reproducibility (R & R)				
R&R = $\sqrt{(EV^2 + AV^2)}$				
R&R = 0.01881				
Part Variation (PV)				
PV = $R_{PART} * K_3$		Parts	K ₃	% PV = 100[PV/Tol]
PV = 0.08640		10	1.62	% PV = 43.20
Total Variation (TV)				
TV = $\sqrt{(R\&R^2 + PV^2)}$				
TV = 0.08842				
		Number of Distinct Categories		
		ndc = 1.41[PV/R&R]		
		ndc = 6 should be greater than or equal to		
		Conclusion:		
		GAGE IS ACCEPTED		
		All ranges OK		

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NON DESTRUCTIVE TEST

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Part number 6605122BSS			Part name 110 TYPE FEMALE TERMINAL			GAGE APPROVED, USE IT		
Characteristic W			Gage number BDA07			Plant HU LANE ASSOCIATE INC		
Tolerance 0.2 Units mm			Gage name CALIPERS			Coord by Kyan Kao		
Total Variation (TV) 0.2			Gage ECL/revision			Phone # 886-2-2694-0551		
						Date #####		

Guidelines for acceptance of gage repeatability and reproducibility (%R&R):

UNDER 10% ERROR: Gage system OK

10% to 30% ERROR: May be acceptable based upon importance of application. Calculate "breakpoint" = $RPN \times (\% \text{ Gage R\&R}/100)$ and check that is less than 37.8 and (% Gage R&R) less than 30%. See next page for conclusion of usage.

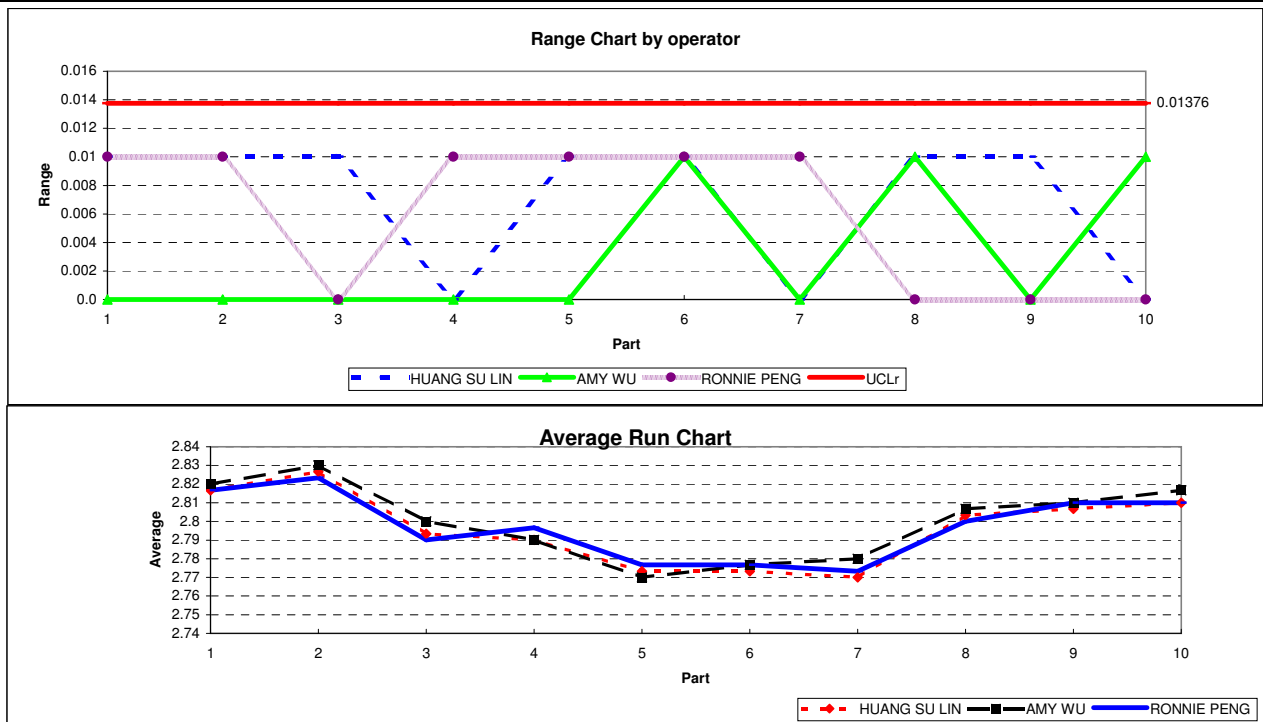
OVER 30% ERROR: Gage system needs improvement. Identify the problems and have them corrected.

DETERMINE THE RISK PRIORITY NUMBER (RPN) FROM THE FMEA ASSOCIATED WITH THE DIMENSION BEING GAGED. TYPE THE RPN # UNDER THE RPN # FIELD PROVIDED (RIGHT) AND FOLLOW INSTRUCTION OF USAGE IN NEXT ROW:	BREAKPOINT	=	RPN #	x	%GRR/100
	3.949978	=	42.0	x	0.09405

For information on the theory and constants used in the form see *MSA Reference Manual*, Third edition.

CONCLUSION IS ...

GAGE APPROVED, USE IT



Notes: