

聚大關係企業

臺灣總廠

聚大橡膠企業股份有限公司

聚紳國際股份有限公司

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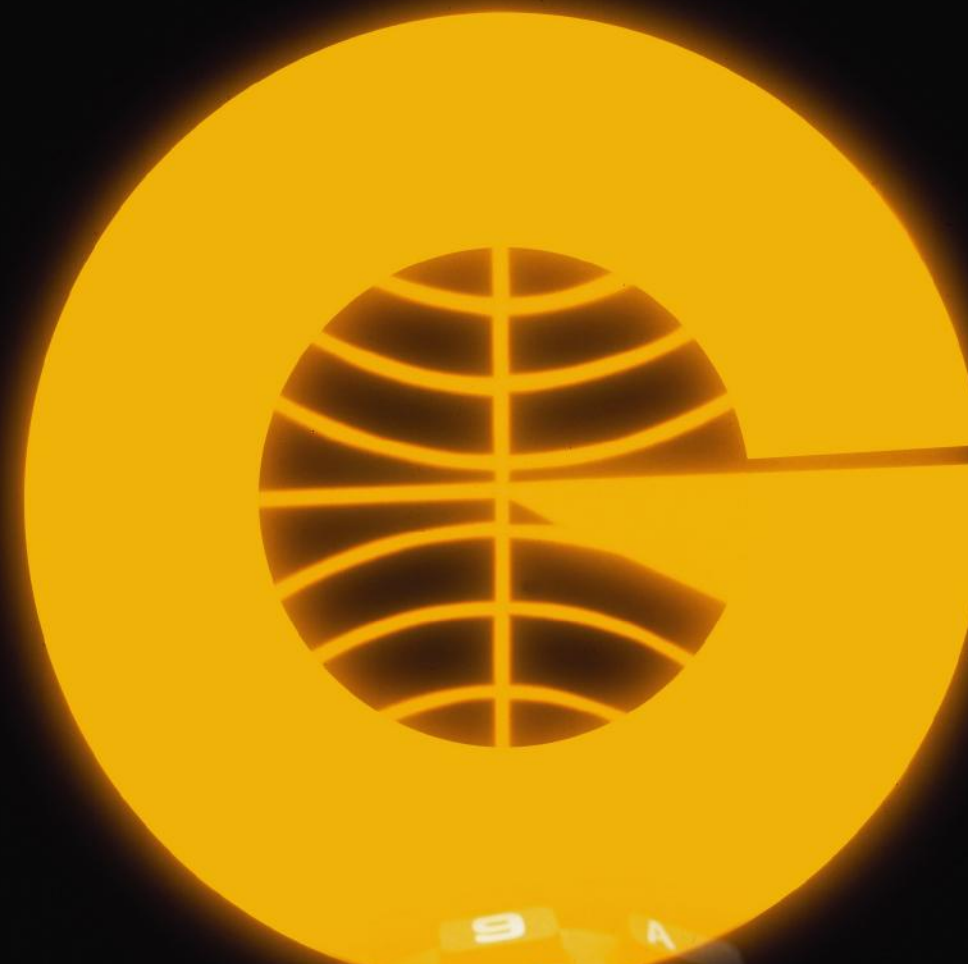
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聚大關係企業董事長 蔡政芳先生 President Mr. Frank Tsai

公司簡介

矽橡膠科技將締造電子工業新紀元

聚大關係企業以其一貫的經營理念：“客戶第一”在臺灣矽橡膠市場已擁有近五成佔有率。同時，為實踐其立足臺灣，放眼中國，擁懷世界的目標。現階段，聚大已在國際矽橡膠產業界，躋身於世界前十強，預計在五年內將進入世界前五強之林。

本公司全名聚大橡膠企業股份有限公司(Great Rubber Co., Ltd)成立於1979年，以生產各類矽橡膠按鍵製造著名。自創立至今，一直以培養人才，研發新科技，引進新機器方式實踐其“客戶第一”的經營理念。在歷經近二十多年的不斷努力，聚大企業無論在經驗、人力、市場行銷、產量科技，甚至機器設備都已獲得國內外業界，及世界各知名廠商的認同。目前所擁有的四家工廠及一家香港分公司，均能有穩定且豐碩的成長表現，而且已得ISO 9001:2000的國際品質認證。此對於聚大所生產的產品品質，無異是再次的保證。今年聚大關係企業所有工廠和分公司均採獨立事業部制，並實施利潤中心制，產能使各工廠的生產及行銷都能獨立進行而不互相干擾，無形中各工廠的產能及其市場的擴充速度迅速攀升；同時也使各工廠間的互相輔助及合作生產的功能發揮到最大之極限。

INTRODUCTION

Silicone Rubber Technology Leads Electronics Industry into New Century

Great Rubber Group, with its "Customer First" management philosophy, processes nearly fifty percent of the Taiwan Silicone market. Similarly, with such a stronghold in Taiwan, the company seeks to expand overseas. The company is already among at the top ten Silicone rubber producers in the world, and estimates to be in the top five within the next five years.

Great Rubber Co., LTD was established in 1979, known for manufacturing various types of Silicone rubber keypads. Since its establishment, the company has educated its staff, developed new technology, and imported the newest automated manufacturing machines in order to serve its customers. With more than twenty years of hard work, Great Rubber Group has received the national and international recognition of well-known manufacturers in the field, whether it is regarding the company's experience, qualified personnel, market sales, or technology. Currently operating four factories and one Hong Kong branch office, the company has received ISO 9001:2000 certification. Along with a stable and steady growth rate, all of these factors are guarantees of Great Rubber's product quality. All of Great Rubber Group's subsidiary companies are independently operated, so that each division will have the drive to improve its own sales, while being able to cooperate with other divisions.

公司經營理念

客戶第一——聚大永恆不變的經營理念

客戶的問題就是我們的問題，別人做不到的找聚大保證讓您滿意
時間就是金錢，保證在您的要求時效內完成任務，否則負責一切損失

COMPANY MANAGEMENT PHILOSOPHY

CUSTOMER FIRST—— GREAT RUBBER'S SOLID PHILOSOPHY.

YOUR PROBLEM IS OUR RESPONSIBILITY. WE GUARANTEE TO DELIVER YOU SATISFACTION WHICH CANNOT BE DONE BY OTHER COMPANY.

TIME IS MONEY AND WE ENSURE YOU INQUIRIES TO BE DONE IN YOUR REQUIRED PERIOD. OTHERWISE, WE WOULD BE RESPONSIBLE FOR EVERY LOSE.

THE MOST RELIABLE PARTNER TO YOUR BUSINESS IS GREAT RUBBER'S "CONDUCTIVE RUBBER" AND "SPECIAL RUBBER" - THE MOST.

品質政策

產品品質零缺點，
完全客戶滿意度。

QUALITY POLICY

ZERO-DEFECTED PRODUCT QUALITY
COMPLETE CUSTOMER SATISFACTION

ISO 9001:2000 EQAICC-Q-R1929

於二〇〇二年九月份通過EQAICC之評審，獲頒國際性 ISO 9001:2000 質量管理體系證書
In September of 2002, GREAT RUBBER was honoured with certificate for International Quality System Standard ISO 9001:2000 by EQAICC.





電腦數控加工切削機 COMPUTER NUMERIC CONTROL VERTICAL MACHINE



成型部 MOLDING SECTION



點印機場景 DRIPPING PRINTER VIEW



雷射場景 LASER ETCHED VIEW



射出機場景 INJECTION MOLDING VIEW



研磨 GRINDING MACHINE



自動噴漆設備 AUTO-PAINTED EQUIPMENT



點膠場景 DRIPPING EPOXY VIEW



砂紙式耐磨測試機 SAND PAPER TYPE WEAR-RESISTING MACHINE



耐磨測試機 RCA ABRASION WEAR TESTER



電子式測力機 DIGITAL FORCE TESTER



曲線測試機 DIGITAL MINUTENESS TEST EQUIPMENT



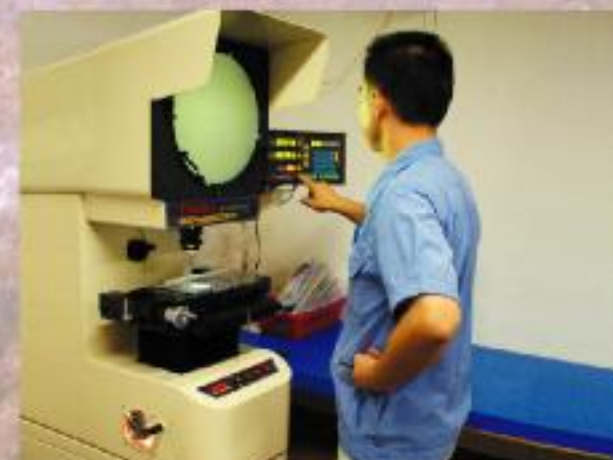
色差儀 COLORIMETER



手提式色差儀 HANDY COLORIMETER



二次元測量機 DIGITAL POSITION READ OUT SYSTEM



投影機 OVER HEAD PROJECTOR



雷射發射儀 LASER EMISSION



μ 值摩擦係數測試儀 COEFFICIENT OF FRICTION



二次元座標量測儀 DIGITAL POSITION READOUT SYSTEM



RCA 磨擦測試儀 RCA ABRASION WEAR TESTER



旋轉測光徑儀 ROTATING MEASUREMENT TESTER



擺錘測試儀 SLANTING SWING TESTER



單鍵式壽命測試器 SINGLE BUTTON TYPE LIFE ENDURANCE TESTER



單鍵式等重壽命測試器 SINGLE BUTTON TYPE-LOADING WEIGHT LIFE ENDURANCE TESTER



硬度測試器 HARDNESS TESTER



歐姆儀 OHMS TESTER



3頭式壽命測試器 TRIPLE-HEAD OPERATING LIFE



壽命測試機 LIFE ENDURANCE TESTER



自動待重行程測試儀 DIGITAL TYPE MINUTENESS LOAD TEST EQUIPMENT



MASTER CAM PROGRAM 軟體



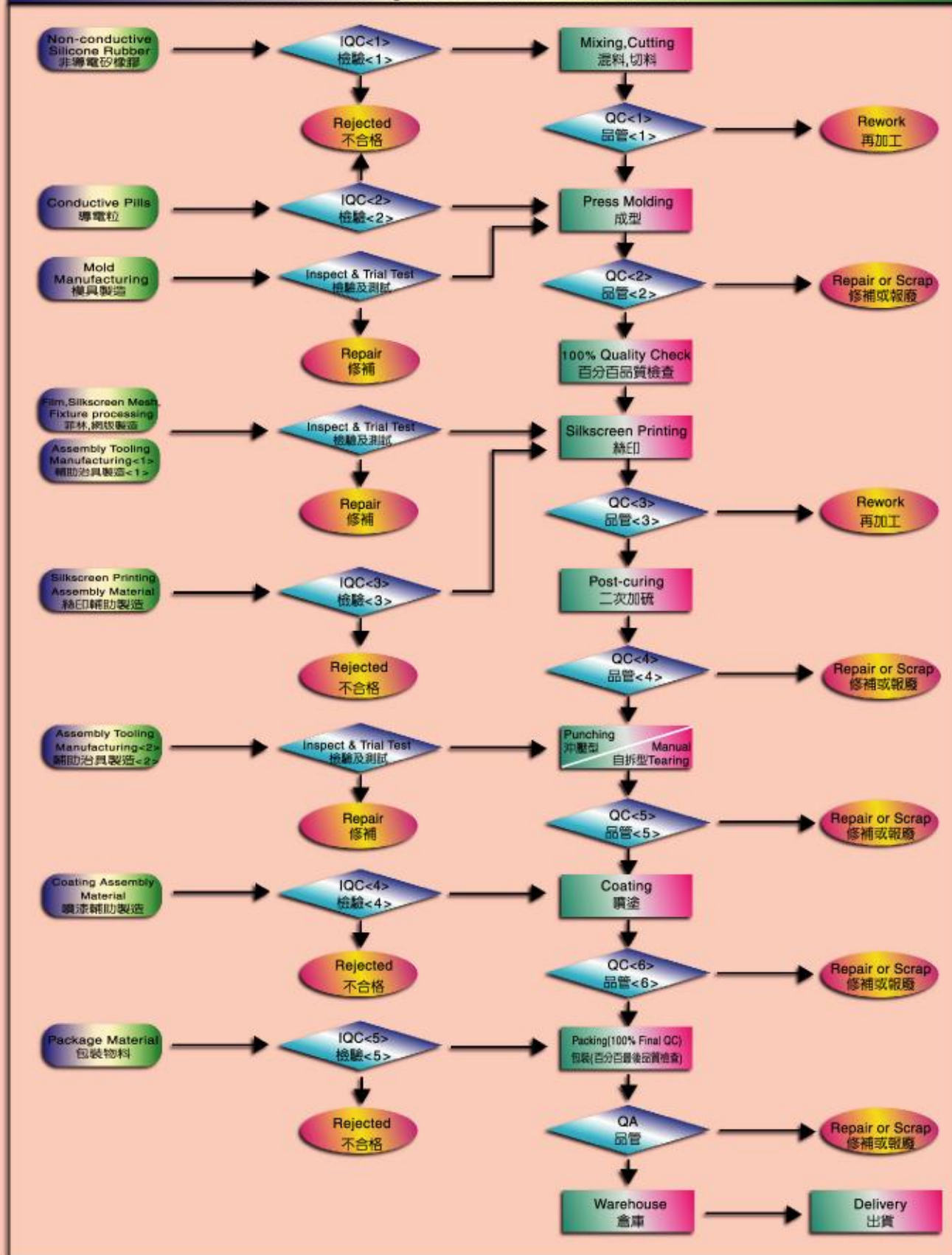
二次元投影檢測器軟體 DIGITAL PROJECTION TESTER



導電阻式測試器 CONDUCTIVE RESISTANCE TESTER

製造及品管控制流程表

OPERATION & QUALITY CONTROL FLOWCHART





鋁膠+橡膠導電按鍵
P+R Keypads. PC Film



鐫雕導電按鍵
Laser etched legend & coating Keypads



鐫雕導電按鍵
Laser etched legend & coating Keypads



橡膠滾輪
Rubber Roller



橡膠滾輪
Rubber Roller



橡膠滾輪
Rubber Roller



點膠導電按鍵
Epoxy Dripping Rubber keypad



點膠導電按鍵
Epoxy Dripping Rubber keypad



點膠導電按鍵
Epoxy Dripping Rubber keypad



導電條
Inter-Connectors rubber



導電條
Inter-Connectors rubber



醫療用橡膠製品
Medical equipment parts



高耐磨導電橡皮
Super-Abrasion coating keypads



鐫雕
Pu coating



鐫雕
Pu coating



各種橡膠製品
Rubber Part



麥克風
Microphone



橡膠管
Rubber tube



薄膜按鍵
Membrane Switch



薄膜按鍵
Membrane Switch



薄膜按鍵
Membrane Switch



麥克風
Microphone



腳墊
Adhesive rubber Foot

ROLLS SERIES (圓形系列)

產品編號 / NO. RU-100 RU-101 RU-102 RU-103 RU-105

樣品 SAMPLE					
直徑 / Dia (mm)	8.0	8.0	10.0	8.8	11.8
厚度 / H (mm)	2.0	2.5	3.0	3.0	4.2

圓形系列腳墊
Rolls Series Adhesive rubber Foot



薄膜按鍵
Membrane Switch



銘版
Overlay



銘版
Overlay

CLEAR SERIES (透明系列)

產品編號 / NO. CY-788 CY-888 CY-889 CY-890 CY-891

樣品 SAMPLE					
直徑 / Dia (mm)	7.8	8.8	9.8	8.3	11.8
厚度 / H (mm)	3.0	2.5	4.1	2.0	4.2

透明系列腳墊
Clear Series Adhesive rubber Foot

SHEET SERIES (平板系列)

FULL SIZE OF SHEET / 平板系列腳墊

樣品 SAMPLE					
直徑 / Dia (mm)	8.0	10.0	12.0	14.0	16.0
厚度 / H (mm)	2.0	2.5	3.0	3.5	4.0

平板系列腳墊
Flat Series Adhesive rubber Foot

SQUARE SERIES (方形系列)

產品編號 / NO. SU-005 SU-001 SU-006

樣品 SAMPLE			
直徑 / L (mm)	8.3	12.5	12.4
厚度 / H (mm)	2.0	3.4	3.4

方形系列腳墊
Square Series Adhesive rubber Foot



大型橡膠伸縮管
Rubber Bellow



O 形環
O-ring



O 形環
O-ring



遙控器
Remote control



遙控器
Remote control



遙控器
Remote control



夜光導電橡皮
Phosphorescent rubber keypad



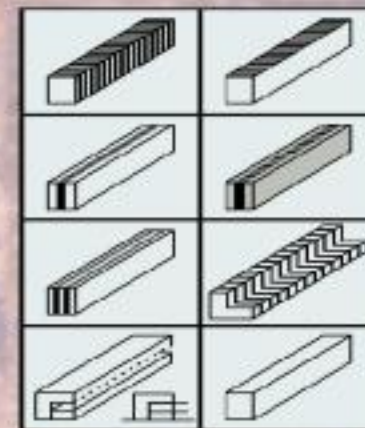
夜光導電橡皮
Phosphorescent rubber keypad



各種導電按鍵
Various Rubber Keypad

TOLERANCE LIST

Item	Unit	0.05P	0.10P	0.18P	0.25P	
	P	mm	0.05±0.03	0.10±0.04	0.18±0.05	0.25±0.05
Length	L	mm	1.0~10±0.1	10.1~30±0.2	30.1~60±0.3	
			60.1~120±0.4	120.1~180±0.6	over 180±0.8	
Height	H	mm	±0.1			
Width	W	mm	0.5~5±0.1		5.1~10±0.15	
Conductor	Pc	mm	0.03±0.01	0.05±0.015	0.10±0.03	0.10±0.03
Insulator	Pi	mm	0.02mm	0.05mm	0.08mm	0.08mm
Standard	W'	mm	±0.1			



TYPES OF INTER-CONNECTOR RUBBER



汽車鑰匙遙控按鍵
Car Key R/C Rubber keypad



汽車鑰匙遙控按鍵
Car Key R/C Rubber keypad



汽車零件橡膠製品
Car Rubber Part

橡膠鍵規格 RUBBER KEY SPECIFICATION

橡膠鍵規格 Rubber Key Specification

Actuation force.....20 to 500 grams
接觸電阻少於200歐姆
Contact resistance.....less than 200 ohms
生命週期 50萬至3000萬次
Cycle life.....500 K to 30 million
操作溫度範圍 攝氏零下20度至攝氏180度
Operating temperature range.....-20°C to 180°C
儲存溫度範圍 攝氏零下30度至攝氏250度
Storage temperature range.....-30°C to 250°C
接觸額定 直流電12伏特時為5毫安培
Contact rating.....5 milliamperes at 12V DC
0.5秒及2000萬周波.....for 0.5 seconds and 20 million cycles
接點顫動.....少於12毫秒
Contact bounce.....less than 12 milliseconds
絕緣電阻.....在直流電500伏特時大於10¹² 歐姆
Insulation resistance.....greater than 10¹² ohms at 500V DC
絕緣擊穿電壓.....每公厘25至30仟瓦
Breakdown voltage.....25 to 30 KV per millimeter

尺寸公差 Dimension Tolerance

0至10公厘±0.10公厘 0 to 10 mm ±0.10 mm
10至20公厘±0.15公厘 10 to 20 mm ±0.15 mm
20至30公厘±0.20公厘 20 to 30 mm ±0.20 mm
30至40公厘±0.25公厘 30 to 40 mm ±0.25 mm
40至50公厘±0.30公厘 40 to 50 mm ±0.30 mm
50公厘或以上±0.6% 50 mm or greater ±0.6%

動作力公差 Actuation Force Tolerance

50公克±15公克 50 grams ±15 grams
75公克±20公克 75 grams ±20 grams
100公克±25公克 100 grams ±25 grams
125公克±30公克 125 grams ±30 grams
150公克±35公克 150 grams ±35 grams
175公克±40公克 140 grams ±40 grams
200公克或以上±20%-25% 200 grams or greater ±20%-25%



橡膠導電按鍵
Rubber+Mylar



橡膠導電按鍵
Rubber+Mylar



塑膠+橡膠 遙控器按鍵
P+R keypad



標準電話字鍵
Standard keypad for Telephone



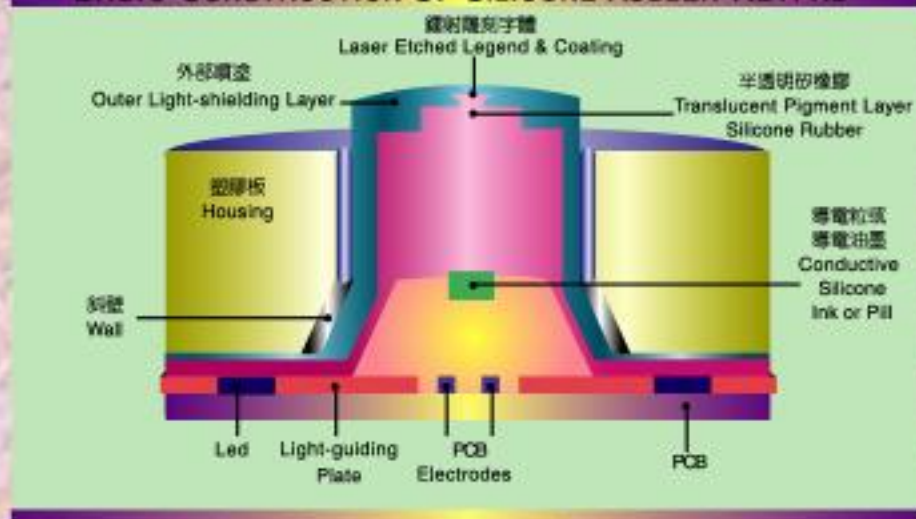
標準電話字鍵
Standard keypad for Telephone



標準電話字鍵
Standard keypad for Telephone

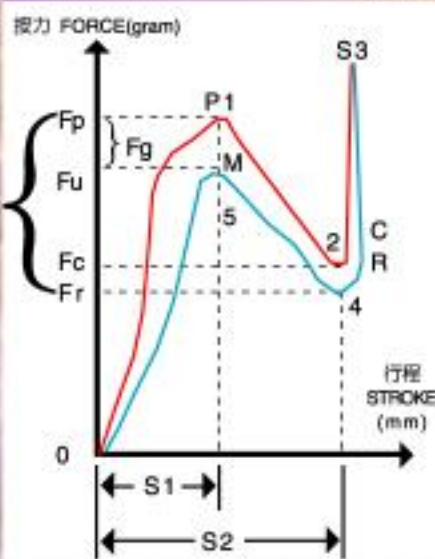
矽橡膠按鍵基本結構圖解

BASIC CONSTRUCTION OF SILICONE RUBBER KEYPAD



按鍵之按力及行程曲線圖

FORCE-STROKE CURVE OF RUBBER KEYPAD



按力 FORCE	Fp	峰值按力	Peak Force(Fmax)
	Fc	接觸點按力	Contact Force
	Fr	最小回彈力	(Fmin)Min. Return Force(Fmin)
	Fm	最大回彈力	Max. Return Force
	Fd	落差力(Fd=Fp-Fc)	Drop Force(Fd=Fp-Fc)
行程 STROKE	S1	峰值行程	Peak Stroke
	S2	接觸點行程	Contact Stroke
	S3	總行程	Total Stroke
位置 LOCATION	O	起始點	Original Point
	P	峰值點	Peak Point
	C	接觸點	Contact Point
	R	回彈點	Return Point
	M	最高回彈力點	Max. Return Point
位移 TRAVEL	O-P	預按位移	Preload Travel
	P-C	至接觸點位移	Travel To Contact
	C-S	壓縮段位移	Post Travel
	S-R-M-O	回彈位移	Return Travel

橡膠按鍵應用在不同產品上的參考

CONDITIONS FOR DESIGN OF RUBBER KEY

		Force Range 按力範圍: 0-350 grams Stroke Range 行程範圍: 0.5-3.0 mm Cycle Life壽命(X1000): 500-2,000 Typical Uses 主要用途: Telephone, Remote Control, Automobile, Radio, Toys, Calculator, etc. 電話, 遙控器, 汽車零件, 玩具, 計算器等			Force Range 按力範圍: 30-80 grams Stroke Range 行程範圍: 2.0-4.0 mm Cycle Life壽命(X1000): 5,000-20,000 Typical Uses 主要用途: Computer, Typewriter, etc. 電腦, 打字機等
		Force Range 按力範圍: 30-250 grams Stroke Range 行程範圍: 0.7-1.5 mm Cycle Life壽命(X1000): 500-2,000 Typical Uses 主要用途: Telephone, Remote Control, Toys, Games, Calculator, etc. 電話, 遙控器, 玩具, 遊戲機, 計算器等			Force Range 按力範圍: 30-200 grams Stroke Range 行程範圍: 1.0-2.5 mm Cycle Life壽命(X1000): 500-3,000 Typical Uses 主要用途: Telephone, Typewriter, Test Instruments, etc. 電話, 打字機, 試驗儀器等
		Force Range 按力範圍: 30-150 grams Stroke Range 行程範圍: 0.5-3.0 mm Cycle Life壽命(X1000): 1,000-3,000 Typical Uses 主要用途: Telephone, Remote Control, Toys, Measuring Instruments, Office Machine, etc. 電話, 遙控器, 玩具, 測量儀器, 辦公室機器等			Force Range 按力範圍: 20-80 grams Stroke Range 行程範圍: 0.2-1.0 mm Cycle Life壽命(X1000): 500-10,000 Typical Uses 主要用途: Remote Control, Calculator, Typewriter, Computer, etc. 遙控器, 計算器, 打字機, 電腦等

1 Fig. 1 Thickness of Sponge vs. Product Hardness

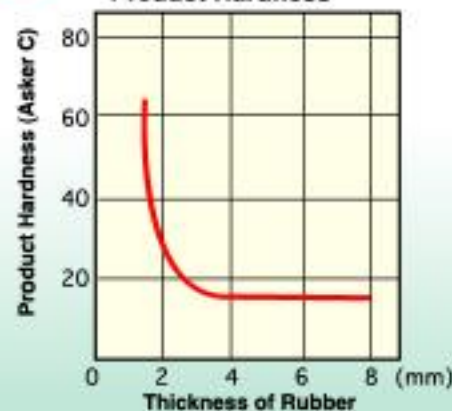


Fig. 2 Thickness of rubber vs. product hardness

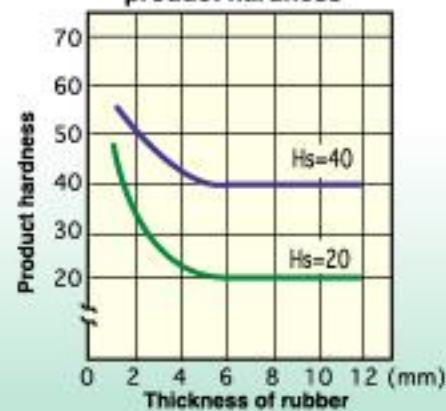
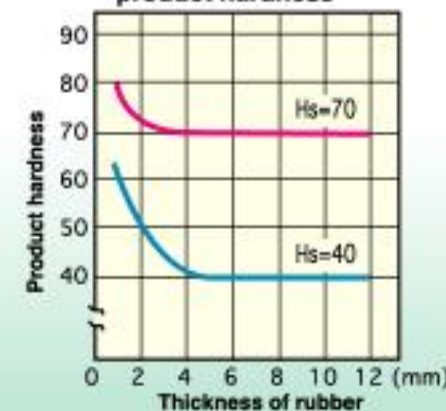


Fig. 3 Thickness of rubber vs. product hardness



2 Fig.1 JIS A Hardness vs. Asker C Hardness

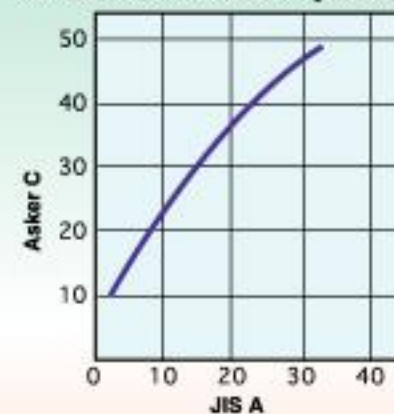


Fig.2 Hardness vs. Coefficient of friction

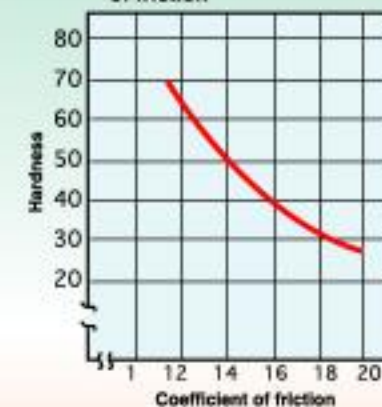
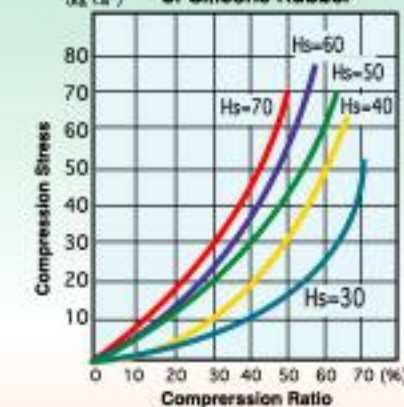


Fig.3 Compression Stress of Silicone Rubber



3 The Comparison of Properties of Elastomers used for Roller of OA Machines

properties	Specific Gravity of Base Polymer	Hardness (Shore A)	Tensile Strength (kgf/cm ²)			Elongation (%)			Temp Range (°C)		Tear Strength (kgf/cm)	Resilience	Abrasion Resistance	Oil Resistance	Ozone Resistance	Life at 150°C
			Room Temp.	121 °C	205 °C	Room Temp.	121 °C	205 °C	Max.	Min.						
Elastomers																
ASTM Nomenclature																
Silicone Rubber (Q)	1.20	20-95	35-140	60	28	100-800	350	200	260	-73	7-40	◎	△	△	◎	Continuously Usable
Natural Rubber (NR)	0.93	20-100	100-280	125	9	700	500	80	116	-35	54	◎	○	×	×	Decomposition
Styrene Butadiene Rubber (SBR)	0.94	40-100	100-280	125	9	300-700	250	60	94	-40	-	○	◎	×	×	Decomposition
Butadiene Rubber (BR)	0.92	40-90	50-230	-	-	100-500	-	-	90	-45	-	◎	◎	○	×	-
Chloroprene Rubber (CR)	1.20	20-90	100-280	100	13	60-700	350	0-100	121	-40	54	◎	○	◎	○	Decomposition
Nitrile Rubber (NBR)	1.00	30-100	40-300	50	9	400-600	120	20	121	-15	2-7	○	◎	×	×	Decomposition
Butyl Rubber (IIR)	0.92	30-100	150-200	70	25	500-700	250	80	94	-52	90	△	△	×	◎	Decomposition
Ethylene Propylene Rubber (EPDM)	0.87	40-90	50-200	-	-	100-500	-	-	140	-40	-	○	△	○	◎	-
Acryl Rubber (ACM,ANM)	1.10	40-100	35-150	90	16	100-400	400	150	150-200	-23	-	△	△	○	◎	Continuously Usable
Polyurethane Rubber (UR)	1.05	55-100	300-500	130	14	400-750	300	140	80	-20	45-130	-	◎	△	-	Several Minutes

※ (Note) : ◎ - (Excellent) ○ - (Good) △ - (Fair) × - (Bad)