出國報告(出國類別：（國外承攬）

關島 cabras 電廠#2 機
汽機大修報告

服務機關：台灣電力公司電力修護處

姓名職稱：謝　明　正　課　長

派赴國家：美　　國　　關　　島

出國期間：**2016/2/22～2016/4/20**

報告日期：中華民國 **106** 年 **4** 月 **29** 日

出國報告審核表

出國報告名稱：關島 cabras 電廠#2 機汽機大修報告		
出國人姓名(2人以上,以1人為代表)	職稱	服務單位
謝明正	課長	電力修護處第五工作隊
出國類別	□考察 □進修 □研究 □實習 ■其他關島 cabras 電廠#2 機汽機大修報告（例如國際會議、國際比賽、業務接洽等）	
出國期間：105 年 2 月 20 日至 105 年 4 月 20 日	報告繳交日期： 105 年 4 月 29 日	

出國計畫主辦機關審核意見

☑1.依限繳交出國報告
□2.格式完整（本文必須具備「目地」、「過程」、「心得」、「建議事項」）
□3.無抄襲相關出國報告
□4.內容充實完備.
□5.建議具參考價值
□6.送本機關參考或研辦
□7.送上級機關參考
□8.退回補正，原因：□不符原核定出國計畫 □以外文撰寫或僅以所蒐集外文資料為內容 □內容空洞簡略未涵蓋規定要項 □抄襲相關出國報告之全部或部分內容 □電子檔案未依格式辦理 □未於資訊網登錄提要資料及傳送出國報告電子檔
□9..本報告除上傳至出國報告資訊網外，將採行之公開發表：
□辦理本機關出國報告座談會（說明會），與同仁進行知識分享。
□於本機關業務會報提出報告
□其他_____
□10.其他處理意見及方式：

說明：

一、各機關可依需要自行增列審核項目內容，出國報告審核完畢本表請自行保存。

二、審核作業應儘速完成，以不影響出國人員上傳出國報告至「政府出版資料回應網公務出國報告專區」為原則。

報告人	105.4.29 謝明正	審核人	單位主管	力修課 105.4.29 鄒政浩	主管處主管	力修處 105.5.04 吳育中	總經理 副總經理	副總經理兼執行長 105.5.5 鍾炳利

行政院及所屬各機關出國報告提要

出國報告名稱：

關島 cabras 電廠#2 機汽機大修報告　　頁數 48 含附件：□是□否

出國計畫主辦機關/聯絡人/電話

台灣電力公司電力修護處/鄒政浩/02-27853199-250

出國人員姓名/服務機關/單位/職稱/電話

謝明正/台灣電力公司/電力修護處/第五工作隊課長/02-27853199-295

出國類別：□1 考察□2 進修□3 研究□4 實習☑5 其他

出國期間：105/02/20～105/04/20　　出國地區：美國關島

報告日期：105/04/29

分類號/目

關鍵詞：

內容摘要：（二百至三百字）

修護處與台灣機電工業社簽約承包關島 CABRAS 電廠#2 機汽機主閥檢修，原計劃於 2016 年 12 月進行檢修工作，因關島電力備載因素大修因此延宕，大修工作延至 2016/2/22 日開始，2016/4/6 日結束，工期 45 天。此次汽機大修主要工作為 1：高低壓汽機開蓋、2：汽機#1、4、7、22TE、22GE、3：MSV×1、4：CV×6、5：IV×1、6：RSV×1、7：SRV(Steam Regulation)×1、8：Blow Down V/V×1、 9：NOn-return V/V×5。大修過程中因新葉片延遲 15 天到廠，因此大修延至 2016/4/日結束。

大修過程除葉片延遲到廠外，工作進度、品質、工安之維持都相當順暢。最後起機過程及加配重塊都相當順利。機組已於四月 16 日順利併聯發電，並於四月 23 日 14:49 滿載運轉。

本文電子檔已傳至出國報告資訊網（http://open.nat.gov.tw/reportwork）

PERAM TPC

關島 cabras 電廠#2 機汽機大修報告

Department of power equipment repair and

Maintenance Taiwan power company

CABRAS # 1 STEAM TURBINE OVERHAUL FINAL REPORT 2016

一：前言

關島 cabras 電廠#2 機汽機大修預定工期 45 天 2016 年 2 月 22 日開始大修至 4 月 6 日。大修主要工作內容為，高低壓開蓋大修、高壓轉子第一、四、七級動葉片更換、低壓轉子#22 級 TE&GE 端動葉片更換。大修開蓋後發現中壓第一級(#10 級)動葉片似乎遭異物撞擊而損傷，廠方決定一同更換。另汽機主閥全部拆卸檢修。MSV&RSV 之 SEAT 及 DISC 接觸狀況都不好，此次大修將 MSV&RSV 做了研磨。MSV&RSV 之彈簧也予以更換。#1CV、#5CV 彈簧也予以更換希望能改善閥之開關控制。N1 汽封運轉中有洩漏蒸汽之情形，檢修中發現止回閥未開，因此拆卸檢修後將止回閥打開，並作記號確保止回閥在開的位置。汽機之汽封更換了七級包括 IP5、IP10 之 SEAL STRIP，HP7、HP8、IP6、IP8、IP9 之 Packing ring。低壓外缸之安全膜片也做了更換。大修過程中因葉片拆解後量測才製造，第 1、10 級葉片至 3 月 18 日才到廠，最後 L-0 至 3 月 30 日到廠，經全力趕工使原本預定四月六日啟動日期延期至四月 16 日才啟動並聯，比重新修訂工期提前 3 天完工。

二：大修工期

預定工期：105 年 02 月 22 日~105 年 04 月 06 日

實際工期：105 年 02 月 22 日~105 年 04 月 20 日

三：大修人力配置

領　隊：	鄒政浩				
職　員：	謝明正				
鉗　工：	吳連完	蔡東岳	藍文坤	高春福	游志賢
	吳武男	傅家璋	李金聘	李清榮	陳永結
	陳兩雄	詹益燐	傅鉚山	葉裕生	李鴻建
	顏清允	吳明發			
起　重：	顏錦華	陳正明	張鎮國	余進吉	
電　銲：	范發奎	李智華			

汽機合計 25 人

四：檢修項目

1：汽機全開蓋大修

2：汽機主閥大修

五：檢修內容

1：高低壓汽缸

1.1：保溫拆卸

1.2：跨管拆卸

1.3：膨脹接頭拆卸

1.4：低壓外缸螺絲拆

1.5：導流板拆卸

1.6：低壓外缸吊出

1.7：低壓內缸拆卸吊出

1.8：#1#2#3 軸承蓋軸承拆卸

1.9：高壓進汽管法蘭螺絲拆卸

1.10：高壓進汽管法蘭螺絲拆卸

1.11：高壓外缸螺絲拆卸外缸吊出

1.12：高壓 TE&GE 格蘭螺絲拆卸

1.13：高壓內缸螺絲拆卸內缸吊出

1.14：高壓內格蘭拆卸

1.15：中壓靜葉環拆卸吊出

1.16：聯軸器螺絲拆卸

1.17：轉子軸徑向間隙核測

1.18：推力軸承拆卸

1.19：靜葉環拆卸及間隙核測

1.20：IP10 級靜葉環葉片受損焊補

1.21：零組件噴砂

1.22：汽機零組件 MT & PT　　詳細報告請參閱品檢大修報告

1.23：汽封更換（至少更換 6 級）

更換 2 級 seal strip(IP10、IP14），6 級 Packing ring (HP7、HP8、IP6、IP8、IP9。)packing ring

1.24：轉子動葉片鬆緊度檢查

1.25：轉子動葉片鬆緊度檢查

1.26：覆環檢查

1.27：轉子配重塊紀錄檢查

1.28：覆環與葉片間間隙核測及硬度檢查

1.29 ：覆環與葉片間間隙核測

1.30：噴嘴塊葉片檢查

1.31：更換 1、4、7、10、22 級動葉片#10 級動葉片受損

1.32：軸承與軸頸檢查#1#2#3 軸承與軸頸接觸核測

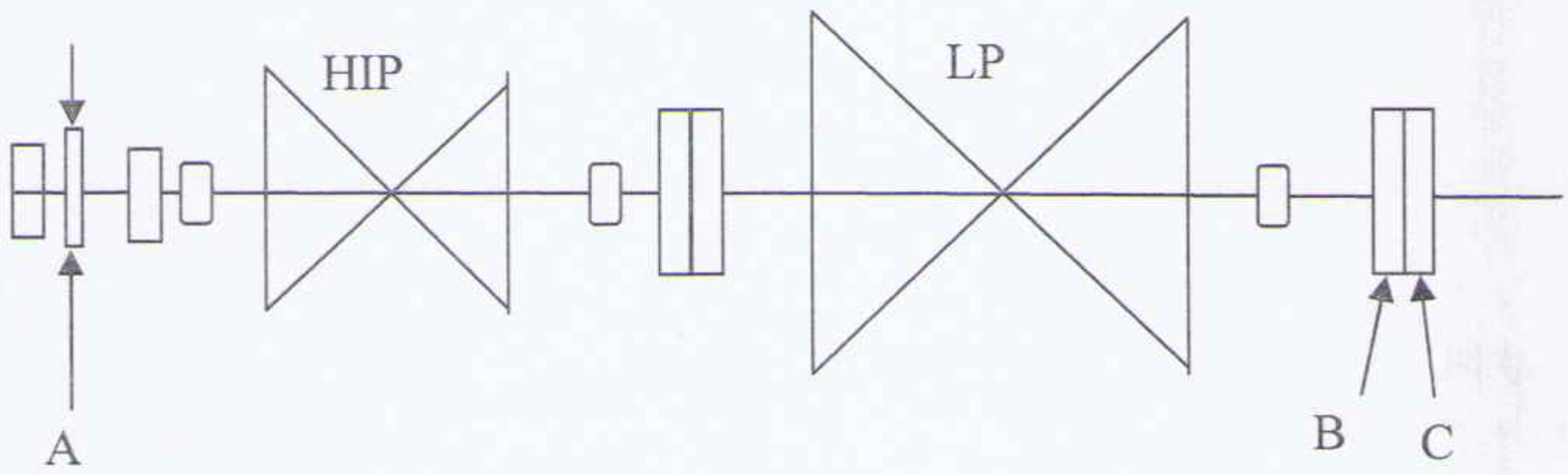
1.33：軸承與軸頸接觸核測.

1.34：軸承與軸頸 PT&UT.

1.35：推力軸承檢修推力軸承巴氏合金檢修

1.36 慢車機構清潔、檢查.

1.37 聯軸器偏心核測 0,002" 以內

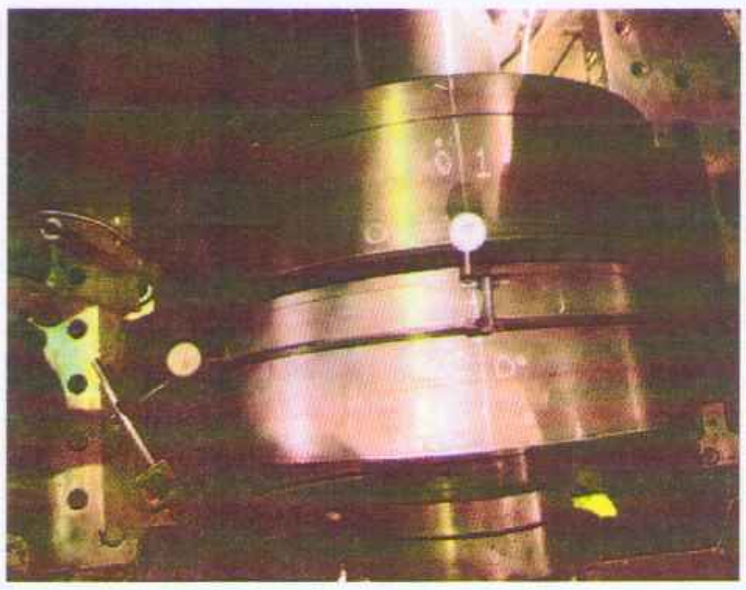


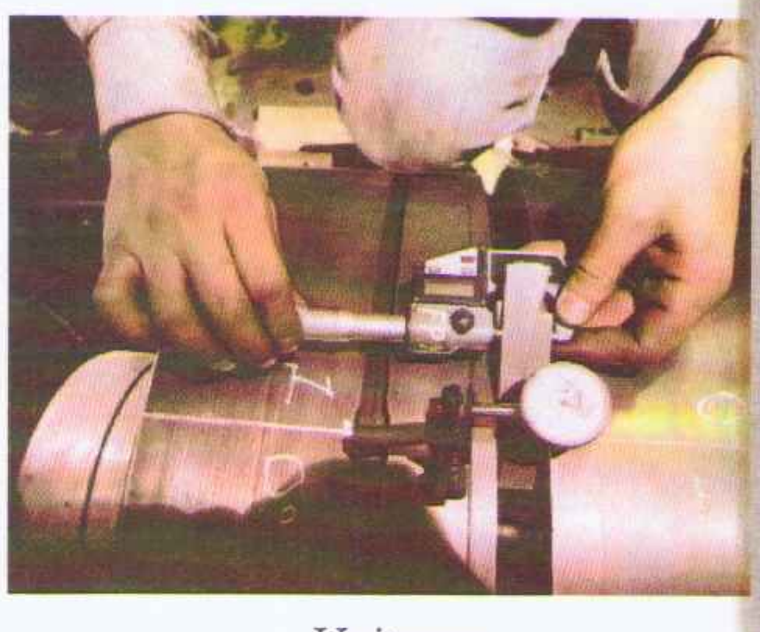
UNIT：1/100mm

	A	B	C
1	13	12	11
2	13	12	11
3	16	12	10
4	16	11	9
5	17	11	9
6	16	10	9
7	15	11	10
8	14	11	11

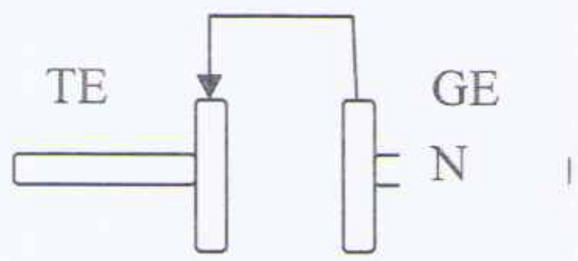
1.37：汽機對心及調整

汽機對心

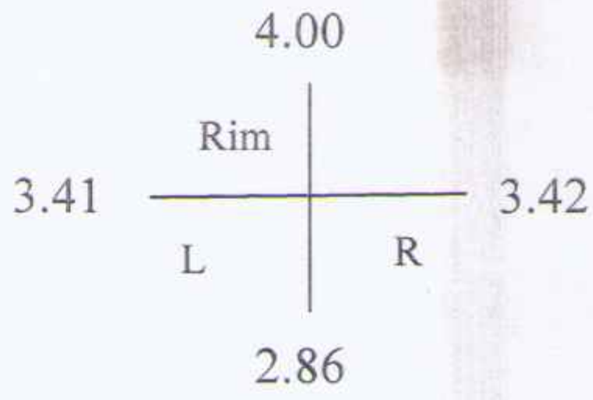


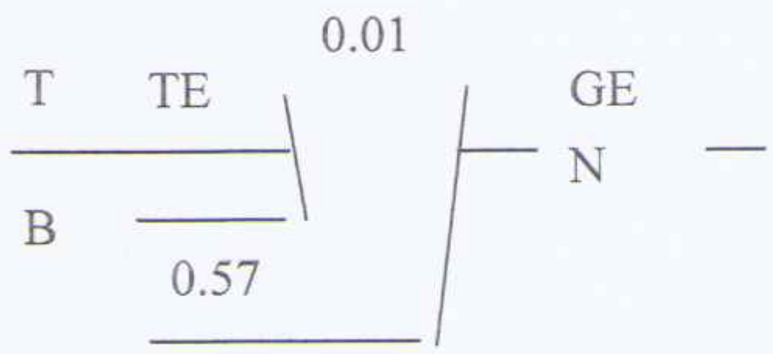


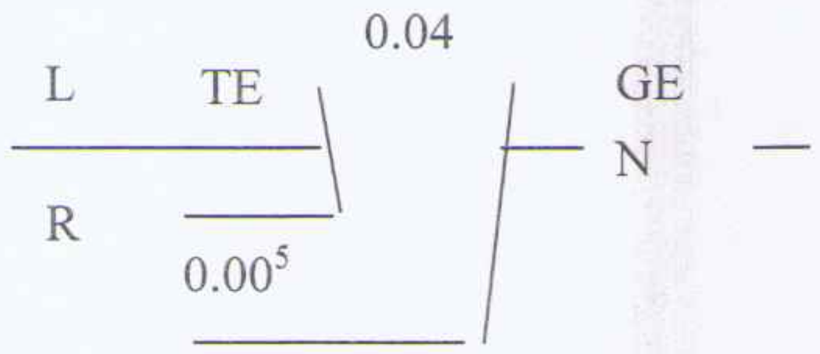
Unit:mm



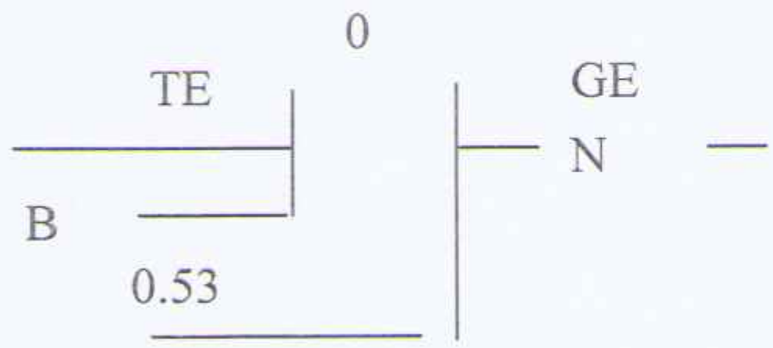
Face	T	B	L	R
0°	24.09	24.07	24.10	24.06
90°	24.14	24.14	24.17	24.11
180°	24.12	24.10	24.10	24.10
270°	24.07	24.09	24.09	24.07
Ave	24.11	24.10	24.12	24.08

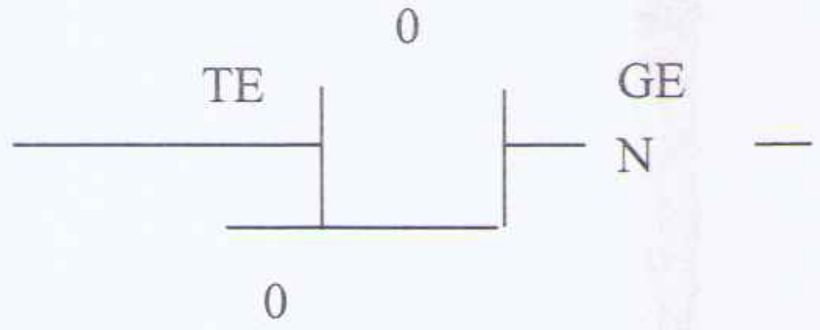






對心設計值為





2：汽機主閥

汽機主閥檢修(GV×6、MSV×1、RSV×1、IV×1、Steam seal regulator valve、Blow down valve, and 5 extraction steam non-return valves.)

2.1：MSV

2.2：RSV

2.3：CV1CV5 彈簧更換

2.4：MSV 閥軸更換

2.5：RSV 閥軸更換

2.6：MSV 閥座研磨

2.7：RSV 閥座研磨

2.8：RSV back seat blue check

2.9：MSV back seat blue check

2.10：#1～5 止回閥閥座及閥盤檢修 PT

3：潤滑油系統及 EHC 油系統檢修

3.1：潤滑油系統清潔油槽及內部檢查

3.2：潤滑油冷卻系統檢修

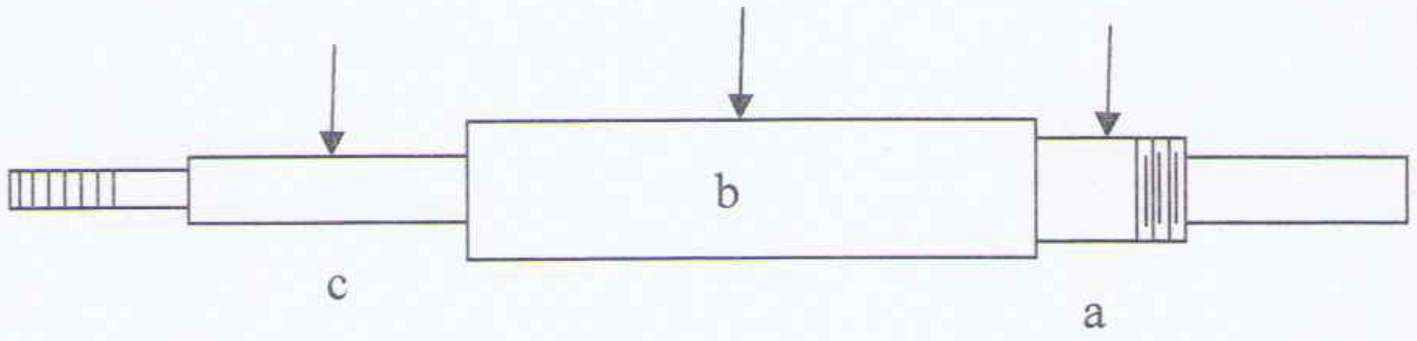
3.3：AC & DC 油泵檢修

AC、DC&EOP pump

		A	clearance	B	clearance	C	clearance
Wear ring(top)	Inside DIA	79.59	0.49	79.59	0.48	79.59	0.50
	Outside DIA	79.10		79.11		79.09	
Wear ring(lower)	Inside DIA	73.29	0.41	73.28	0.40	73.31	0.46
	Outside DIA	72.88		72.88		72.85	
Bushing (lower)	Inside DIA	44.55	0.12	44.48	0.07	44.51	0.09
	Outside DIA	44.43		44.41		44.42	

Pump Travel check

	AS FOUND		AS LEFT		BRG clearance
	Free Travel	Lift Volume	Free Travel	Lift Volume	
A	4.98	2.48	5.10	2.52	0.06
B	4.87	1.63	4.70	1.72	0.05
C	4.98	3.31	5.08	1.85	0.04



		STEM RUN OUT CHECK			
		0°	90°	180°	270°(0°)
A	a	0	-1	0	2
	b	0	0	0	0
	c	0	-4	0	0
B	a	0	8	13	4
	b	0	0	0	0
	c	0	1	3	1
C	a	0	6	3	-3
	b	0	0	0	0
	c	0	2	2	0

3.4：EHC 油系統油槽清理

3.5：EHC 油系統冷卻系統清理

3.6：EHC 油系統濾網更換

六：試運轉情形

汽機於四月 **16** 日 07:21Roll turbine 達 500 rpm，維持 30 分鐘後升速至額定轉速 3600RPM，於 09:05 並聯。因升速過快造成差膨脹警報而解聯。並於 80 度處加配重塊 290 公克，機組再次啟動震動值如下：

振動數值如下：　　**unit：mils**

5MW	**1X**	**1Y**	**2X**	**2Y**	**3X**	**3Y**	**4X**	**4Y**	**5X**	**5Y**
11:54	**1.5**	**1**	**1.8**	**1.1**	**1**	**0.96**	**2.7**	**1.8**	**2.1**	**1**

軸承金屬溫度如下：

Bearing	1	2	3	4	5	Thrust Inactive (TE)	Thrust Active (GE)
T.F°	**166.8**	**161.5**	**145.5**	**157.9**	**158.8**	**133.4**	**123.9**
T.C°	**74.9**	**71.9**	**63.1**	**69.9**	**70.4**	**56.3**	**51.1**

四月 21 日 **16:10 Output 52MW**

軸承金屬溫度如下：

Bearing	1	2	3	4	5	Thrust Inactive (TE)	Thrust Active (GE)
T.F°	**208**	**176**	**200**	**183**	**163**	**148**	**160**
T.C°	**98**	**80**	**93**	**84**	**72**	**64**	**71**

APR 21.2016　16:10 Output 52MW

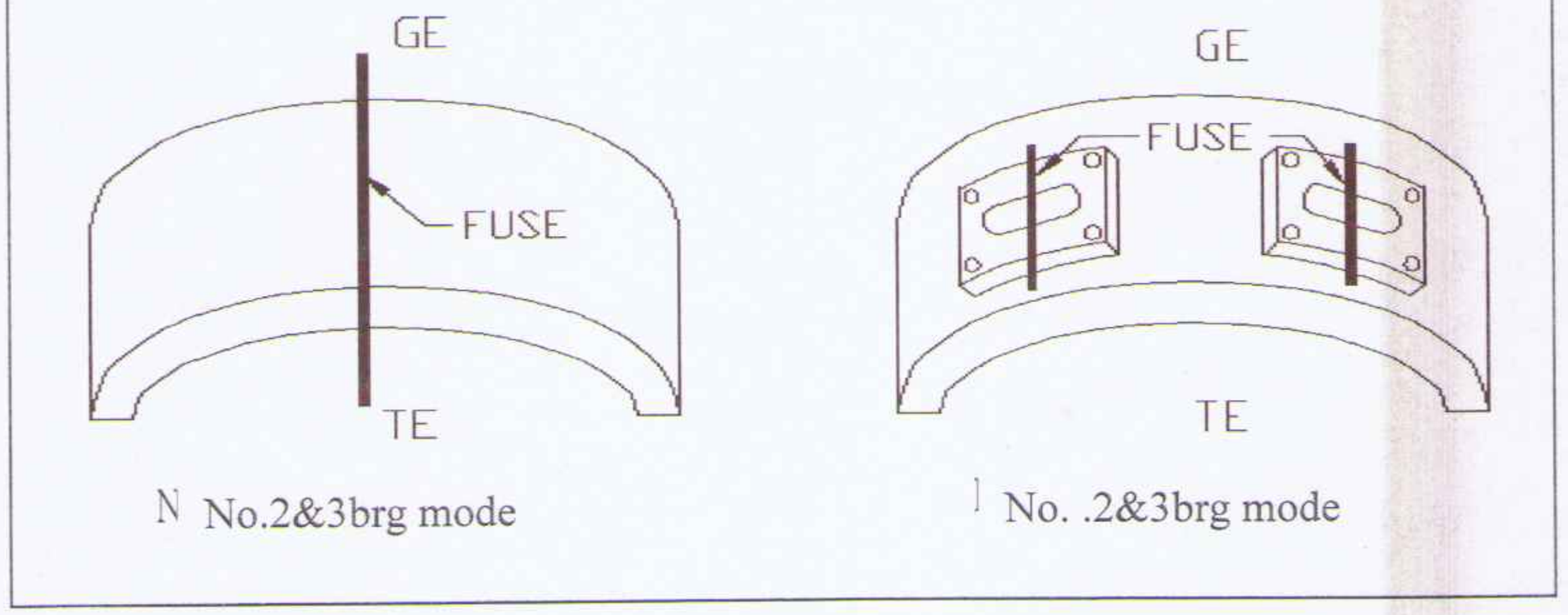
振動數值如下：　　**unit：mils**

5MW	**1X**	**1Y**	**2X**	**2Y**	**3X**	**3Y**	**4X**	**4Y**	**5X**	**5Y**
11:54	**0.9**	**0.9**	**1.6**	**1.3**	**1.3**	**1.6**	**1.8**	**1.3**	**2.1**	**0.9**

四月 **23** 日 **14:49** 滿載發電**(66.4MW)**。

Brg Pinch Check

Cabras Plant： Unit 2　　As Found　　Date：_____.



Unit：mm

Brg NO	SIM Width	Mea Point		FUSE Thick	PINCH	DESIGN	Note
1		TOP	TE		NA	0.05-0.125	
			GE		NA		
2	×0.7 =	LEFT	TE		NA	0.05-0.125	
			GE		NA		
		RIGHT	TE		NA	0.05-0.125	
			GE		NA		
3	×0.7 =	LEFT	TE		NA	0.05-0.125	
			GE		NA		
		RIGHT	TE		NA	0.05-0.125	
			GE		NA		

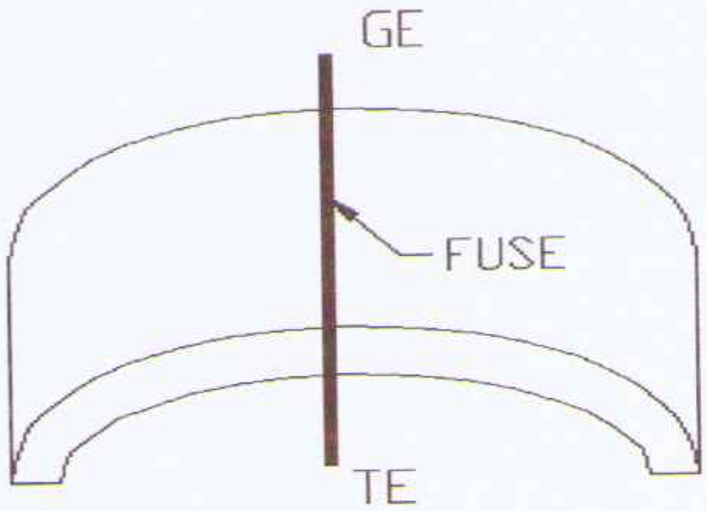
TOOL NO：

inspection result		qualified		
		unqualified		
	✓	only for reference		

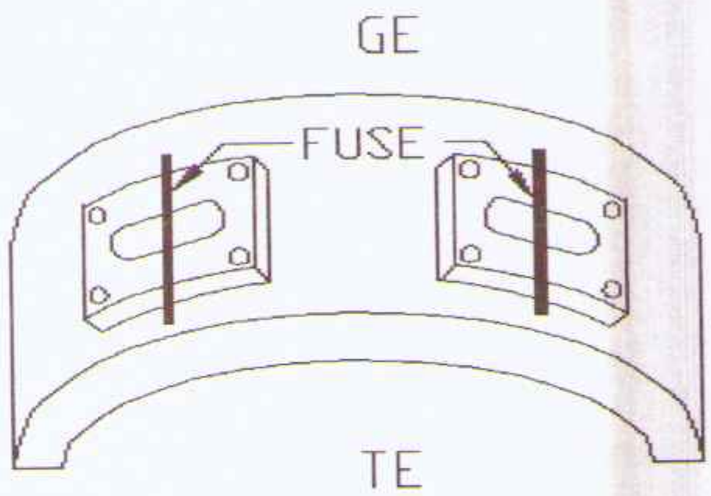
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

Brg Pinch Check

Cabras Plant： Unit 2 . .As Left　　Date：2016.4.11 .



No. .2&3brg mode



No. .2&3brg mode

單位：mm

Brg NO	SIM Width	Mea Point		FUSE Thick	PINCH	DESIGN	Note
1		TOP	TE	0.80	0.02	0.05-0.125	
			GE	0.80	0.00		
2	= ×0.7	LEFT	TE	0.80	0.02	0.05-0.125	
			GE	0.80	0.00		
		RIGHT	TE	0.80	0.00	0.05-0.125	
			GE	0.80	0.02		
3	= ×0.7	LEFT	TE	0.80	00.2	0.05-0.125	
			GE	0.80	0.02		
		RIGHT	TE	0.80	0.02	0.05-0.125	
			GE	0.80	0.02		

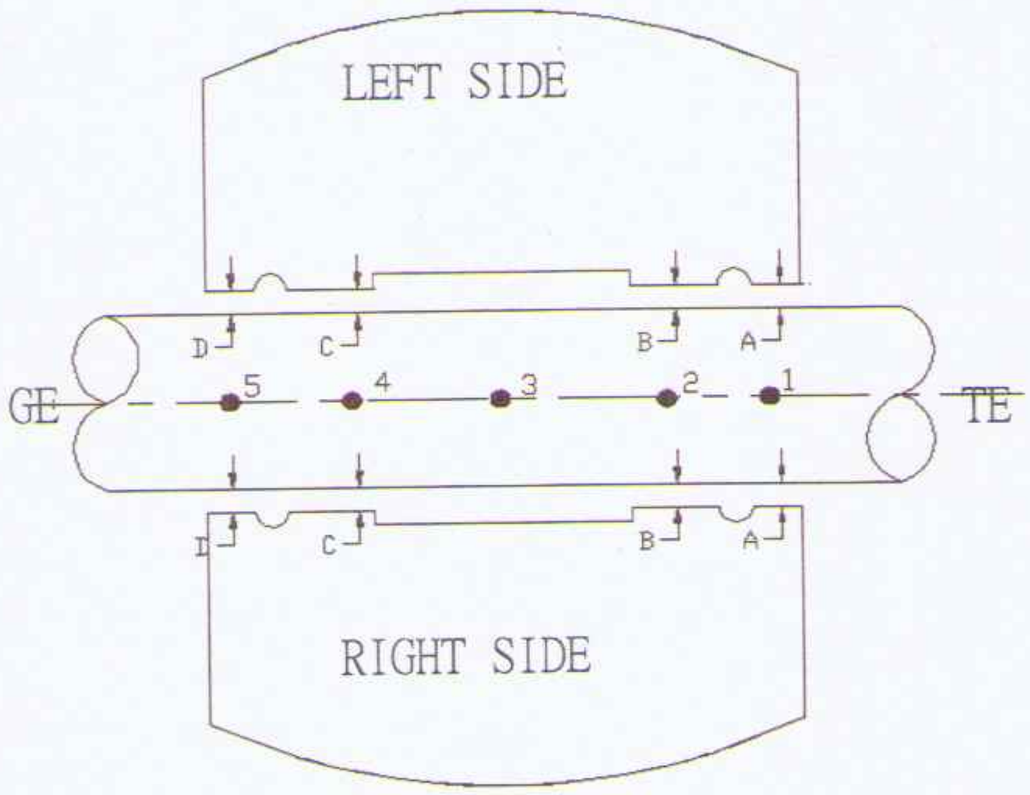
TOOL NO：

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

#1、2、3Brg Clearance&Parallel Check

Cabras Plant： Unit 2 . .As Found Date：2016/04/11.



Brg parallel check（as found） unit：mm

	A		B		C		D	
	left	right	left	right	left	right	left	right
NO.1	NA	NA	NA	NA	NA	NA	NA	NA
NO.2	NA	NA	NA	NA	NA	NA	NA	NA
NO.3	NA	NA	NA	NA	NA	NA	NA	NA

Brg parallel check（as left） unit：mm

	A		B		C		D	
	left	right	left	right	left	right	left	right
NO.1	0.20	0.16	0.20	0.18	0.22	0.19	0.25	0.20
NO.2	0.40	0.45	0.40	0.45	0.42	0.39	0.45	0.35
NO.3	0.35	0.20	0.30	0.20	0.38	0.23	0.40	0.25

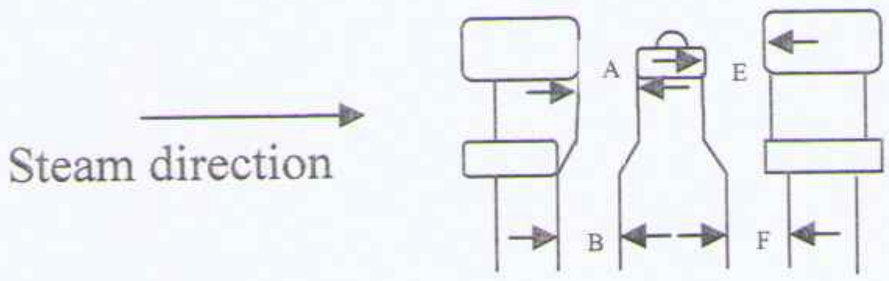
brg top clearance unit：mm

	#1	#2	#3
Design	0.31～0.37	0.51～0.61	0.43～0.56
As found	0.45	0.69	0.65
As left	0.48	0.71	0.68

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	105. 4. 11 謝明正		105. 4. 11 鄒政浩
	new part replacement			
	trace			
	as it stands			

HP Rotor Axial Clearance

Cabras Plant： Unit 2 ..As Found Date： .2016.2.26



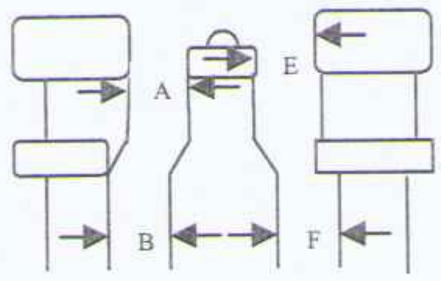
		design HP-LH				HP-RH			
		A	B	E	F	A	B	E	F
1	design	2.9	2.9	NA	NA	2.9	2.9	NA	NA
	actual	5.2	4.1			5.4	4.9		
2	design	2.9	2.9	NA	8.2	2.9	2.9	NA	8.2
	actual	4.2	4.3		10.6	4.4	4.6		10.8
3	design	2.9	2.9	NA	8.2	2.9	2.9	NA	8.2
	actual	3.8	4.2		10.4	4.2	4.2		10.6
4	design	4.3	4.3	NA	8.5	4.3	4.3	NA	8.5
	actual	4.4	4.5		11.8	4.2	4.6		11.6
5	design	4.2	4.2	NA	8.5	4.2	4.2	NA	8.5
	actual	4.1	3.9		11.0	4.4	4.1		11.3
6	design	4,2	4.2	NA	8.5	4,2	4.2	NA	8.5
	actual	4,1	3.9		9.1	3.9	4.0		9.5
7	design	4.2	4.2	NA	8.5	4.2	4.2	NA	8.5
	actual	4.1	3.8		6.8	3.9	3.6		7.2
8	design	4.2	4.4	NA	8.5	4.2	4.4	NA	8.5
	actual	4.3	4.6		7.6	3.8	3.9		7.9
9	design	4.4	4.4	NA	8.5	4.4	4.4	NA	8.5
	actual	4.7	5,2		8.1	3.8	3.9		7.9

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

HP Rotor Axial Clearance

Cabras Plant： Unit 2 ..As Left Date： 2016.4.10..

Steam direction

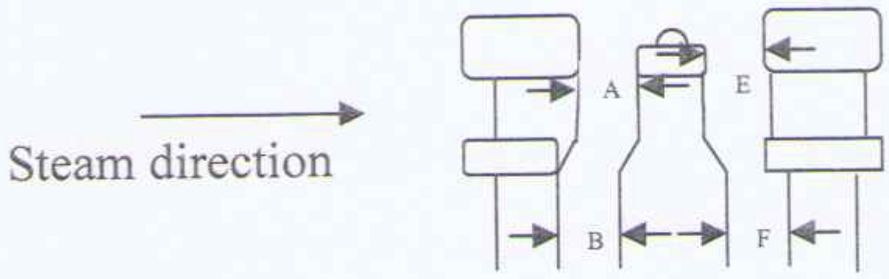


		HP-LH				HP-RH			
		A	B	E	F	A	B	E	F
1	design	2.9	2.9	NA	NA	2.9	2.9	NA	NA
	actual	**5.1**	**4.0**			**4.5**	**4.0**		
2	design	2.9	2.9	NA	8.2	2.9	2.9	NA	8.2
	actual	4.0	4.7		10.7	3.9	4.6		10.1
3	design	2.9	2.9	NA	8.2	2.9	2.9	NA	8.2
	actual	4.0	4.0		10.3	3.9	4.0		10.2
4	design	4.3	4.3	NA	8.5	4.3	4.3	NA	8.5
	actual	4.2	3.6		12.2	4.0	3.6		11.1
5	design	4.2	4.2	NA	8.5	4.2	4.2	NA	8.5
	actual	3.9	3.7		10.2	3.9	3.8		9.5
6	design	4,2	4.2	NA	8.5	4,2	4.2	NA	8.5
	actual	4.0	3.9		8.9	3.9	3.8		9.5
7	design	4.2	4.2	NA	8.5	4.2	4.2	NA	8.5
	actual	4.0	3.3		6.5	4.8	3.3		6.5
8	design	4.2	4.4	NA	8.5	4.2	4.4	NA	8.5
	actual	4.5	4.3		7.2	4.2	4.4		7.7
9	design	4.4	4.4	NA	8.5	4.4	4.4	NA	8.5
	actual	4.9	5.4		8.2	4.2	4.5		8.1

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

IP Rotor Axial Clearance

Cabras Plant： Unit 2 . .As Found Date：.2016.4.10..



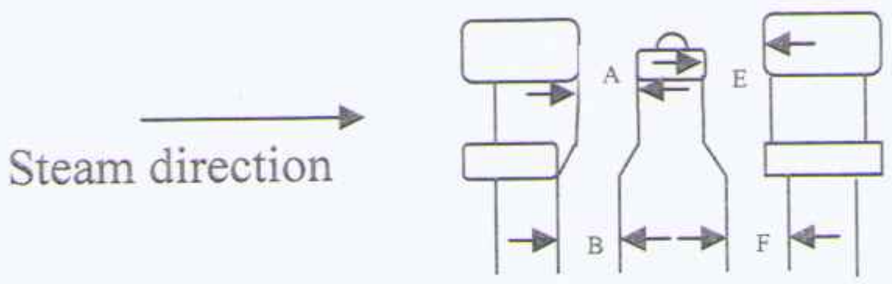
unit：mm

		IP-LH				IP-RH			
		A	B	E	F	A	B	E	F
1	design	2.3	2.5	NA	14.5	2.3	2.5	NA	14.5
	actual	2.0	3.9		15.00	1.9	4.3		13.6
2	design	3.6	3.4	NA	15.5	3.6	3.4	NA	15.5
	actual	3.8	2.8		14.6	3.1	3.2		14.7
3	design	4.8	4.8	NA	15.8	4.8	4.8	NA	15.8
	actual	4.5	4.6		14.8	4,6	4.7		14.8
4	design	4.0	4.0	NA	15.2	4.0	4.0	NA	15.2
	actual	4.0	3.9		14.8	3.9	4.0		14.2
5	design	4.5	4.5	NA	15.3	4.5	4.5	NA	15.3
	actual	3.8	3.7		14.2	4.1	3.9		13.9
6	design	4.5	4.5	NA	16.0	4.5	4.5	NA	16.0
	actual	4.3	4.1		14.6	3.6	3.8		14.9
7	design	4.5	4.5	NA	17.6	4.5	4.5	NA	17.6
	actual	4.2	4.3		16.2	3.7	3.9		17.2
8	design	4.6	4.6	NA	18.2	4.6	4.6	NA	18.2
	actual	4.2	4.1		16.8	3.8	4.1		17.1
9	design	4.6	4.6	NA	NA	4.6	4.6	NA	NA
	actual	4.4	4.2			4.1	4.2		

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

IP Rotor Axial Clearance

Cabras Plant：Unit 2 . .As Left Date：2016.4.10. ..



unit：mm

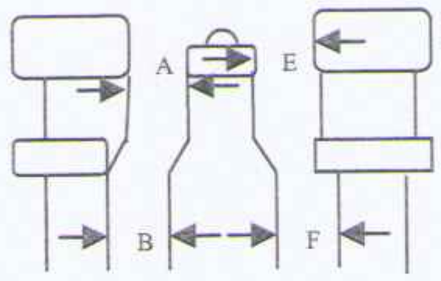
		IP-LH				IP-RH			
		A	B	E	F	A	B	E	F
1	design	2.3	2.5	NA	14.5	2.3	2.5	NA	14.5
	actual	1.3	4.0		12.8	1.5	4.9		13.3
2	design	3.6	3.4	NA	15.5	3.6	3.4	NA	15.5
	actual	3.5	2.2		14.5	2.8	2.5		14.7
3	design	4.8	4.8	NA	15.8	4.8	4.8	NA	15.8
	actual	4.3	4.3		14.8	3.9	3.1		14.5
4	design	4.0	4.0	NA	15.2	4.0	4.0	NA	15.2
	actual	3.8	3.2		14.6	3.8	3.0		14.8
5	design	4.5	4.5	NA	15.3	4.5	4.5	NA	15.3
	actual	3.6	3.8		13.8	3.3	4.0		14.4
6	design	4.5	4.5	NA	16.0	4.5	4.5	NA	16.0
	actual	3.9	3.6		14.8	3.5	3.6		14.8
7	design	4.5	4.5	NA	17.6	4.5	4.5	NA	17.6
	actual	4.2	4.2		16.0	3.5	3.8		17.4
8	design	4.6	4.6	NA	18.2	4.6	4.6	NA	18.2
	actual	4.2	4.4		16.5	3.6	3.9		16.3
9	design	4.6	4.6	NA	NA	4.6	4.6	NA	NA
	actual	4.2	4.3			3.7	4.3		

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	105. 4. 10 謝明正		力修課 工務組管理師 105. 4. 10 鄭政浩
	new part replacement			
	trace			
	as it stands			

LP Rotor Axial&Radial Clearance

Cabras Plant： Unit 2 . .As Found Date：.2016.2.24 ..

Steam direction



Unit：mm

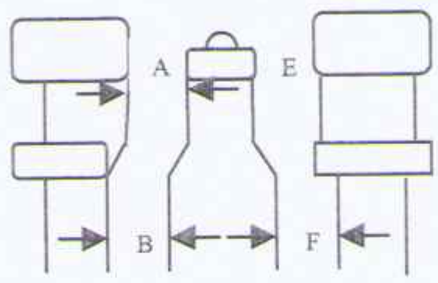
		LP-LH				LP-RH			
		A	B	E	F	A	B	E	F
TE4	design	12.5	18.5	NA	NA	12.5	18.5	NA	NA
	actual	12.0	12.5			12.1	12.3		
TE3	design	13.3	18.5	NA	15.4	13.3	18.5	NA	15.4
	actual	12.0	12.8		11.60	12.1	12.5		16.40
TE2	design	13.3	18.5	NA	14.9	13.3	18.5	NA	14.9
	actual	11.7	11.5		11.70	11.6	11.5		14.80
TE1	design	11.2	16.3	NA	14.2	11.2	16.3	NA	14.2
	actual	11.20	12.0		11.00	11.3	12.1		14.50
GE1	design	9.9	9.9	NA	16.1	9.9	9.9	NA	16.1
	actual	7.4	7.7		10.10	7,3	7.6		15.50
GE2	design	11.8	13.5	NA	17.2	11.8	13.5	NA	17.2
	actual	7.7	8.2		11.00	7.8	8.3		16.10
GE3	design	11.6	12.3	NA	17.5	11.6	12.30	NA	17.5
	actual	8.8	8.30		12.00	8.8	8.4		16.80
GE4	design	11.6	16.8	NA	NA	11.6	16.8	NA	NA
	actual	8.8	15.5			8..9	15.8		

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	力修謝 105.2.24 謝明正		力修鄒 105.2.24 鄒政浩
	new part replacement			
	trace			
	as it stands			

LP Rotor Axial&Radial Clearance

Cabras Plant： Unit 2 . .As Left Date：2016.4.10..

Steam direction



Unit：mm

		LP-LH				LP-RH			
		A	B	E	F	A	B	E	F
TE4	design	12.5	18.5	NA	NA	12.5	18.5	NA	NA
	actual	11.9	17.8			12.4	18.1		
TE3	design	13.3	18.5	NA	15.4	13.3	18.5	NA	15.4
	actual	11.7	16.3		13.6	11.5	16.0		12.1
TE2	design	13.3	18.5	NA	14.9	13.3	18.5	NA	14.9
	actual	11.3	14.7		12.4	11.0	14.3		13.1
TE1	design	11.2	16.3	NA	14.2	11.2	16.3	NA	14.2
	actual	10.7	13.9		11.4	11.6	13.8		11.4
GE1	design	9.9	9.9	NA	16.1	9.9	9.9	NA	16.1
	actual	7.8	10.7		14.4	8.1	10.6		14.8
GE2	design	11.8	13.5	NA	17.2	11.8	13.5	NA	17.2
	actual	8.8	12.2		15.8	8.8	11.7		15.5
GE3	design	11.6	12.30	NA	17.5	11.6	12.30	NA	17.5
	actual	8.3	12.3		15.3	8.8	12.5		15.8
GE4	design	11.6	16.8	NA	NA	11.6	16.8	NA	NA
	actual	9.3	15.3			7.6	15.3		

inspection result		qualified		
		unqualified		
	√	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

HP Packing ring clearance

Cabras Plant : Unit 2 . .As Left Date : 2016.2.26..
2016.04.10

Name	No.	AS FOUND				AS LEFT			
		L	B	R	T	L	B	R	T
HP	1	0.50	1.10	0.30	NA	0.50	2.10	0.30	
Outer Gland	2	0.50	1.10	0.30	NA	0.40	1.85	0.30	
HP	3	1.30	1.00	0.70	NA	1.10	1.90	0.40	
Inner Gland	4	1.10	1.30	0.90	NA	1.20	1.90	0.45	
HP TE	5	1.00	1.30	0.60	NA	1.30	2.00	0.25	1.55
Dummy	6	1.10	1.25	0.50	NA	1.60	2.00	0.30	1.85
	7	1.10	1.25	1.00	NA	1.50	2.10	0.40	1.75
HP	8	2.50	1.55	0.80	NA	0.55	1.60	0.20	1.60
	9	1.30	1.45	0.90	NA	0.60	1.40	0.15	1.60
	10	1.20	1.55	0.50	NA	1.00	2.00	0.30	2.35
	11	1.20	1.15	0.70	NA	1.00	2.20	0.40	2.15
	12	1.00	0.95	0.30	NA	0.90	2.45	0.20	1.95
	13	1.00	1.80	0.40	NA	0.90	2.40	0.30	1.70
	14	1.40	1.10	0.50	NA	1.10	1.85	0.35	2.20
	15	1.10	1.65	0.30	NA	0.80	1.80	1.05	2.15
HP	16	1.20	1.20	0.80	NA	0.80	1.65	0.75	1.60
Center	17	1.10	1.25	1.40	NA	1.05	1.90	1.30	1.70
Gland	18	1.10	1.30	0.40	NA	1.75	1.90	0.40	1.80
	19	1.10	1.30	0.60	NA	0.85	1.80	0.55	1.90
	20	1.00	1.30	0.60	NA	1.00	2.00	0.50	2.00

inspection result		**qualified**		
		unqualified		
	✓	**only for reference**		

Treatment				
	redo	**verify**	**customer**	**captain**
	repair	105. 4. 10 謝明正		105. 4. 10 鄒政浩
	new part replacement			
	trace			
	as it stands			

HP Seal Strip clearance

Cabras Plant：Unit 2 . .As Left Date：2016.2.24..
2016.04.10

	AS FOUND				AS LEFT			
NO	L	B	R	T	L	B	R	T
1	1.80	2.45	0.70	NA	1.70	2.33	1.30	2.20
2	1.10	1.45	0.30	NA	1.20	2.40	0.65	2.30
3	1.00	1.55	1.10	NA	1.20	2.00	1.10	1.55
4	1.00	2.40	1.00	NA	0.70	2.00	0.10	2.25
5	1.20	2.25	0.70	NA	1.40	2.45	0.70	1.55
6	0.90	2.45	0.80	NA	1.50	1.55	0.95	1.95
7	1.00	2.35	0.60	NA	1.50	2.45	1.50	2.40
8	1.00	1.45	1.20	NA	1.20	1.40	1.20	2.80
9	2.00	2.40	0.60	NA	1.40	2.40	1.40	1.85

inspection result		**qualified**		
		unqualified		
	✓	**only for reference**		

Treatment				
	redo	**verify**	**customer**	**captain**
	repair			
	new part replacement			
	trace			
	as it stands			

IP Packing ring clearance

Cabras Plant：Unit 2 . .As Left Date：.2016.2.24.
2016.04.10

Name	No.	AS FOUND				AS LEFT			
		L	B	R	T	L	B	R	T
IP TE Dummy	21	1.20	1.30	0.70	NA	1.10	2.00	0.55	1.45
	22	1.30	1.30	0.70	NA	1.00	1.75	0.30	1.65
	23	1.30	1.30	0.70	NA	1.20	1.45	0.35	1.85
IP	24	1.80	1.30	1.00	NA	0.85	2.10	0.60	1.95
	25	1.80	0.90	0.90	NA	1.20	1.80	0.80	1.95
	26	1.00	1.10	0.70	NA	1.10	2.20	0.70	1.70
	27	1.30	1.55	1.40	NA	1.30	2.10	1.10	1.40
	28	0.80	1.25	0.50	NA	0.70	2.40	0.20	2.25
	29	1.30	2.00	0.80	NA	1.30	1.55	0.85	1.40
	30	1.00	2.00	0.70	NA	0.15	2.40	0.85	1.70
	31	1.50	1.90	0.40	NA	0.80	1.15	0.40	1.90
	32	1.50	1.80	0.40	NA	0.30	1.40	0.20	NA
	33	2.50	1.80	0.80	NA	0.80	1.45	0.10	NA
IP Inner Gland	34	1.00	1.30	0.60	NA	0.95	2.30	0.60	
	35	1.00	2.00	0.50	NA	0.95	2.40	0.30	
IP Outer Gland	36	1.10	1.95	0.30	NA	1.10	2.30	0.25	
	37	0.90	1.30	0.70	NA	0.60	2.40	0.90	

inspection result		**qualified**		
		unqualified		
	✓	**only for reference**		
Treatment				
	redo	**verify**	**customer**	**captain**
	repair			
	new part replacement			
	trace			
	as it stands			

IP SEAL STRIP CLEARANCE

Cabras Plant：Unit 2 ．＿＿.As Left Date：2016.2.24..
2016.04.10

	AS FOUND				AS LEFT			
NO	L	B	R	T	L	B	R	T
1	2.30	2.45	2.60	NA	1.50	1.80	1.80	2.30
2	1.20	1.70	1.00	NA	1.40	1.90	1.30	2.10
3	1.00	1.00	1.30	NA	1.10	1.10	1.20	2.15
4	1.00	1.75	1.50	NA	1.20	1.75	1.20	2.30
5	1.40	2.35	1.20	NA	0.75	2,10	0.90	2.20
6	1.10	2.30	1.70	NA	1.30	2.30	0.70	2.20
7	1.50	2.40	1.00	NA	1.30	2.40	1.30	2.30
8	2.00	2.40	1.00	NA	1.60	2.40	1.70	NA
9	1.90	2.40	1.00	NA	2.30	2.25	1.20	NA

inspection result		**qualified**		
		unqualified		
	✓	**only for reference**		

Treatment				
	redo	**verify**	**customer**	**captain**
	repair	105. 4. 10 謝明正		105. 4. 10 鄒政浩
	new part replacement			
	trace			
	as it stands			

LP Packing ring clearance

Cabras Plant：Unit 2 . .As Left Date：2016.2.24..
2016.04.10

Name	No.	AS FOUND				AS LEFT			
		L	B	R	T	L	B	R	T
LP TE Gland	38	0.30	0.95	1.30	NA	0.20	1.65	1.10	
	39	0.50	1.55	0.40	NA	0.25	1.80	0.30	
	40	0.90	1.00	0.60	NA	0.70	1.70	0.70	
IP	41	0.40	1.70	1.50	NA	0.50	1.95	1.30	3.40
	42	0.90	1.30	0.30	NA	0.55	1.30	0.30	2.60
	43	1.10	2.20	0.35	NA	0.80	1.45	0.65	2.00
	44	1.20	2.45	1.70	NA	1.50	1.55	1.50	3.30
	45	0.80	2.10	0.80	NA	0.50	1.80	0.75	2.30
	46	0.80	2.05	0.60	NA	1.00	1.75	0.25	2.80
	47	2.10	2.20	0.30	NA	1.05	1.40	0.95	3.20
LP GE Gland	48	0.90	1.20	0.30	NA	0.80	1.30	0.30	
	49	1.00	1.10	0.30	NA	0.85	1.60	0.55	
	50	1.10	1.10	0.80	NA	1.05	1.70	0.55	

inspection		**qualified**		
		unqualified		
result	✓	**only for reference**		

Treatment				
	redo	**verify**	**customer**	**captain**
	repair	力修證 105.4.10 謝明正		力修證 105.4.10 鄒政浩
	new part replacement			
	trace			
	as it stands			

LP SEAL STRIP CLEARANCE

Cabras Plant：Unit 2 ．___.As Left Date：..2016.2.24
2016.04.10

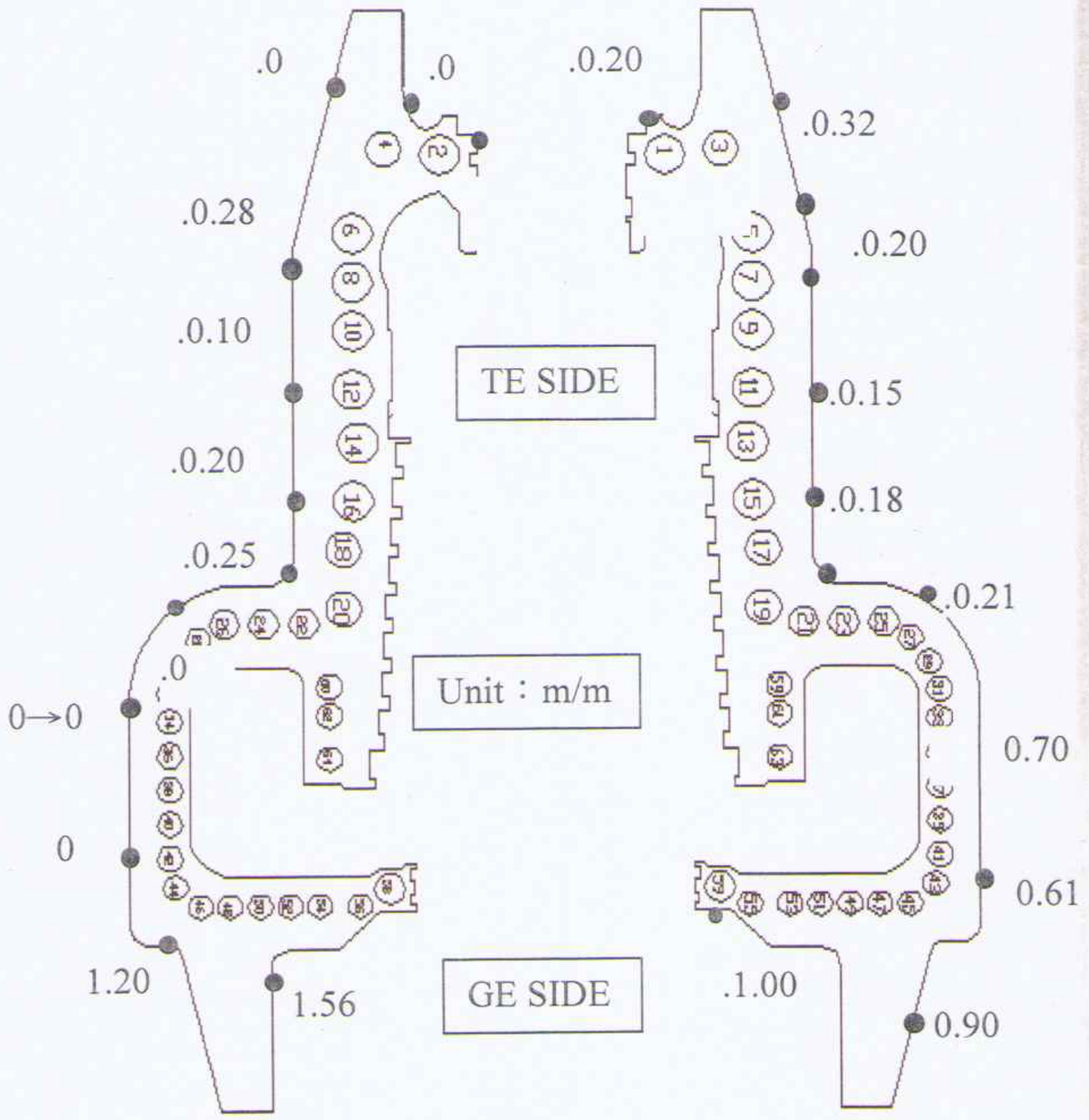
	AS FOUND				AS LEFT			
NO	L	B	R	T	L	B	R	T
22		1.45		NA	2.60	2.40	0.90	2.20
21	2.10	2.15	1.60	NA	1.95	1.80	1.70	1.80
20	2.25	1.05	1.70	NA	2.00	2.00	2.10	1.55
19	2.05	1.15	2.85	NA	2.30	1.45	2.70	2.50
19	1.30	0.80	1.75	NA	2.10	1.70	2.30	2.50
20	1.50	0.95	1.50	NA	1.70	1.90	1.60	2.20
21	2.00	1.30	2.00	NA	2.10	2.30	1.60	2.00
22		2.30		NA	2.30	2.45	1.70	1.90

inspection result		**qualified**		
		unqualified		
	✓	**only for reference**		

Treatment				
	redo	**verify**	**customer**	**captain**
	repair	力修課 105.4.10 謝明正		力修課 105. 4. 10 鄒政浩
	new part replacement			
	trace			
	as it stands			

HP Outer Casing Joint Face Clearance

Cabras Plant： Unit 1 . .As Found Date：2016.2.23



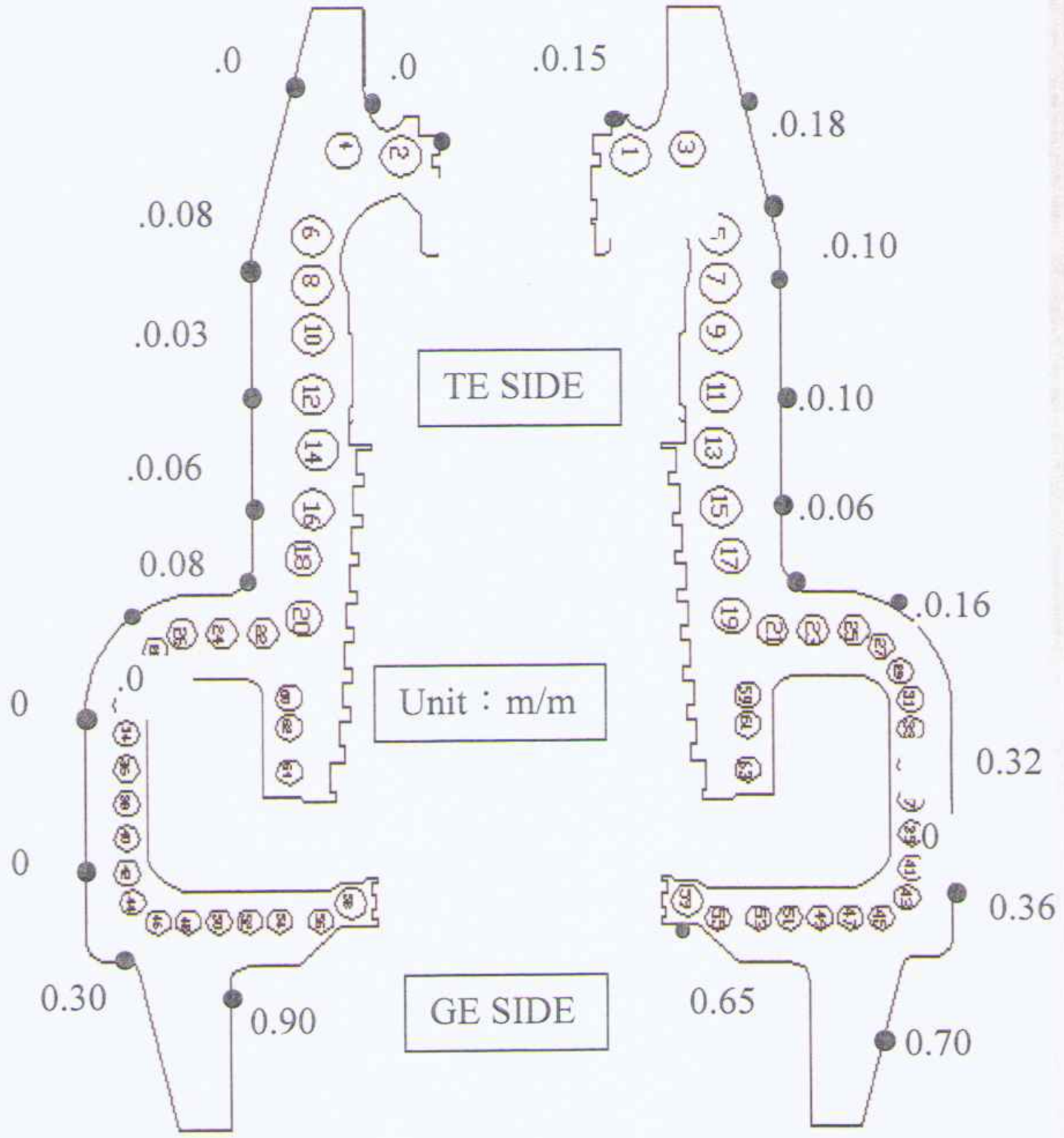
TOOL NO：

unit：mm

inspection		qualified		
		unqualified		
result	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	力修謝 2.23 謝明正		力修鄭 105. 2. 23 鄭政浩
	new part replacement			
	trace			
	as it stands			

HP Outer Casing Joint Face Clearance

Cabras Plant： Unit 1 . .As Left Date ：2016.04.13

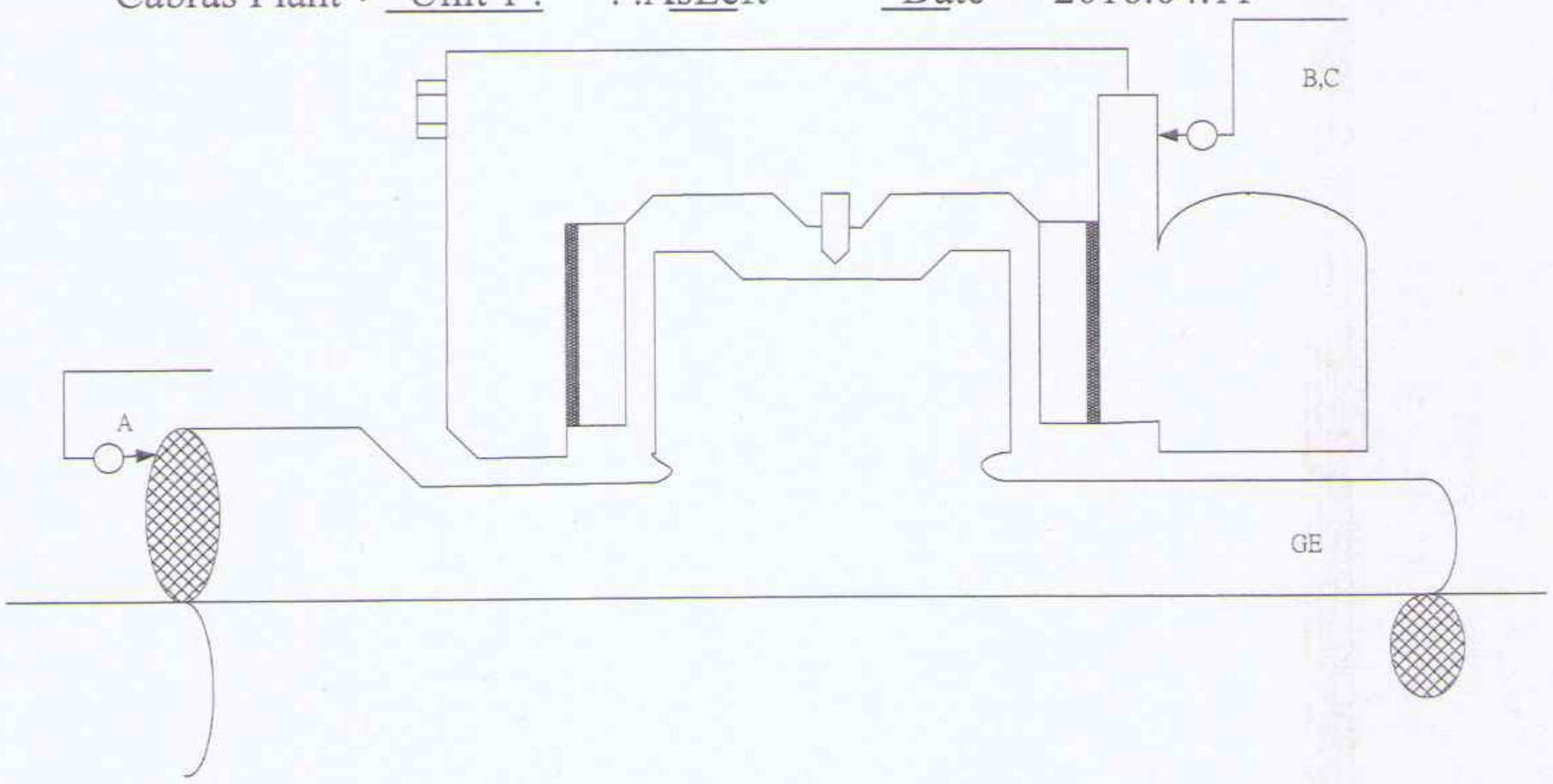


unit：mm

inspection		qualified		
		unqualified		
result	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

Thrust Brg Clearance Check

Cabras Plant： Unit 1 .　　. .AsLeft　　Date： 2016.04.11



Thrust Brg Clearance Check (as found) 2016.2.26　　Unit：mm

		L	Casing L	Casing R	Gage	CLE	design
as found	rotor to TE	309.69	10.00	5.00	5.00		0.38～0.50
	rotor to GE	310.67	9.18	4.07	4.56	0.44	

Thrust Brg Clearance Check as left　2016.4.11　　Unit：mm

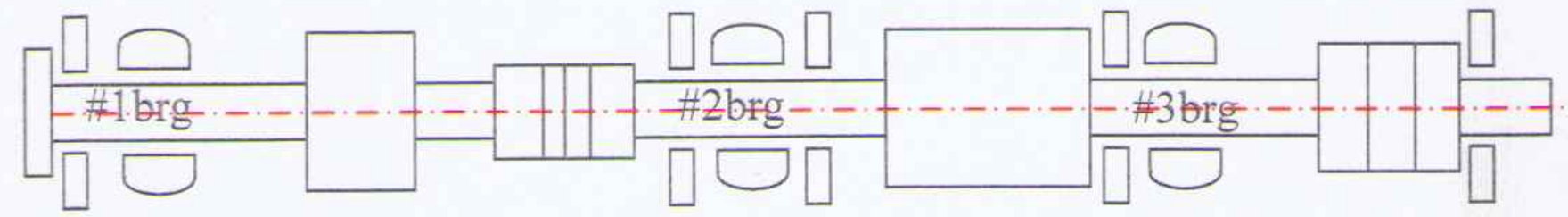
		L	Casing L	Casing R	Gage	CLE	design
as left	rotor to TE	309.83	10.00	5.00	5.00		0.38～0.50
	rotor to GE	310.50	9.93	5.54	4.50	0.45	

inspection		qualified	measureer	
		unqualified		
result	✓	only for reference		
Option				

	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

OIL RING BORE Measurement

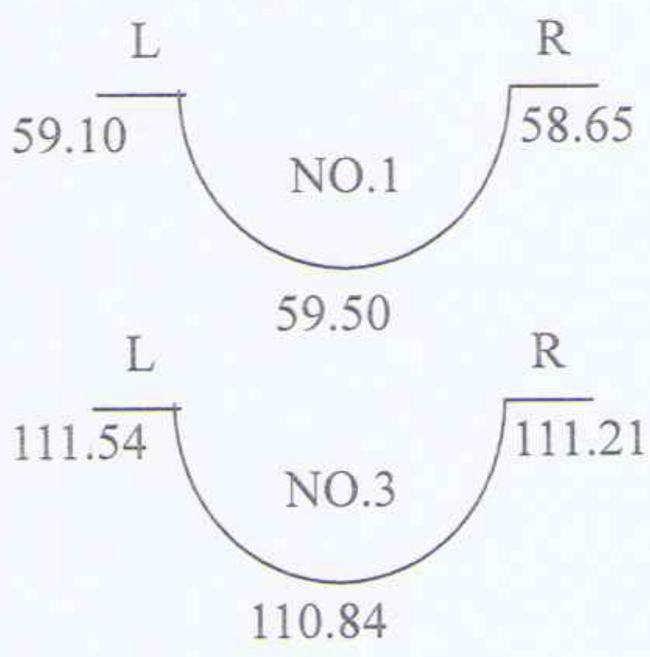
Cabras Plant： **Unit 1** . .As Found　Date：2016.2.25

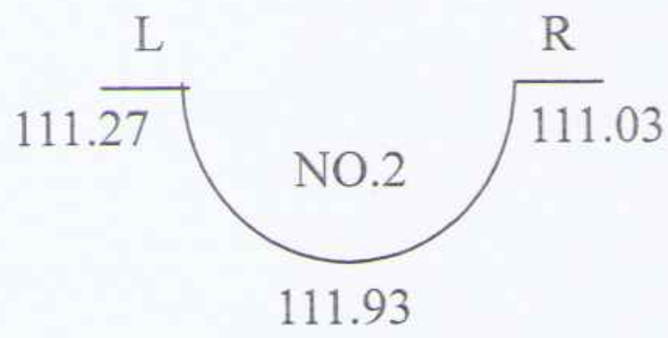


NO.1　　NO.2　　NO.3

CLEARANCE BETWEEN OIL RING BORE AND SHAFT

unit:mm

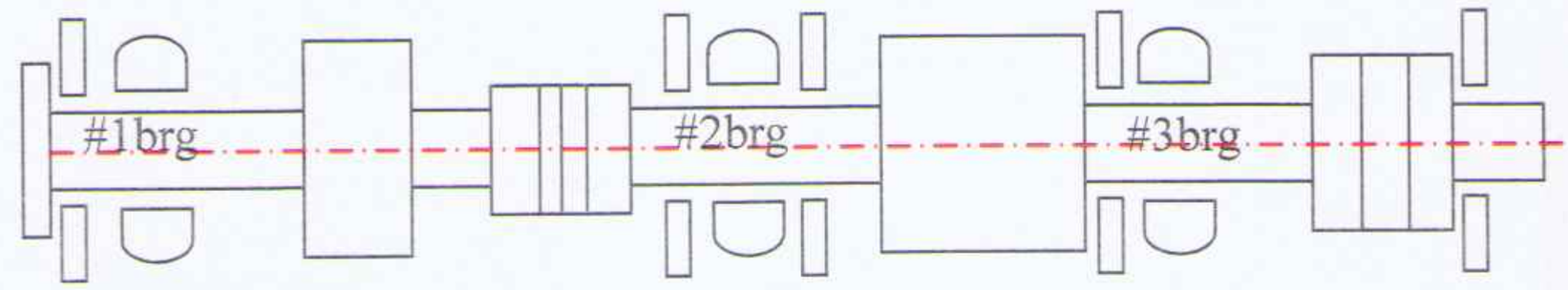




inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

OIL RING BORE Measurement

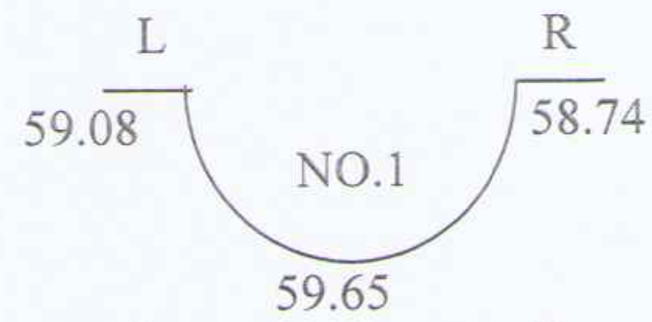
Cabras Plant： **Unit 1** . .As Left Date：2016.4.10

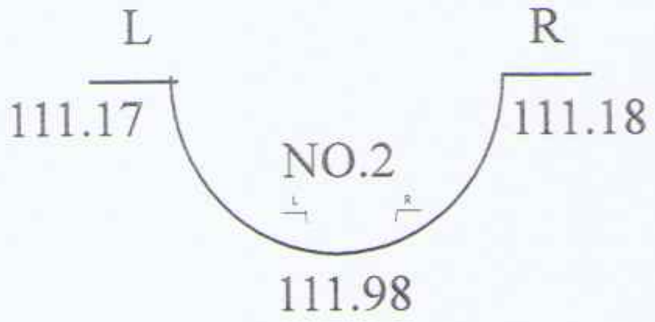


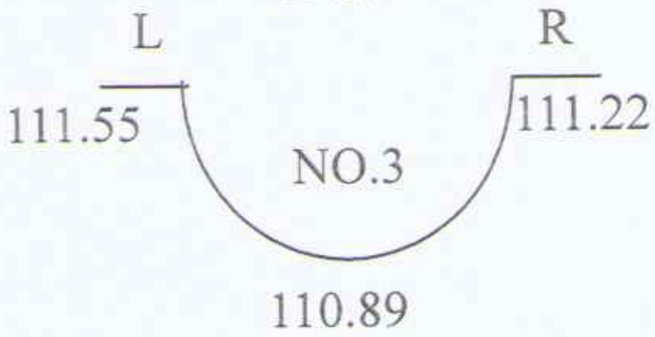
NO.1 NO.2 NO.3

CLEARANCE BETWEEN OIL RING BORE AND SHAFT

unit:mm





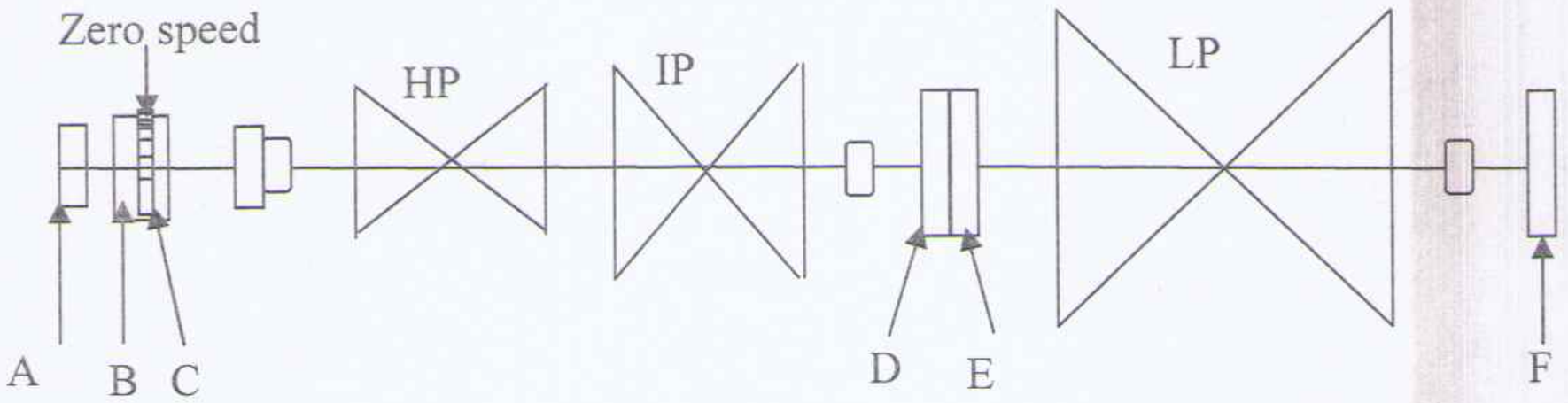


inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

RUNOUT CHECK

Cabras Plant： Unit 1 . .As Found Date：



UNIT：1/100mm

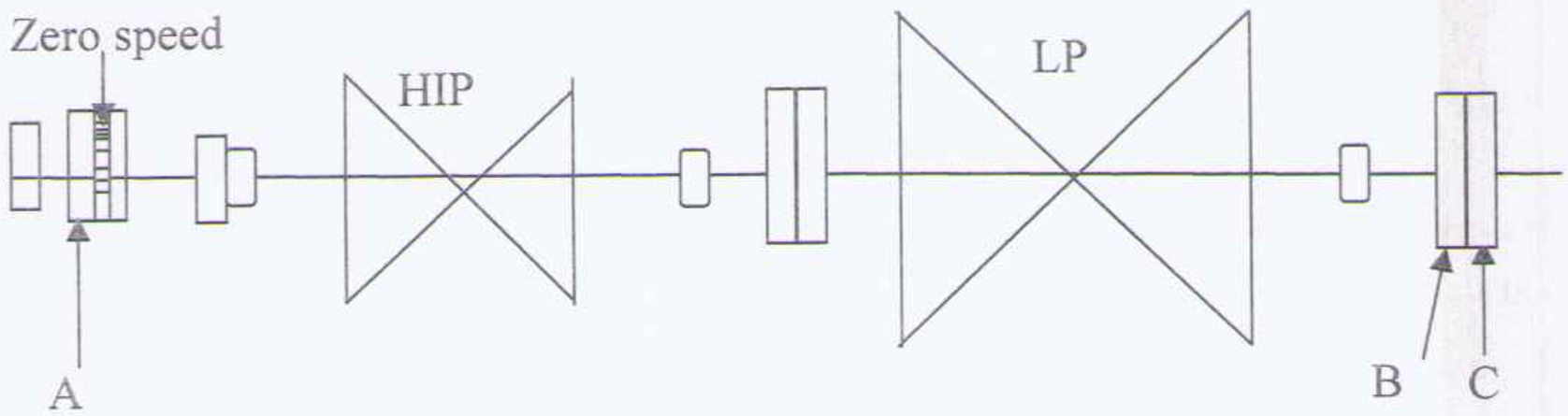
	A	B	C
1	NA	NA	NA
2			
3			
4			
5			
6			
7			
8			

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

RUNOUT CHECK

Cabras Plant： Unit 1 . .As Left Date：2016.4.13



UNIT：1/100mm

	A	B	C
1	13	12	11
2	13	12	11
3	16	12	10
4	16	11	9
5	17	11	9
6	16	10	9
7	15	11	10
8	14	11	11

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	105. 4. 13 謝明正		105. 4. 13 鄒政浩
	new part replacement			
	trace			
	as it stands			

HP INNER CASING BOLT STRETCH RH

Cabras Plant： Unit 2 .. As Left Date：.2016.4.11

NO	BOLT SIZE	FREE LENTH	STRETCH	BEFORE STRETCH	AFTER STRETCH	FINAL STRETCH
1	$2^1/_2$"	13"	0.41	19.12	18.72	0.40
2	$2^3/_4$"	$13^3/_4$"	0.36	1.95	1.58	0.37
3	3"	15"	0.43	22.48	22.07	0.41
4	3"	15"	0.43	19.25	18.85	0.40
5	4"	16"	0.46	24.45	23.96	0.49
6	4"	19"	0.56	6.59	6.05	0.54
7	4"	19"	0.56	7.56	7.02	0.54
8	4"	19"	0.56	7.12	6.59	0.53
9	4"	19"	0.56	7.16	6.64	0.52
10	4"	19"	0.56	7.46	6.93	0.53
11	$3^1/_2$"	18"	0.54	1.53	0.98	0.55
12	$3^1/_2$"	18"	0.54	1.30	0.77	0.53

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

HP INNER CASING BOLT STRETCH LH

Cabras Plant： Unit 2. .. As Left Date：2016.4.11

NO	BOLT SIZE	FREE LENTH	STRETCH	BEFORE STRETCH	AFTER STRETCH	FINAL STRETCH
1	$2^1/_2$"	13"	0.41	16.69	16.27	0.42
2	$2^3/_4$"	$13^3/_4$"	0.36	1.58	1.23	0.35
3	3"	15"	0.43	19.21	18.80	0.41
4	3"	15"	0.43	19.92	19.49	0.43
5	4"	16"	0.46	0.53	0.08	0.45
6	4"	19"	0.56	6.37	5.84	0.53
7	4"	19"	0.56	4.24	3.71	0.53
8	4"	19"	0.56	2.90	2.36	0.54
9	4"	19"	0.56	25.70	25.17	0.53
10	4"	19"	0.56	7.31	6.75	0.56
11	$3^1/_2$"	18"	0.54	1.42	0.87	0.55
12	$3^1/_2$"	18"	0.54	1.37	0.85	0.52

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	105. 4. 11. 謝明正		105. 4. 11 鄭政浩
	new part replacement			
	trace			
	as it stands			

HP OUTER CASING BOLT STRETCH RH

Cabras Plant：Unit 1...　As Left　Date：2016/04.13

NO	Bolt size	bolt lenth	stretch	Free lenth	After	angle	final
1	3 1/2"	17"	48	15.82	15.33	NA	
2	3 1/2"	17"	48	NA	NA	60°	
3	3 1/2"	17"	48	NA	NA	63°	
4	3 1/2"	18"	53	NA	NA	65°	
5	3 3/4"	18"	53	NA	NA	63°	
6	4"	18 1/2"	48	12.33	11.84		49
7	4 1/2"	18 1/2"	48	NA	NA	NA	
8	4 1/2"	20 1/2"	56	23.04	22.47		57
9	4 1/2"	20 1/2"	56	22.73	22.15		58
10	4 1/2"	20 1/2"	56	20.46	19.88		58
11	4 1/2"	20 1/2"	56	24.74	22.16		58
12	4 1/2"	20 1/2"	56	NA	NA	65°	
13	4 1/2"	20 1/2"	56	NA	NA	63°	
14	4 1/2"	20 1/2"	56	21.23	20.65		58
15	4 1/2"	20 1/2"	56	21.80	21.22		58
16	4 1/2"	20 1/2"	56	20.38	19.79		59
17	4 1/2"	20 1/2"	56	22.16	2159		57
18	4 1/2"	18 1/2"	48	22.09	21.60		49
19	4 1/2"	18 1/2"	48	25.05	25.56		49
20	4 1/2"	23"	48	24.94	24.44		50
21	3 1/2"	17"	48	NA	NA	60°	

inspection		qualified		
		unqualified		
result	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

HP OUTER CASING BOLT STRETCH LH

Cabras Plant： Unit ：m/m As Left Date：2016/04.13

NO	Bolt size	bolt lenth	stretch	Free lenth	After	angle	final
1	3 1/2"	17"	48	14.94	14.45	NA	49
2	3 1/2"	17"	48	NA	NA	60°	
3	3 1/2"	17"	48	NA	NA	60°	
4	3 1/2"	18"	53	13.97	13.42	NA	55
5	3 3/4"	18"	53	NA	NA	63°	
6	4"	18 1/2"	48	13.11	12.62	NA	49
7	4 1/2"	18 1/2"	48	NA	NA	NA	
8	4 1/2"	20 1/2"	56	23.46	22.89	NA	57
9	4 1/2"	20 1/2"	56	24.14	23.56	NA	58
10	4 1/2"	20 1/2"	56	22.89	22.31	NA	58
11	4 1/2"	20 1/2"	56	22.34	21.77	NA	57
12	4 1/2"	20 1/2"	56	24.73	24.16	NA	57
13	4 1/2"	20 1/2"	56	23.90	23.32	NA	58
14	4 1/2"	20 1/2"	56	22.47	21.89	NA	58
15	4 1/2"	20 1/2"	56	NA	NA	N64°	
16	4 1/2"	20 1/2"	56	22.62	22.05	NA	57
17	4 1/2"	20 1/2"	56	22.40	21.83	NA	57
18	4 1/2"	18 1/2"	48	21.86	21.38	NA	48
19	4 1/2"	18 1/2"	48	0.81	0.32	NA	49
20	4 1/2"	23"	48	1.43	0.9	NA	49
21	3 1/2"	17"	48	NA	NA	60°	

inspection		qualified		
		unqualified		
result	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair	105.4.13 謝明正		105.4.13 鄒政浩
	new part replacement			
	trace			
	as it stands			

HP STEAM INLET PIPE BOLT STRETCH

Cabras Plant： Unit 1. .. As Left　　Date： 2016/04.12

NO	BOLT SIZE	FREE LENTH	STRETCH	ANGLE	AFTER STRETCH	FINAL STRETCH
1	2 1/2"	19"	27	78°		78°
2	2 1/2"	19"	27	78°		78°
3	2 1/2"	19"	27	78°		78°
4	2 1/2"	19"	27	78°		78°
5	2 1/2"	19"	27	78°		78°
6	2 1/2"	19"	27	78°		78°
7	2 1/2"	19"	27	78°		78°
8	2 1/2"	19"	27	78°		78°
9	2 1/2"	19"	27	78°		78°
10	2 1/2"	19"	27	78°		78°
11	2 1/2"	19"	27	78°		78°
12	2 1/2"	19"	27	78°		78°

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

LP- GEN Coupling Bolt Streching Measurement

Cabras Plant： Unit 1，.. As Left　　Date：2016.4.13

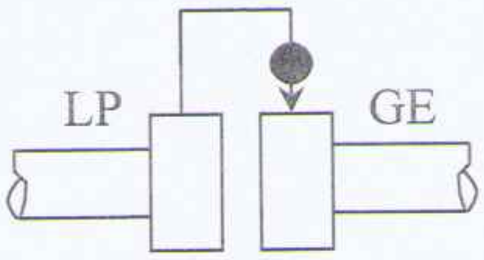
一、TENSION VALUE　　UNIT：㎜

BOLT NO	FREE LENTH	FINAL LENTH	STRETCH	DESIGN
1	2.20	2.62	0.42	
2	2.23	2.63	0.40	
3	2.39	2.82	0.43	
4	2.10	2.52	0.42	
5	1.25	1.68	0.43	
6	0.84	1.26	0.42	0.40
7	2.37	2.80	0.43	∫
8	2.20	2.60	0.40	0.43
9	2.08	2.48	0.40	
10	2.25	2.67	0.42	
11	2.25	2.68	0.43	
12	2.01	2.44	0.43	

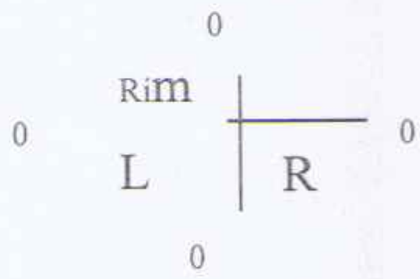
inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	Redo	verify	customer	captain
	Repair	力修部 105.4.13 謝明正		力修部 第一工作服務室 105. 4. 13 鄒政浩
	new part replacement			
	Trace			
	as it stands			

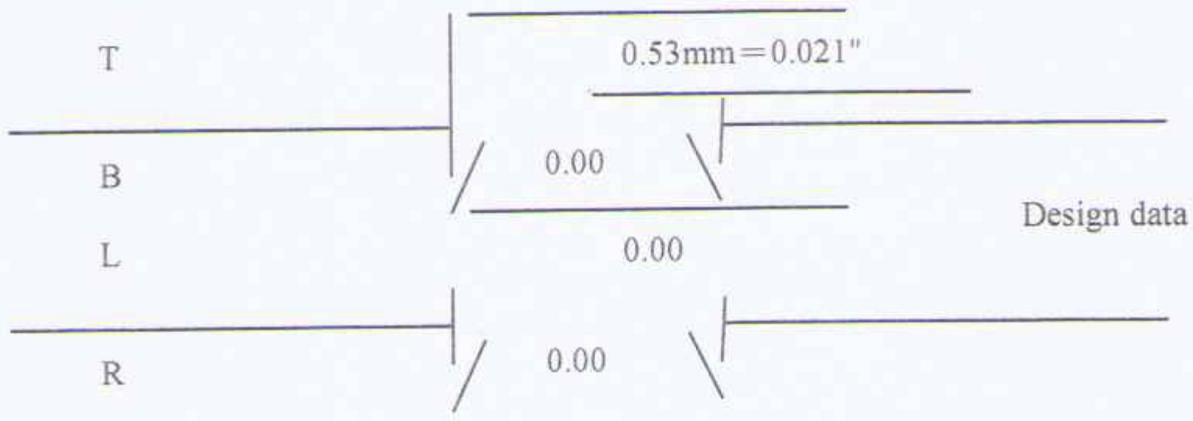
LP-GE Alignment

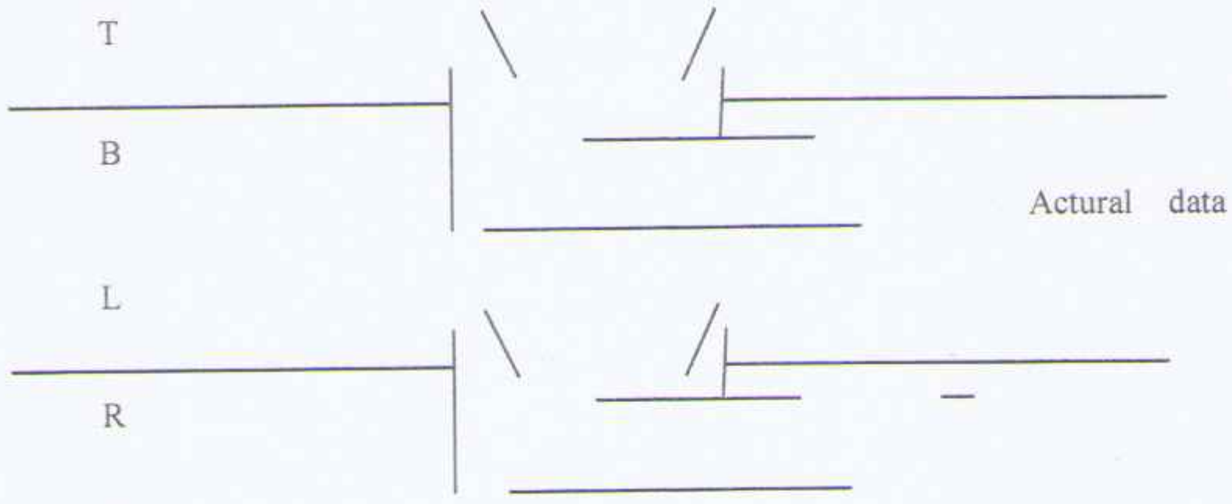
Cabras Plant： Unit 1 .As Found Date：



	T	L	B	R
0	NA	NA	NA	NA
90	NA	NA	NA	NA
180	NA	NA	NA	NA
270	NA	NA	NA	NA
Ave	NA	NA	NA	NA



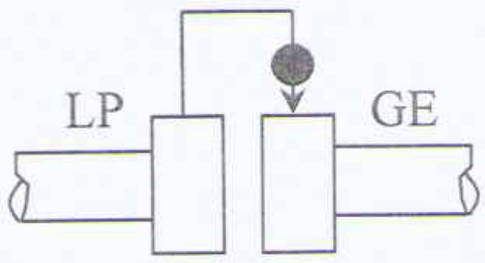




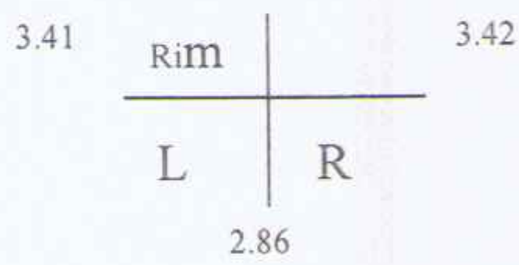
inspection		qualified		
		unqualified		
result	✓	only for reference		
Option				
	Redo	verify	customer	captain
	Repair			
	new part replacement			
	Trace			
	as it stands			

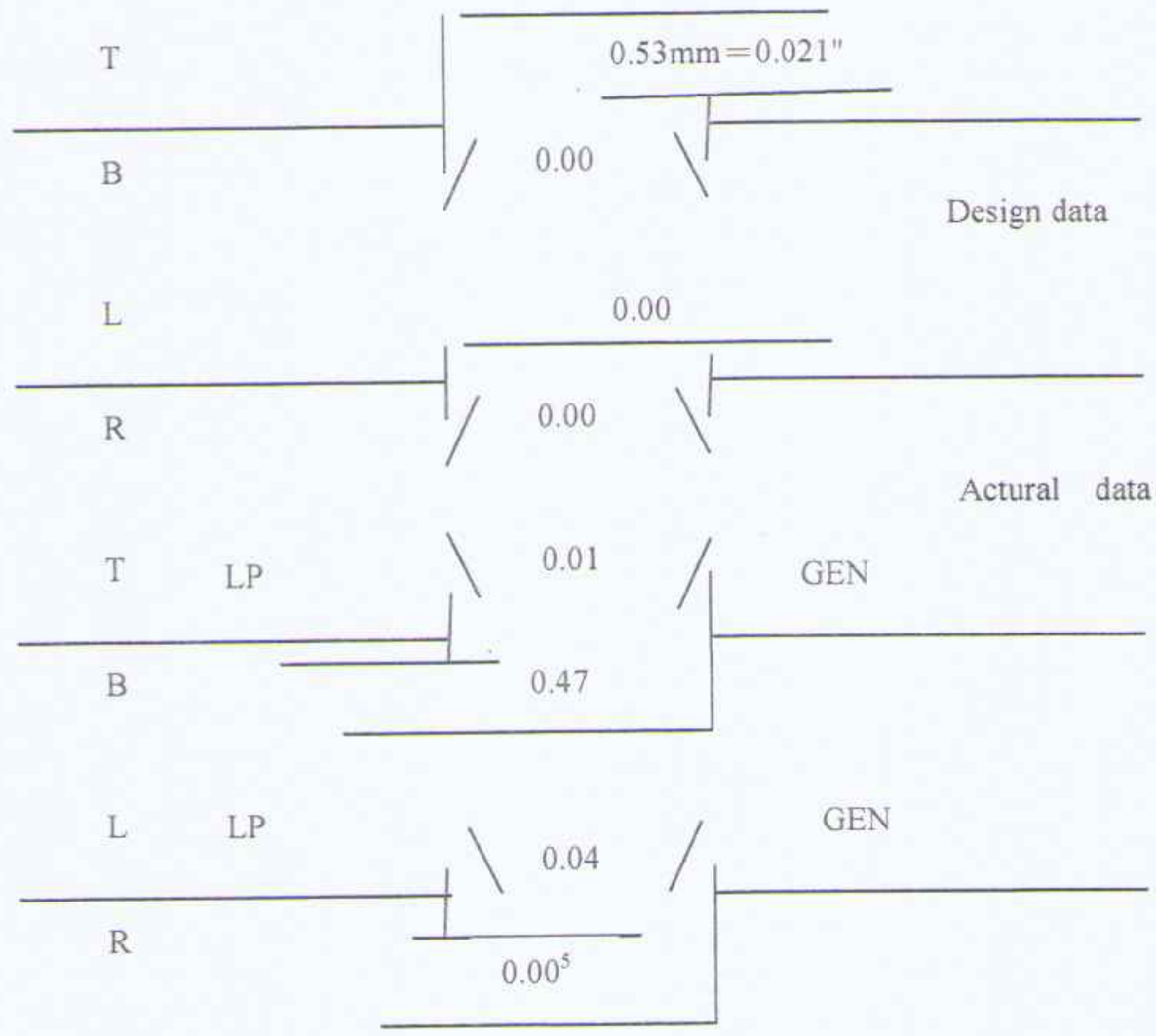
LP-GE Alignment

Cabras Plant： Unit 1 .As Left Date：2016.4.12



	T	L	B	R
0	**25.11**	**25.07**	**25.01**	**25.05**
90	**24.44**	**24.43**	**24.39**	**24.40**
180	**24.17**	**24.13**	**24.10**	**24.14**
270	**24.03**	**24.00**	**23.98**	**24.01**
Ave	**24.44**	**24.41**	**24.37**	**24.40**

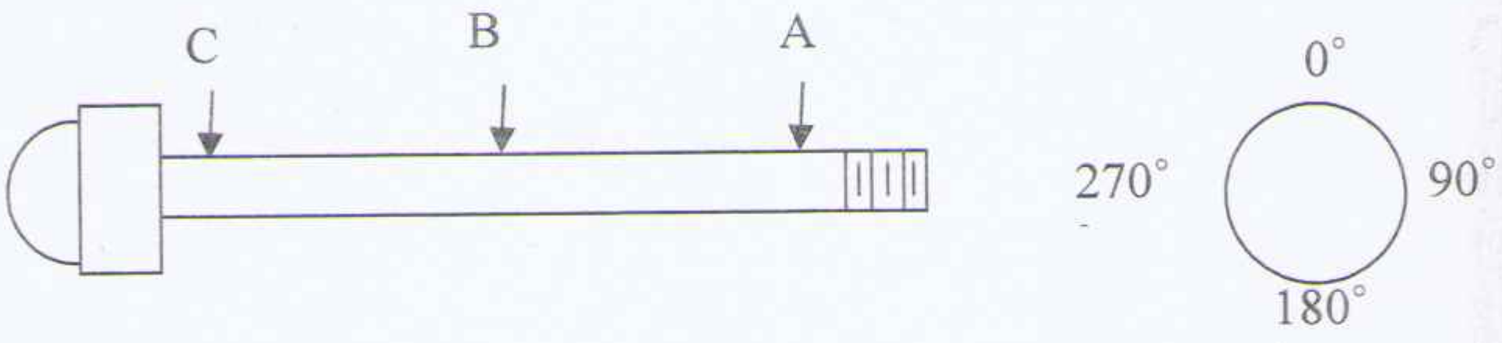




inspection		qualified		
		unqualified		
result	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

CV Stem Run Out Check

Cabras Plant： Unit 1.　.As left　Date：2016/3/03



VALVE NO.	A				B				C			
	0◦	90◦	180◦	270◦	0◦	90◦	180◦	270◦	0◦	90◦	180◦	270◦
1	0	0	0	-1	0	1	-15	-15	0	1	2	0
2	0	0	0	0	0	0	-7	-1	0	2	2	-1
3	0	-3	0	-3	0	1	-12	-3	0	0	0	-1
4	0	-5	2	-2	0	-11	-17	-5	0	0	1	0
5	0	2	-2	1	0	-5	-1	-5	0	0	0	0
6	0	0	-1	-2	0	1	1	0	0	0	0	1

unit：0.0mm

V/V NO	BUSHING ID	STEM OD	Clearance	DESIGN
1	38.15	37.90	0.25	0.20~0.254
2	38.17	37.88	0.29	0.20~0.254
3	38.11	37.88	0.23	0.20~0.254
4	38.31	37.91	0.40	0.20~0.254
5	38.13	37.91	0.22	0.20~0.254
6	38.28	37.92	0.36	0.20~0.254

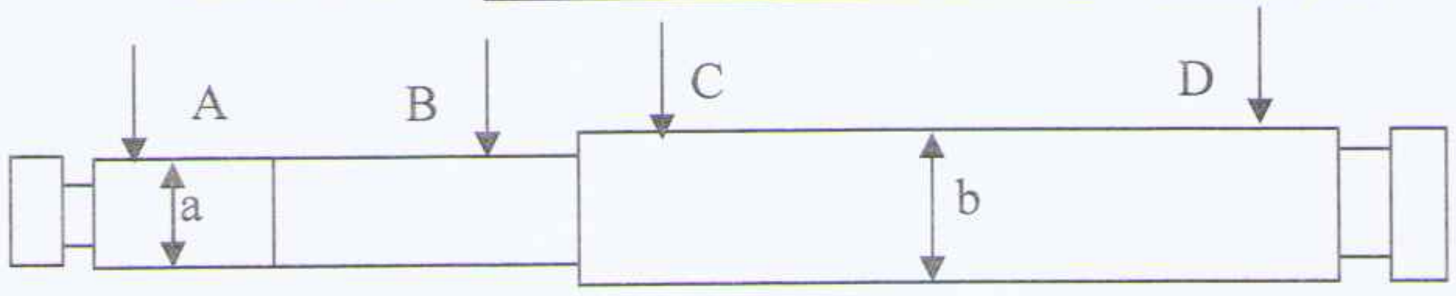
unit：0.01mm

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair	力修謝明正 3.3		力修鄒政浩 105. 3. 3
	new part replacement			
	trace			
	as it stands			

MSV Stem RUNOUT CHECK

Cabras Plant：Unit 1 . As Found Date：2016/3/03



unit：0.01㎜

	A	B	C	D
1	0	0	0	0
2	5	1	1	0
3	-4	-1	0	0
4	-9	-2	0	0

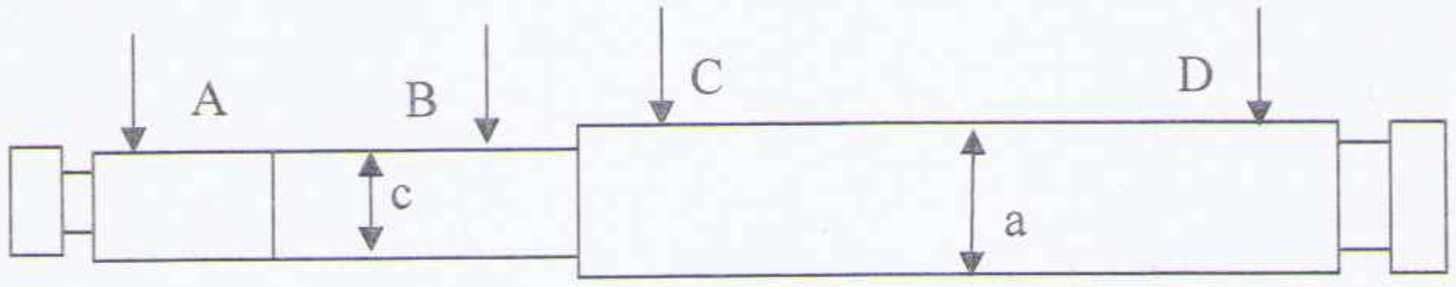
二、Stem & Bushing Clearance Check unit:0.01mm

	a	b
Stem	**60.06**	**75.85**
Bushing	**60.25**	**76.17**
Clearance	**0.19**	**0.32**

inspection		qualified		
		unqualified		
result	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	力修章 105.3.3 謝明正		力修章 105.3.3 鄒政浩
	new part replacement			
	trace			
	as it stands			

RSV Stem RUNOUT CHECK

Cabras Plant：Unit 1 . .As Left Date：2016/3/03



unit：1/100㎜

	A	B	C	D
1	0	0	0	0
2	1	0	0	0
3	0	-1	0	0
4	0	-1	0	0

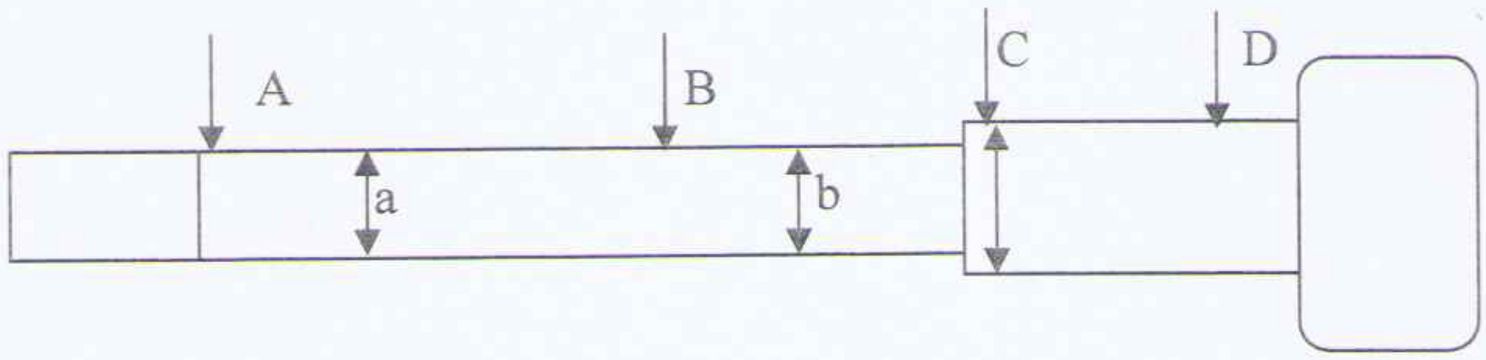
二、Stem & Bushing Clearance Check unit:mm

	a	c
Stem	**63.16**	**75.85**
Bushing	**63.55**	**76.14**
Clearance	**0.39**	**0.29**

inspection result		qualified			
		unqualified			
	✓	only for reference			
Option					
	redo		verify	customer	captain
	repair		105. 3. 3 謝明正		105. 3. 3 鄒政浩
	new part replacement				
	trace				
	as it stands				

IV Stem RUNOUT CHECK

Cabras Plant：Unit 1 . As Found Date：2016/3/03



unit：0.0mm

	A	B	C	D
1	NA	NA	NA	NA
2	NA	NA	NA	NA
3	NA	NA	NA	NA
4	NA	NA	NA	NA

二、Stem & Bushing Clearance Check **unit:0.01mm**

	a	b
Stem	59.89	59.85
Bushing	60.33	60.47
Clearance	0.44	0.62

inspection result		qualified			
		unqualified			
	✓	only for reference			
Option					
	redo		verify	customer	captain
	repair		105. 3. 3 謝明正		105. 3. 3 鄒政浩
	new part replacement				
	trace				
	as it stands				

MSV BOLT STRETCH

Cabras Plant： Unit 1. .. As Left　　Date：2016/3/14

NO	BOLT SIZE	FREE LENTH	STRETCH	FIRST STRETCH	AFTER STRETCH	FINAL STRETCH
1	$2^3/_4$"	$12^3/_4$"	0.33±10%	24.52	24.19	0.33
2	$2^3/_4$"	$12^3/_4$"	0.33±10%	3.61	3.29	0.32
3	$2^3/_4$"	$12^3/_4$"	0.33±10%	2.19	1.84	0.35
4	$2^3/_4$"	$12^3/_4$"	0.33±10%	4.76	4.43	0.33
5	$2^3/_4$"	$12^3/_4$"	0.33±10%	24.85	24.53	0.32
6	$2^3/_4$"	$12^3/_4$"	0.33±10%	5.20	4.87	0.33
7	$2^3/_4$"	$12^3/_4$"	0.33±10%	1.72	1.40	0.32
8	$2^3/_4$"	$12^3/_4$"	0.33±10%	4.50	4.19	0.31
9	$2^3/_4$"	$12^3/_4$"	0.33±10%	24.62	24.31	0.31
10	$2^3/_4$"	$12^3/_4$"	0.33±10%	4.61	4.28	0.33
11	$2^3/_4$"	$12^3/_4$"	0.33±10%	3.45	3.12	0.33
12	$2^3/_4$"	$12^3/_4$"	0.33±10%	2.01	1.69	0.32
13	$2^3/_4$"	$12^3/_4$"	0.33±10%	24.17	23.79	0.32
14	$2^3/_4$"	$12^3/_4$"	0.33±10%	3.40	3.09	0.31
15	$2^3/_4$"	$12^3/_4$"	0.33±10%	1.33	0.99	0.34
16	$2^3/_4$"	$12^3/_4$"	0.33±10%	4.06	3.74	0.32
17	$2^3/_4$"	$12^3/_4$"	0.33±10%	3.25	2.92	0.33
18	$2^3/_4$"	$12^3/_4$"	0.33±10%	4.46	4.14	0.32

inspection result				
		qualified		
		unqualified		
	✓	only for reference		

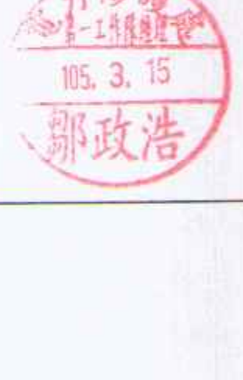
Option				
	redo	verify	customer	captain
	repair	105. 3. 14 謝明正		105. 3. 14 鄒政浩
	new part replacement			
	trace			
	as it stands			

RSV BOLT STRETCH

Cabras Plant： Unit 1. .. As Left　　Date：2016.03.15

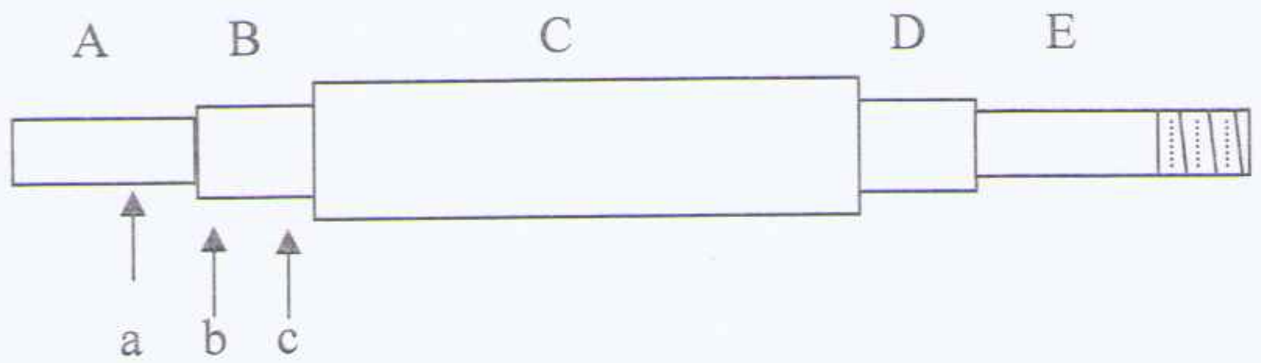
NO	BOLT SIZE	FREE LENTH	STRETCH	ANGLE	AFTER STRETCH	FINAL STRETCH
1	2"	3300	NA	NA	NA	3300
2	2"	3300	NA	NA	NA	3300
3	2"	3300	NA	NA	NA	3300
4	2"	3300	NA	NA	NA	3300
5	2"	3300	NA	NA	NA	3300
6	2"	3300	NA	NA	NA	3300
7	2"	3300	NA	NA	NA	3300
8	2"	3300	NA	NA	NA	3300
9	2"	3300	NA	NA	NA	3300
10	2"	3300	NA	NA	NA	3300
11	2"	3300	NA	NA	NA	3300
12	2"	3300	NA	NA	NA	3300
13	2"	3300	NA	NA	NA	3300
14	2"	3300	NA	NA	NA	3300
15	2"	3300	NA	NA	NA	3300
16	2"	3300	NA	NA	NA	3300
17	2"	3300	NA	NA	NA	3300
18	2"	3300	NA	NA	NA	3300
19	2"	3300	NA	NA	NA	3300
20	2"	3300	NA	NA	NA	3300

inspection result		qualified		
		unqualified		
	✓	only for reference		

Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

ACP-1(1A) STEM RUN OUT CHECK

Cabras Plant：Unit1　As Found&Left　Date：2016/03/08



Unit：1/10mm

c	A	B	C	D	E
1	0	0	0	0	0
2	-1	0	0	0	-4
3	0	0	0	-1	0
4	2	-2	0	2	0

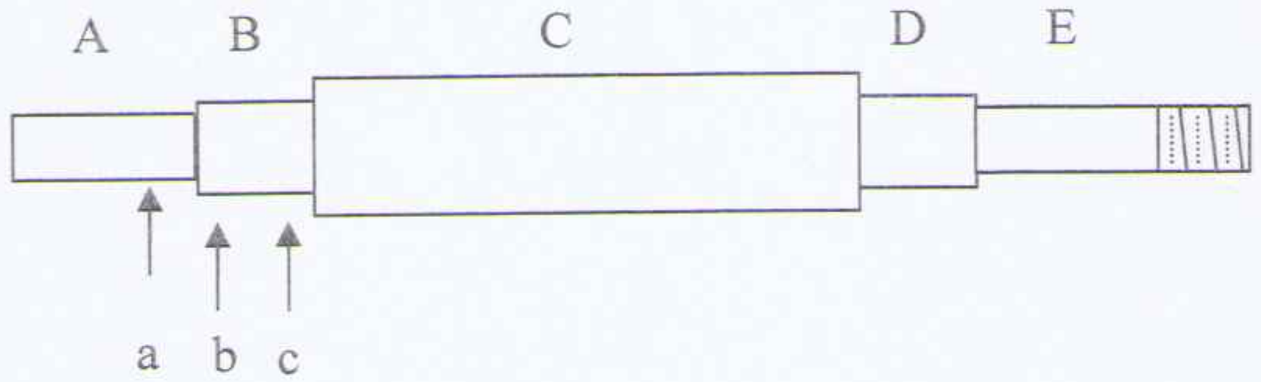
二、**Stem & Bushing Clearance**　　**Unit:mm**

	a	b	C
Outside Dia	44.49	79.16	72.84
Inside Dia	44.63	79.58	73.36
Clearance	0.14	0.42	0.52

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

ACP-2(2A) STEM RUN OUT CHECK

Cabras Plant： **Unit 1** **As Found&Left** **Date：2016/03/08**



Unit：1/10mm

	A	B	C	D	E
1	0	0	0	0	01
2	8	5	0	1	3
3	13	8	0	0	1
4	4	5	0	1	

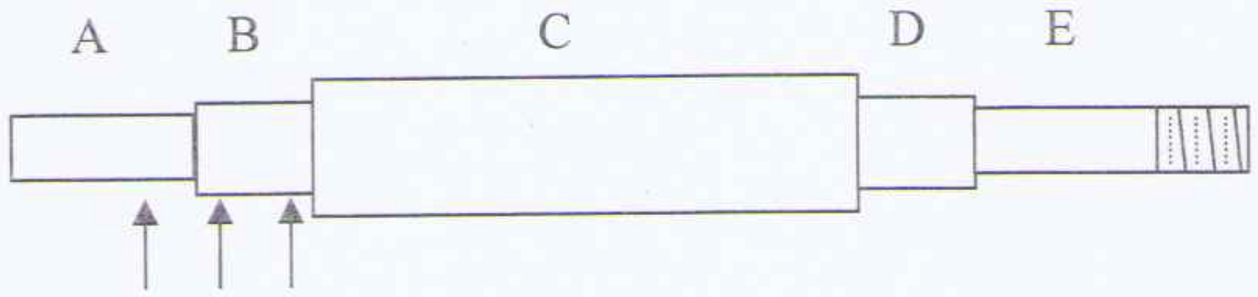
二、Stem & Bushing Clearance Unit:mm

	a	b	C
Outside Dia	44.46	79.03	72.85
Inside Dia	44.60	79.55	73.31
Clearance	0.14	0.52	0.54

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair	105. 3. 8 謝明正		105. 3. 8 鄒政浩
	new part replacement			
	trace			
	as it stands			

DCP-(EP) STEM RUN OUT CHECK

Cabras Plant： Unit 1　　As Found&Left　　Date：2016/03/08



Unit：1/10mm

	A	B	C	D	E
1	0	0	0	0	0
2	6	10	0	0	2
3	3	4	0	-3	2
4	-8	4	0	-2	0

二、Stem & Bushing Clearance　　Unit:mm

	a	b	C
Outside Dia	44.47	79.06	72.87
Inside Dia	44.61	79.56	73.34
Clearance	0.14	0.50	0.53

inspection result		qualified		
		unqualified		
	✓	only for reference		
Option				
	redo	verify	customer	captain
	repair			
	new part replacement			
	trace			
	as it stands			

Ⅳ：RECOMMENDATION

1：Renew the braring due to the bearing clearance is oversized

2：Replaced the spring of IV & CV