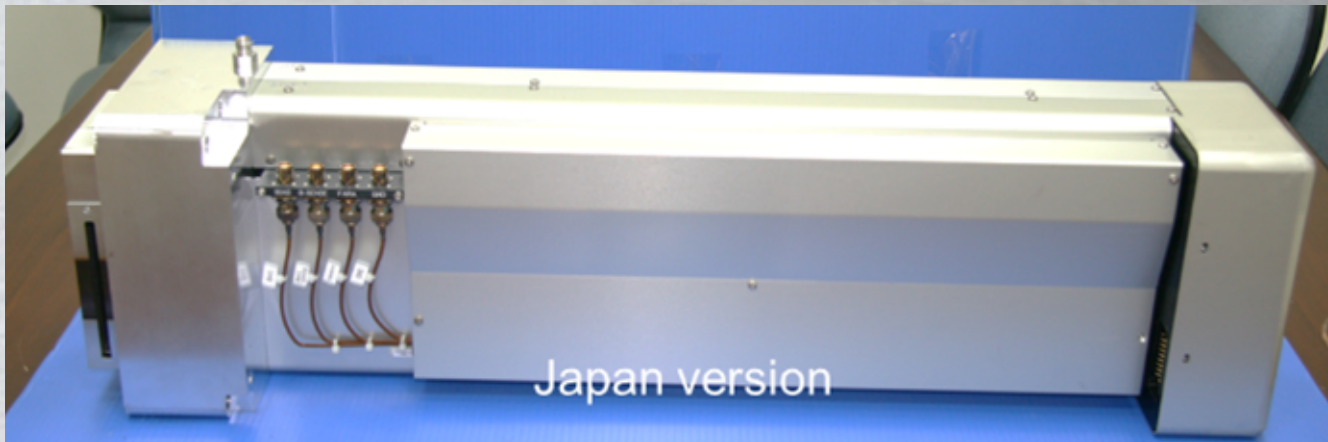




AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure





AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

➤ Basic Information



Factory P/N : E11052920 (USA) .
Function : Traveling faraday .
Port Size : N/A .
Port 方向 : N/A .
Driver : Faraday control of EHP500 .
Driver界面 : NA .
Key parts : Seal, Faraday motor, ball/lead screw .
Bellow type : NA .
Seal type : LIPS seal .
Application : EHP500 (Varian/AMAT) .
客户料號 : 30045179 .

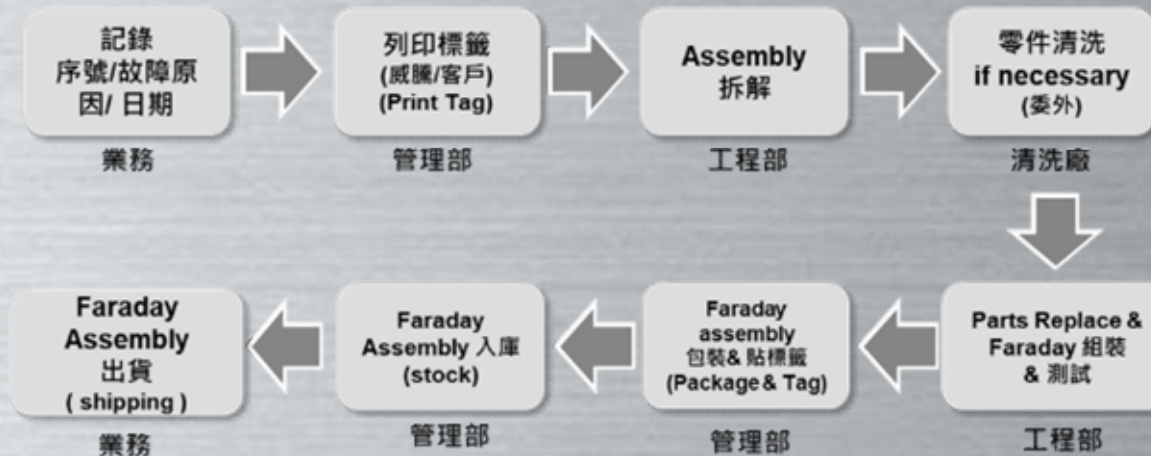


Factory P/N : E11036180 (Japan) .
Function : Traveling faraday .
Port Size : N/A .
Port 方向 : N/A .
Driver : Faraday control of EHP500 .
Driver界面 : NA .
Key parts : Seal, Faraday motor, ball/lead screw .
Bellow type : NA .
Seal type : LIPS seal .
Application : EHP500 (Varian/AMAT) .

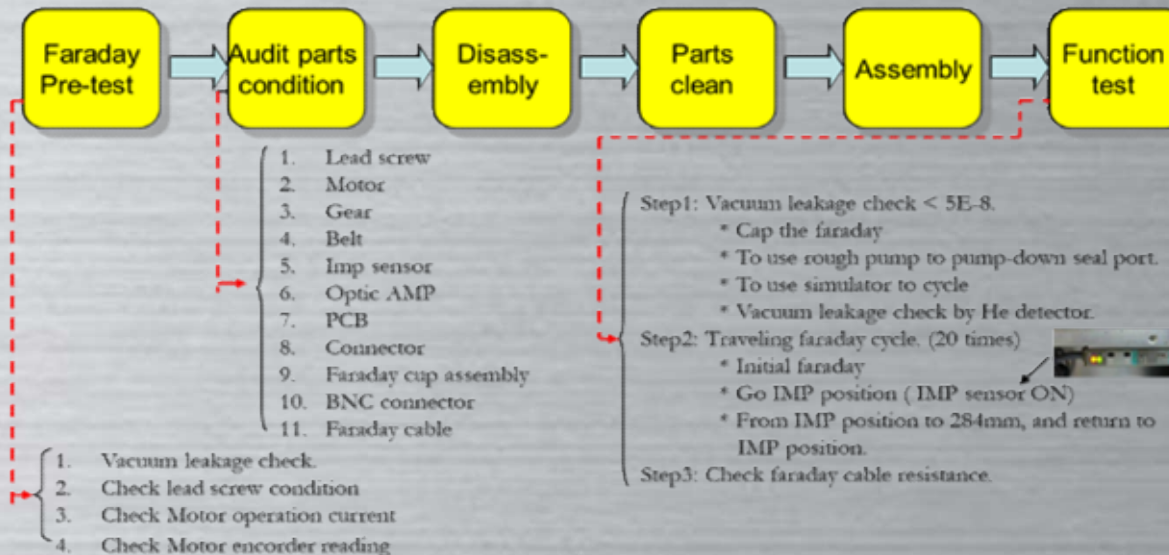


AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

➤ Overhaul process flow



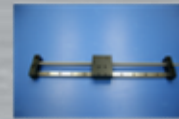
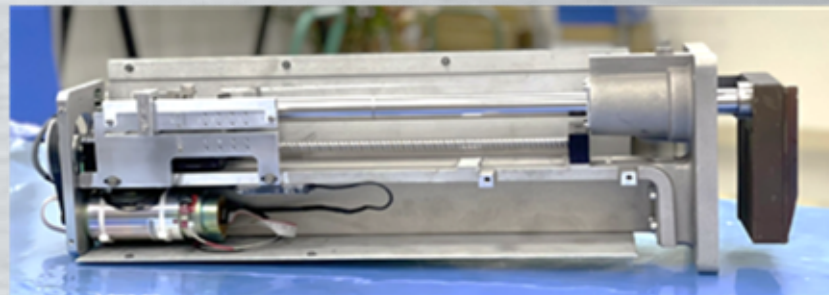
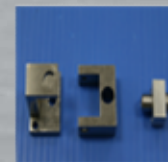
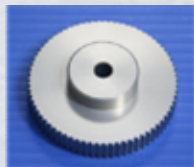
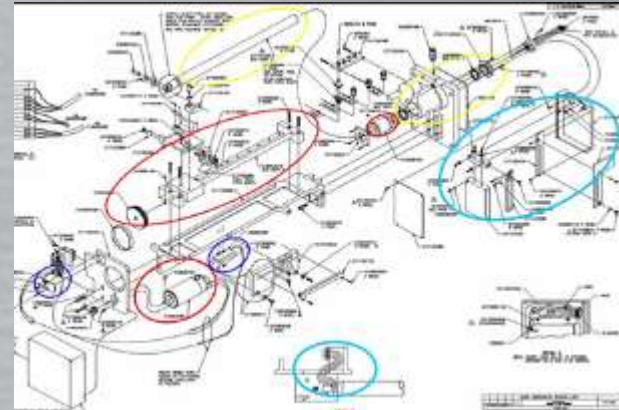
Faraday overhaul sequence:





AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

1. Faraday assemble 分解



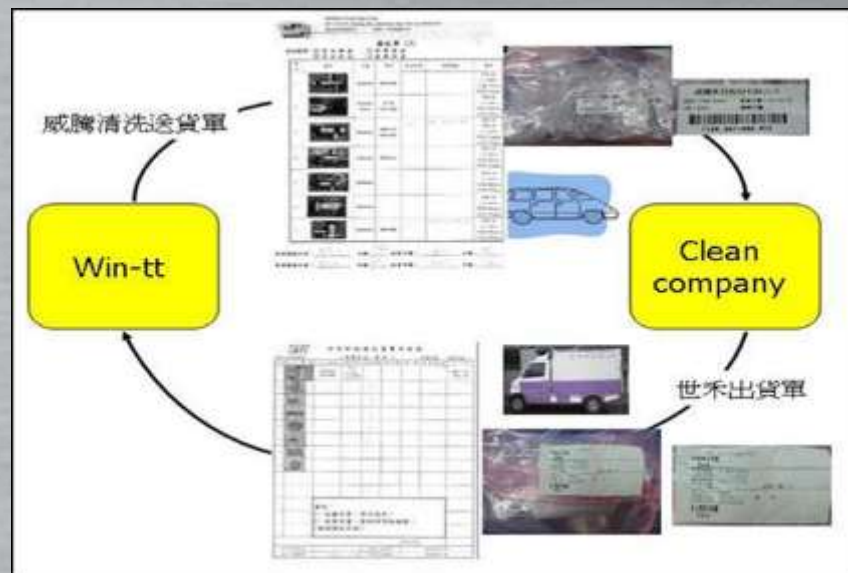


AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

2. Parts clean by outsourcing



送洗物件



送洗流程



AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

3. Parts Replacement

3.1. Vacuum system:

- Vacuum seal ---- **Replace**
- O-ring ---- **Replace**
- Main shaft ---- Condition (是否刮傷) (客戶提供)



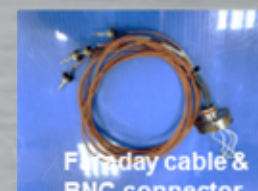
3.2. Transfer system:

- Ball/ Lead screw assembly ---- Condition. (是否有異音, 動作是否順暢, 模擬器是否可以定位)
- Faraday motor ---- Condition. (模擬器是否可以定位, faraday cycle motor 電流 < 0.4A)
- Home sensor PCB ---- Condition. (Faraday assembly 是否可以做Home)
- Implant Position sensor AMP ---- Condition. (Faraday assembly 是否可以找到 Implant Position)
- Optic cable ---- Condition (cable 是否折到破損)



3.3. Dose Detection:

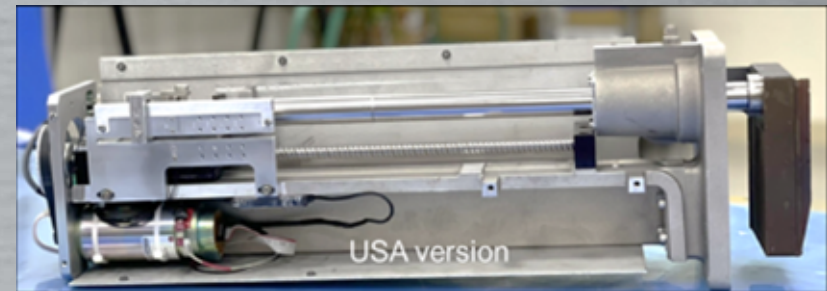
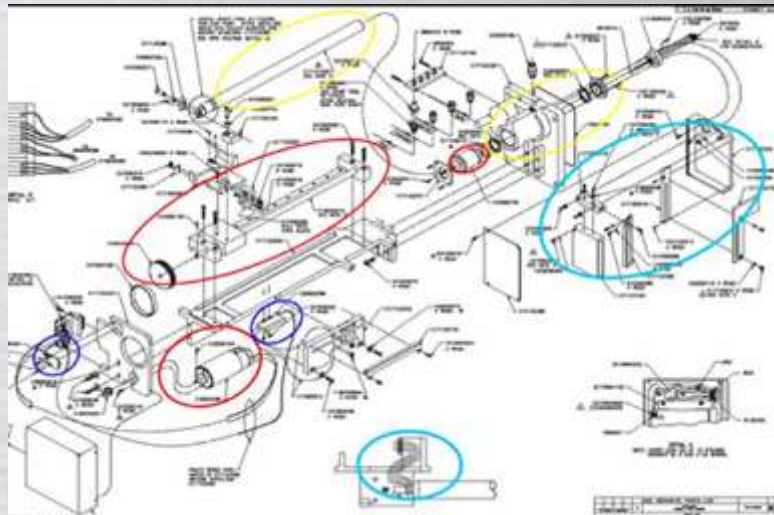
- Faraday cup graphite ---- Condition. (是否有斷裂破損)
- Faraday cup insulator ---- Condition. (是否有斷裂破損)
- Faraday cable & BNC connector ---- Condition. (是否有斷線)
- Faraday feedthrough ---- Condition. (是否有斷線) (客戶提供)





AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

4. Faraday assemble 組裝





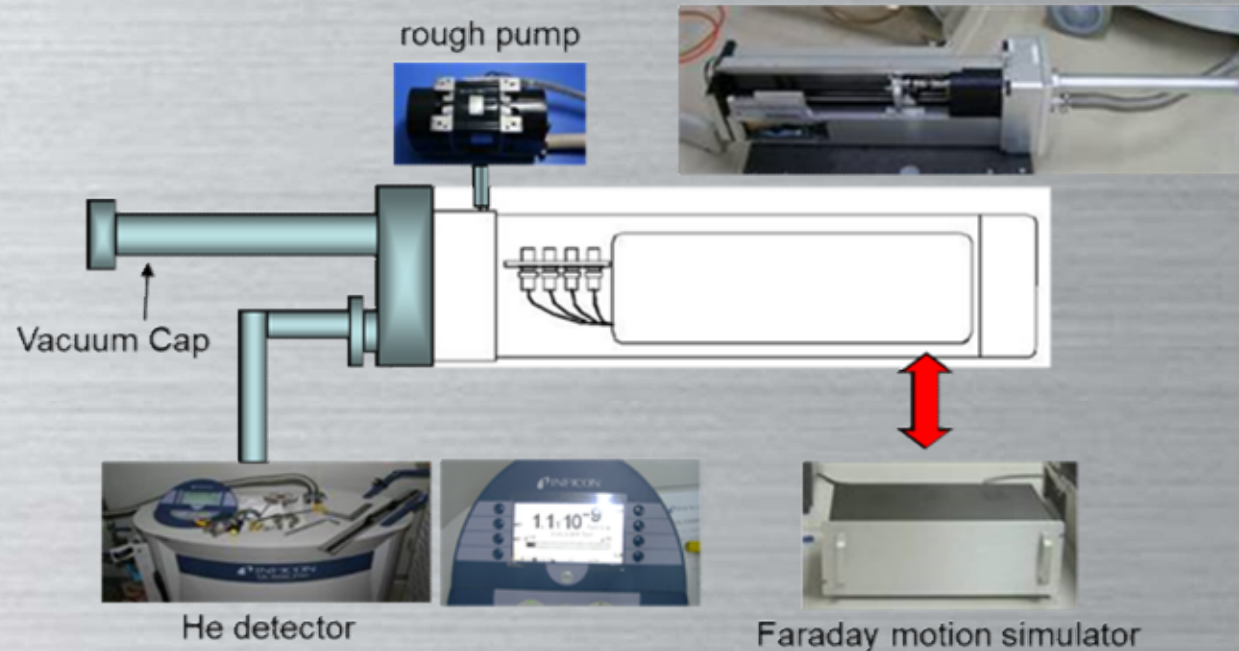
AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

5. Faraday final test:

➤ Vacuum test :

* Vacuum leakage check < 5E-8

- * Cap the faraday
- * To use rough pump to pump-down seal port.
- * To use simulator to cycle
- * Vacuum leakage check by He detector.



AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

➤ Traveling faraday cycle test



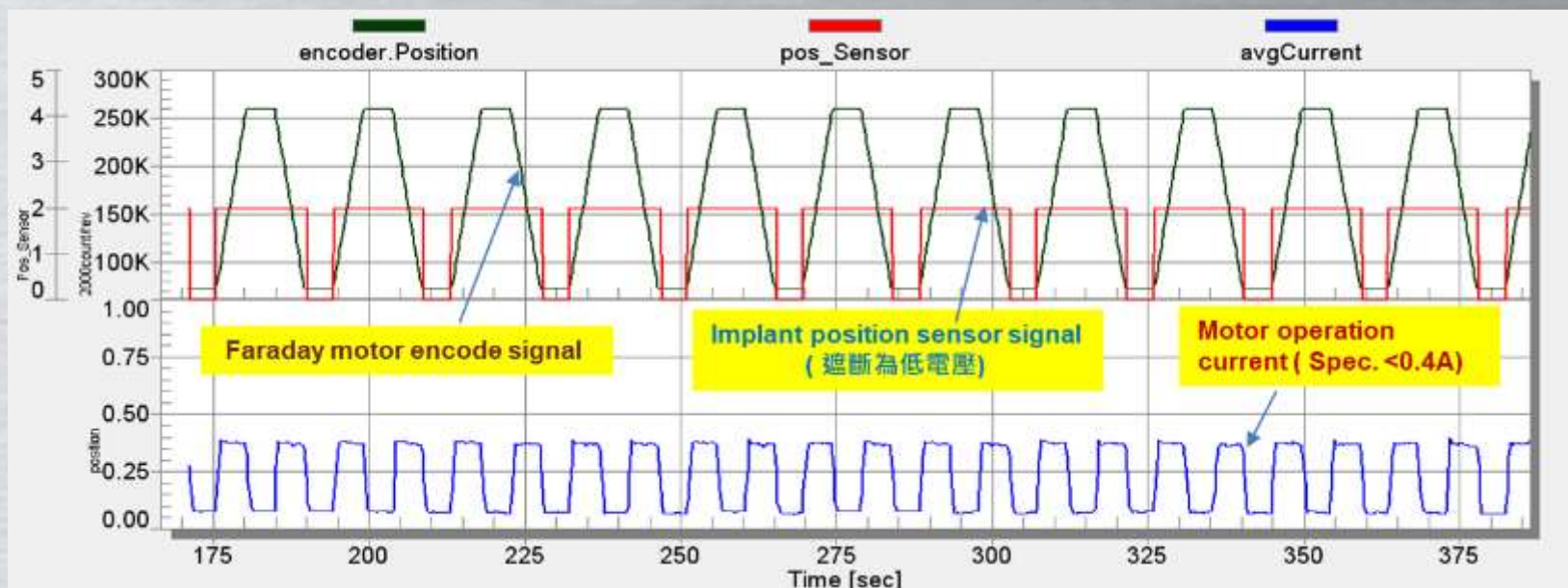
Step 1. Initial faraday

Step 2. Go IMP position (IMP sensor ON)



Step 3. From IMP position extend to 284mm, and return to IMP position.

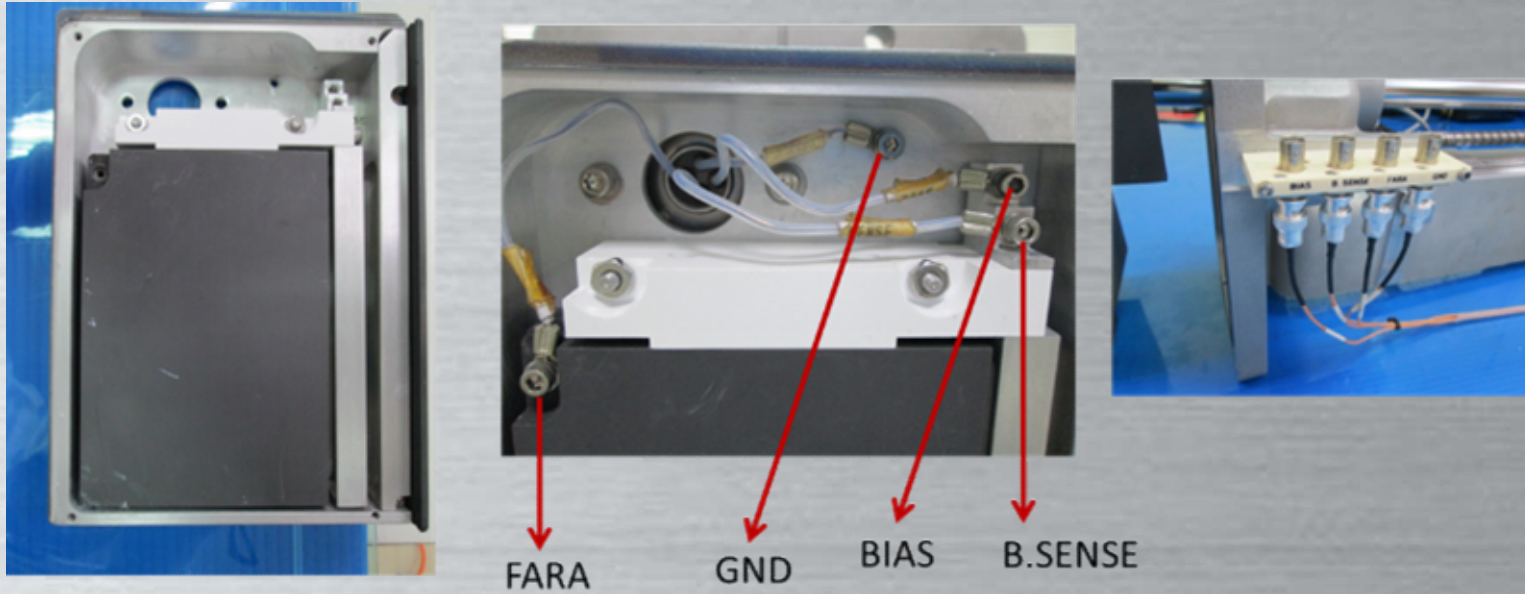
Step 4. Repeat Step3.





AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

- Faraday cup insulator function check by 高阻計. (Dose Detection performance)



	FARA	GND	BIAS	B.SENSE
FARA	Short	Open	Open	Open
GND	Open	Short	Open	Open
BIAS	Open	Open	Short	Short
B.SENSE	Open	Open	Short	Short



AMAT EHPI500 Traveling Faraday (USA & Japan) Assembly Overhaul Procedure

6. E-Check list

電子檢點表(查詢)
單據內容

產品編號: TVL-001 申請者: 廖政穎 申請日期: 2021-09-09

版別: 1 版次: 6

數據								
項次	(QC分類)	單位	Data Name	分析資料	上限	下限	內容	Remark
6	Resistance test	MΩ	NONE	N	10		1 Faraday to bias cable resistance	NA
7	Resistance test	MΩ	NONE	N	10		1 Faraday to GND cable resistance	NA
8	Resistance test	MΩ	NONE	N	10		1 Bias to GND cable resistance	NA
9	Resistance test	Ω	NONE	N	1		0.1 Bias-sense to Bias cable resistance	NA
10	Resistance test	Ω	NONE	N	1		0.1 Faraday BNC connector to Faraday cup graphite resistance	NA
11	Current test	Amp	A-MOTI	Y	0.5		0.1 Motor operation current during faraday initial period, the motor voltage VDC 3V	N/A
12	Current test	Amp	A-MOTM	Y	0.5		0.1 Motor operation current during faraday scan period, the motor voltage VDC 24V	NA
14	Vacuum test	1.0e ⁻⁶ Torr-L/S	P-LEAF	Y	100		1 Vacuum leakage check for first seal within scan	NA
15	Vacuum test	1.0e ⁻⁶ Torr-L/S	P-LEAS	Y	100		1 Vacuum leakage check first & second seal within scan	NA

Check		
項次	分類	內容
1	Parts replacement	主軸與 Carriage 之間所有螺絲需重新更新
2	Torque test	真空面螺絲鎖緊為10kgf-cm
3	others	大氣面的螺絲鎖緊上"螺絲膠"
4	Torque request	大氣面: 7/64 inch 螺絲鎖緊為10Kgf-cm, 5/32 inch 螺絲鎖緊為106Kgf-cm (10 N-m)
5	Function test	Faraday initial and encoder reset
13	Cycle test	Faraday assembly cycle test , from "IMP position" extend 284 mm, 20 times , the optic sensor need trigger " low voltage"

Chart	
項次	內容
1	The faraday cycle test 20 times, from "IMP position" extend 284 mm, 20 times , the optic sensor need trigger " low voltage" and motor current need under 0.4A.

PartsApply						
Basic Parts Replacement						
PM KIT	料號	品名	規格	備註/備註	數量	
E00000964	E00000101	Vacuum seal	13313022530C/240-321-AD904	OMNISEAL Varian P/N: E15000507	2	
E00000967	E00000071	Faraday motor (閉線/白)	14205E433 (14205D657-R6) 30.0VDC	PITTMAN motor Varian P/N: E19004561	1	
E00001020	E00000035	Gear, motor traveling faraday	Gear, motor traveling faraday	Varian P/N: E19004550	1	
E00001021	E00000221	齒形皮帶(Motor belt)	2B5-3M-9MM (95 GRV 9mm W)	Varian P/N: E41000129	1	
E00001022	E00000952	Ball screw overhaul	EHP-500	更換Bearing/不含螺絲更換	1	
E00001027	E00001002	馬達主軸KEY加工	NA	Motor main shaft key installation	1	