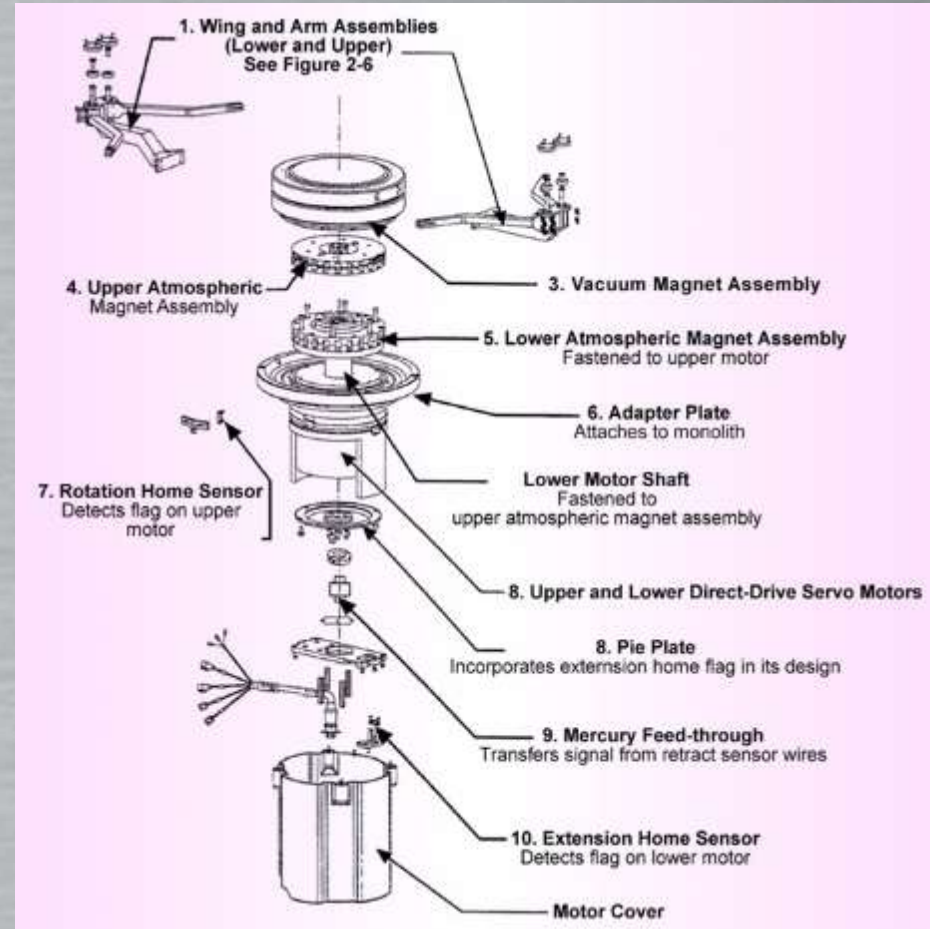




AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

AMAT VHP Robot Motor within E-Hub Assembly



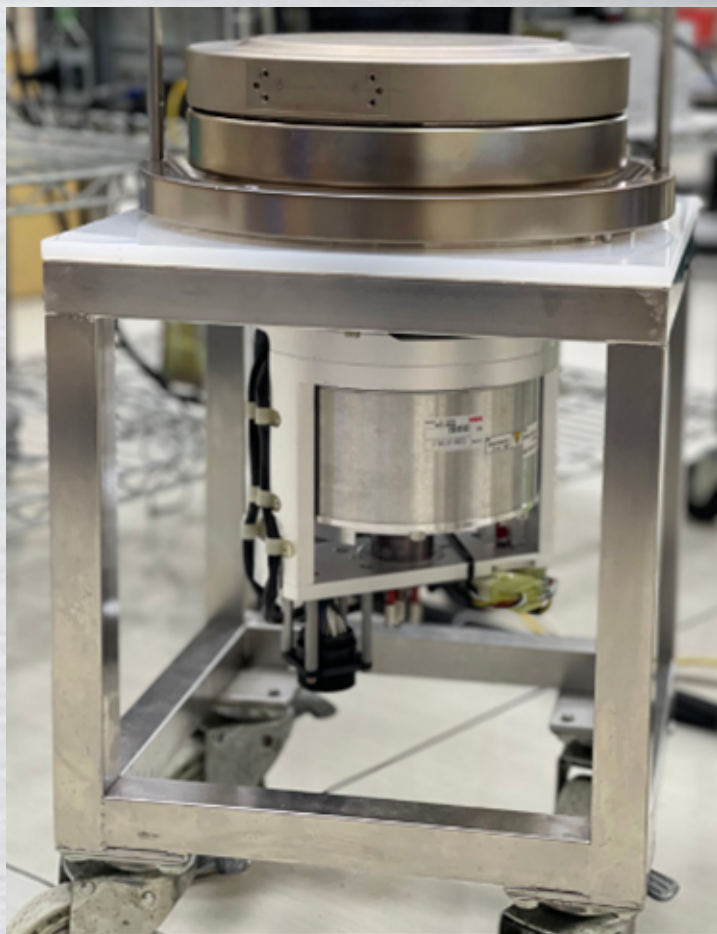
Schematic



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

➤ Basic Information

Picture



AMAT P/N : 0040-46995 & 0240-81108 .

Function : VHP Robot Motor & E-Hub Assembly.

Port Size : NA .

Port 方向 : NA .

Driver : NSK ELA B014CG1-04 .

Driver界面 : RS232 .

Key parts : Sensor / Bearing / Motor .

Bellow type : NA .

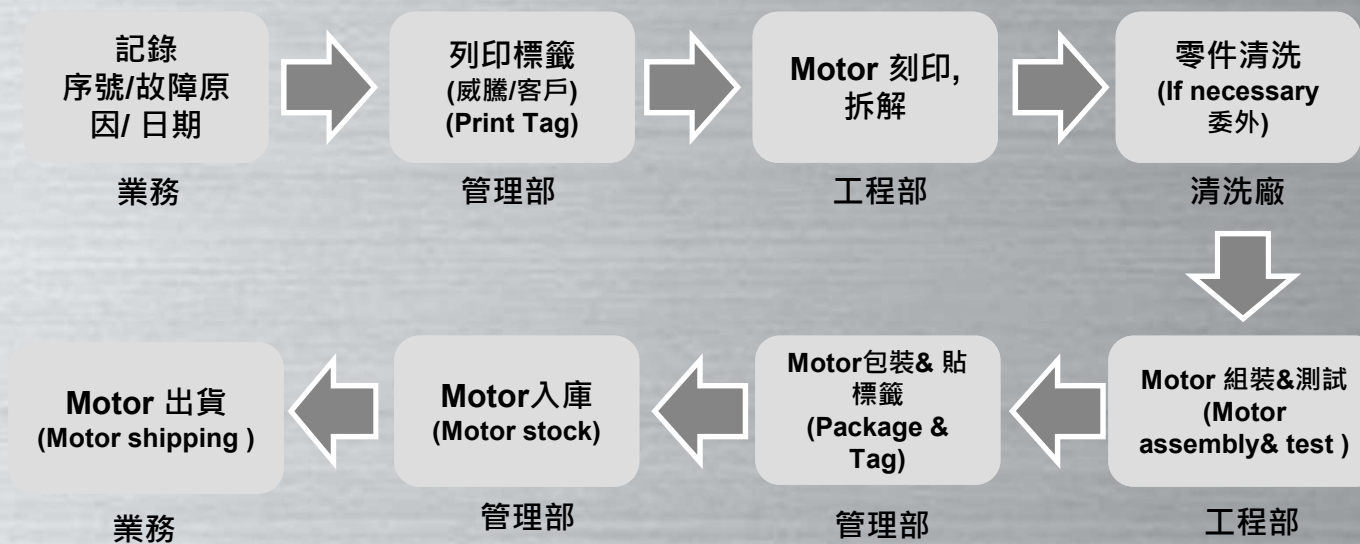
Seal type : NA .

Application : HDP / E-MAX .



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

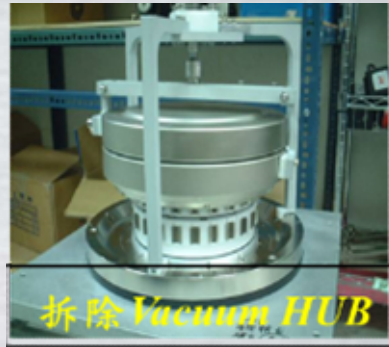
➤ Overhaul process flow



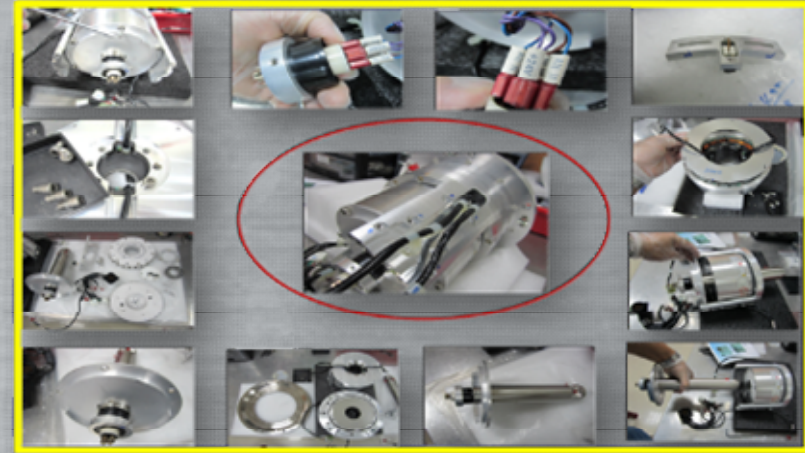


AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

1. Laser mark & VHP motor & Hub disassembly



0040-46995



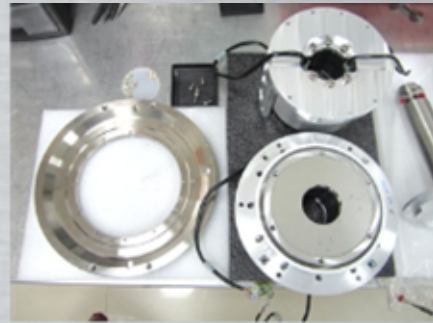
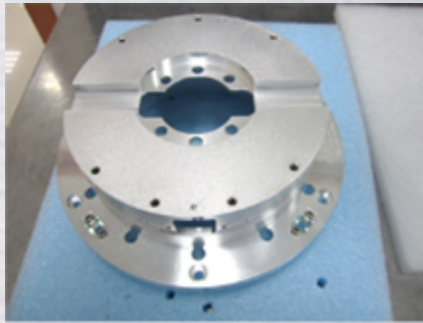
0240-81108



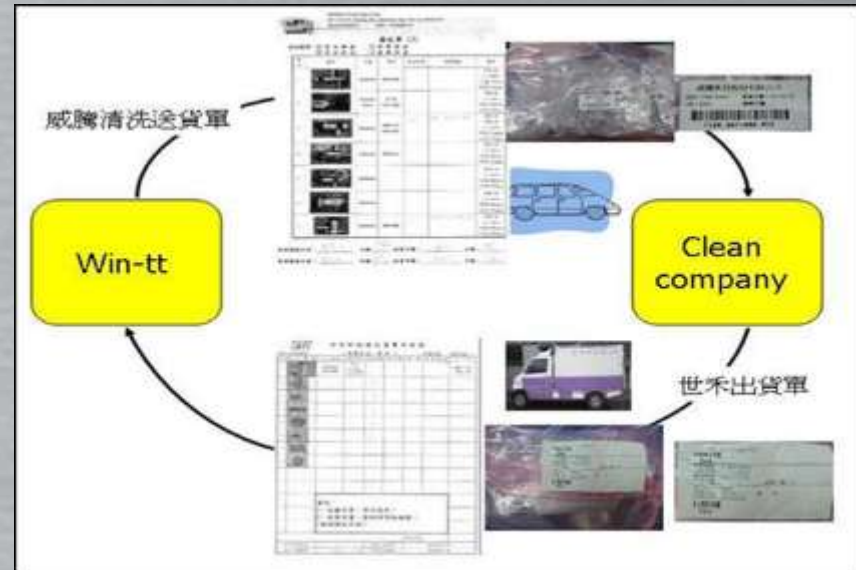


AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

2. Parts clean by outsourcing



送洗物件 (if necessary)



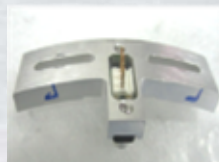
送洗流程



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

3. Parts Replacement

VHP Motor Assembly 0040-46995



Flag sensor



水銀 sensor



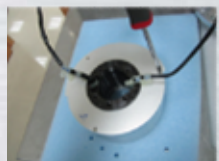
Motor bearing *2



Motor 線圈 *2



bearing *1



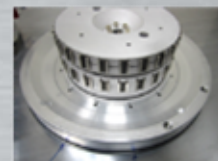
Motor assembly *2



Up/Down Motor connector *2



VHP Motor connector *1



VHP Motor磁極 *2

1. Flag Sensor * 4 (Replace)
2. 水銀 sensor *1 (Replace)
3. Motor *2 (Overhaul)
4. Bearing *3 (Replace)
5. Connector *3 (Replace if necessary)
6. 磁極 Assembly*2 (Replace if necessary)

E-Hub Assembly 0240-81108



磁極



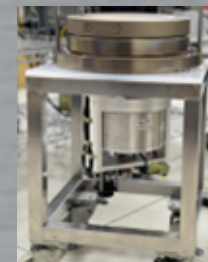
Bearing

1. O-ring: Viton AS266 *1 (Replace)
2. Bearing *2 (Replace)
3. 磁極 assembly *2 (Replace if necessary)



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

4. VHP motor & E-Hub Assembly





AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

5. VHP Robot Motor & E-Hub Assembly C.O.A

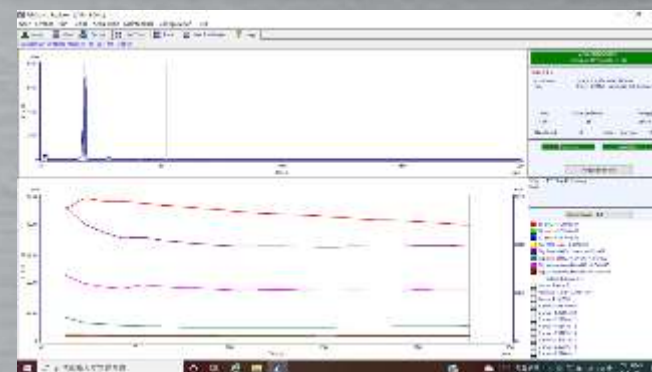
5.1 VHP motor assembly leak- check by He detector.

(< 5.0E-8 torr/sec)



5.1 E-Hub bearing RGA analysis.

(Mass 1~200, < 5.0E-6 torr/sec)



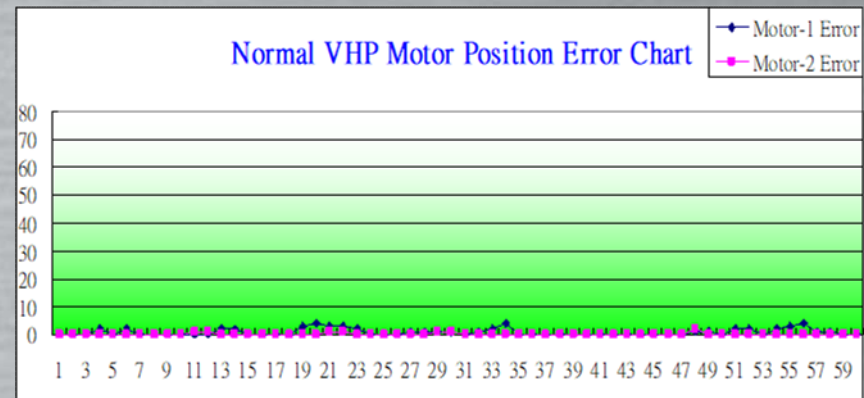


AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

6. VHP motor within E-Hub final test:

- To use simulator to check VHP motor performance

Step 1: Robot cycle test:



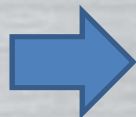
Robot cycle 1000 times and motor #1 & #2 error count under < 10 step



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

Step 2: Home position reliability test:

Schematic



Spec. X & Y shift axis within $\pm 0.1\text{mm}$ & STD within $3\sigma_x$



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

6. E-Check list

表 1							表 4	
表 1							表 4	
序	名称	单位	Data Name	报警	上限	下限	内容	Remark
10	Contact test	mm	M-HIGH	V	81.50	81.50	Magnet for 4039tr 高度尺寸	NA
11	Motion cycle	Step	E-COIN	V	30	30	-1VHP robot encoder error count after cycle 1000 times	018 018 encoder error
12	Motor performance test	Others	U-STDE	V	0.0	0.0	0Up motor STDEV	NA
13	Motor performance test	Others	D-STDE	V	0.0	0.0	0Low motor STDEV	NA
14	Voltage test	Voltage	V-RE10	V	0.0	0.0	0 0Retract-1 ON	NA
15	Voltage test	Voltage	V-RE20	V	0.0	0.0	0 0Retract-2 ON	NA
16	Voltage test	Voltage	V-RE1F	V	24	24	21 Retract-1 OFF	NA
17	Voltage test	Voltage	V-RE2F	V	24	24	21 Retract-2 OFF	NA
18	Voltage test	Voltage	V-UPON	V	0.0	0.0	0 0UP motor Home sensor ON	NA
19	Voltage test	Voltage	V-UPOF	V	24	24	21 0UP motor Home sensor OFF	NA
20	Voltage test	Voltage	V-DCON	V	0.0	0.0	0 0Low motor Home sensor ON	NA
21	Voltage test	Voltage	V-DCOF	V	24	24	21 0Low motor Home sensor OFF	NA
22	Resistance test	Ω	R-URRG	V	3.6	3.6	3 0UP motor Resolver 磁极短路	NA
23	Resistance test	Ω	R-URGL	V	3.6	3.6	3 0UP motor Resolver 磁极短路	NA
24	Resistance test	Ω	R-URGW	V	3.6	3.6	3 0UP motor Resolver 磁极短路	NA
25	Resistance test	Ω	R-URGB	V	3.6	3.6	3 0UP motor Resolver 磁极短路	NA
26	Resistance test	Ω	R-URGY	V	3.4	3.4	3 0UP motor Resolver 磁极短路	NA
27	Resistance test	Ω	R-URMB	V	3.4	3.4	3 0UP motor Resolver 磁极短路	NA
28	Resistance test	Ω	R-URMW	V	3.4	3.4	3 0UP motor Resolver 磁极短路	NA
29	Resistance test	Ω	R-URGB	V	3.6	3.6	3 0Low motor Resolver 磁极短路	NA
30	Resistance test	Ω	R-LRGW	V	3.6	3.6	3 0Low motor Resolver 磁极短路	NA
31	Resistance test	Ω	R-LRGE	V	3.6	3.6	3 0Low motor Resolver 磁极短路	NA
32	Resistance test	Ω	R-LRMW	V	3.4	3.4	3 0Low motor Resolver 磁极短路	NA
33	Resistance test	Ω	R-LRMB	V	3.4	3.4	3 0Low motor Resolver 磁极短路	NA
34	Resistance test	Ω	R-LRWB	V	3.4	3.4	3 0Low motor Resolver 磁极短路	NA
35	Voltage test	V	V-RETF	V	22	22	1 0Retract sensor voltage test	008 008 retract sensor voltage
36	Voltage test	V	V-RETF	V	22	22	1 0Retract sensor voltage test	008 008 retract sensor voltage
37	Voltage test	V	V-ROTA	V	22	22	1 0Rotation sensor voltage test	009 009 rotation sensor voltage
表 4							表 4	
序号	名称	单位	报警	上限	下限	内容	Remark	
1	Condition check					Pre-test for all of robot performance		
2	Condition check					Clean & check main body		
3	Condition check					Replace consumable parts		
4	Condition check					Bearing function		
5	Function test					All of sensor function check		
6	Function test					All of Magnet function check		
7	Condition check					All of resolver zero/door check		
8	Function test					All of Adapter function check		
9	Function test					Motor function check		
10	Motion cycle					Motor cycle 1000 times		
11	Cycle test					Motor cycle test repeatability, offset within 0.01 mm. Test > 1000 times		
12	Function test					Robot home 10 times without any alarm		
13	Function test					Up/down motor cycle encode error count < +/- 30 step / cycle 5 times		
14	Cycle test					cycle transfer test over 24 hours		
表 4							表 4	
序号	名称	单位	报警	上限	下限	内容	Remark	
1	Pre-test robot cycle test 100 times							
2	After overhaul action, robot cycle 1000 times, the encode error 0-10 step							
3	Robot zero position shift check. Spec. X & Y shift axis within +/- 0.1mm & ZD within 3.0							
表 4							表 4	
序号	名称	单位	报警	上限	下限	内容	Remark	
1	Condition check					Check all the major components		
2	Condition check					Check & assemble all the IC chip		
3	Condition check					Check & assemble all the IC chip		
4	Condition check					Check & assemble all the IC chip		
5	Condition check					Check & assemble all the IC chip		
6	Condition check					Check & assemble all the IC chip		
7	Condition check					Check & assemble all the IC chip		
8	Condition check					Check & assemble all the IC chip		
9	Condition check					Check & assemble all the IC chip		
10	Condition check					Check & assemble all the IC chip		
表 4							表 4	
序号	名称	单位	报警	上限	下限	内容	Remark	
1	After overhaul action, robot cycle 1000 times, the encode error 0-10 step							



AMAT VHP Robot Motor within E-Hub Assembly (Vacuum Magnet Assembly) Overhaul Procedure

Part/Qty					
Basic Parts Replacement					
P/N KEY	料號	品名	規格	備註/備註	數量
E00001140	E00000007	Retract sensor 退縮感測器	Mercotec 630 6 conductor 250V	退縮感測器 Mercotec Rotating Connector	1
E00001142	E00000047	Bearing	NAACH 6008 2R	退縮感測器/Magnet 軸心用	1
E00001139	E00000057	Motor (Refurbish)	SS8014FN517	AC 伺服 NSK SS8014FN517 OD Motor	2
E00001141	E00000003	Bearing	NSK NIXT 8013 DDC8PS	NSK SS8014FN517 Motor Bearing (藍色漆)	2
E00001434	E00000001	Photo Sensor 光感測器	PI181	PI 39% MTA-100 Header 光感測器(藍色漆)	4
Optional parts replacement					
料號	品名	規格	備註/備註	數量	
E00000001	Photo Sensor 光感測器	PI181	PI 39% MTA-100 Header 光感測器(藍色漆)	4	
E00000002	Retract sensor 退縮感測器	Mercotec 630 6 conductor 250V	退縮感測器 Mercotec Rotating Connector	1	
E00000003	Bearing	NSK NIXT 8013 DDC8PS	NSK SS8014FN517 Motor Bearing (藍色漆)	1	
E00000047	Bearing	NAACH 6008 2R	退縮感測器/Magnet 軸心用	1	
E00000057	Motor (Refurbish)	SS8014FN517	AC 伺服 NSK SS8014FN517 OD Motor	2	
E00000091	VHP Direct Drive Robot Adapter (雷塞)	1134188*16 20mm(DD20-21172)	雷塞 AL	1	
E00000092	Magnet 磁力磁鐵	32*20*21 mm	VHP 雷塞雷塞磁鐵 各 H 彈簧磁鐵	1	
E00000672	螺絲	有線內六角 / M4 * 16L 藍色	Resolver 螺絲	1	
E00000673	螺絲	有線內六角 / M4 * 16L 白色	Resolver 螺絲	1	
E00000675	螺絲	有線內六角 / M8 * 12L 白色	氣壓螺絲	1	
E00000676	螺絲	有線內六角 / M8 * 12L 白色	軸心螺絲	1	
E00000677	螺絲	平線十字 / M3 * 25 白色	Motor cover 螺絲	1	
E00000678	螺絲	平線細十字 / #6M3 * 6L	Motor cover 螺絲	1	
E00000679	螺絲	有線內六角 / 8*8 * 32 * 25L 藍色	12" 雷塞內 Hub 固定螺絲(黑)	1	
E00000680	螺絲	有線內六角 / M4 * 5L 白色	Magnet Assembly 螺絲	1	
E00000754	Flap	直徑 16.3mm * 厚 1.2mm	motor flap	1	
E00000755	圓規	直徑 14.6mm * 厚 1.15mm	motor 圓規	1	
E00000764	螺絲	有線內六角 / M4 * 12L 白色	HA	1	
E00001126	開口	44*44*11 mm 磁鐵	power connector 開口	1	
E00001221	AMP 電子 CPC 磁鐵(D01-24AWG)	86331-7	磁鐵 86331-7 / F011000066	1	
E00001222	AMP 電子 CPC 磁鐵(D01-24AWG)	86332-7	磁鐵 86332-7 / F011000065	1	
E00001223	VHP Motor	365K 558014FN517	VHP-PI/PI Motor (new motor 編號)	1	
E00001252	磁力磁石(Magnet)磁石磁鐵	34A241F13mm*15mm*8mm 圓錐 磁石 重 1.95g	圓錐 軸線磁鐵 光感測器 8mm	1	
E00001326	十字螺絲/ Motor 磁鐵螺絲	十字螺絲 #6 320 * 4.10 L	Cable 螺絲 雷塞磁鐵	1	
E00001327	十字螺絲/motor bearing cover 螺絲	十字螺絲 M2 * 4.5 L	十字螺絲 Motor bearing cover 螺絲	1	
E00001328	有線內六角螺絲	M3 * 30 L mm (原長 37.5 L mm)	Resolver Magnet 固定螺絲	1	
E00001329	有線內六角螺絲	M3 * 10 L mm (原長 10 L mm)	Resolver Magnet 固定螺絲	1	
E00001330	有線內六角螺絲	M 3 * 8 L	Resolver Magnet 固定螺絲	1	
E00001331	內六角螺絲(螺絲 灰色)	10 號 24.0 * 32.4 L	PI/PI 灰色螺絲	1	
E00001334	內六角螺絲	4# 400 * 9.4 L	serup 固定螺絲	1	
E00001335	內六角螺絲	3# 320 * 9.4 L	Retract sensor 固定螺絲	1	
E00001336	內六角螺絲	3# 320 * 9.3 L	connector 角位螺絲	1	
E00001337	螺絲	10 號 螺絲/內六角螺絲 320 * 4.7 L	2" 磁鐵雷塞固定螺絲	1	
E00001348	Retract Sensor Cable	XGA TR-64 1113407 P1 30°C 24AWG 3P REACH 長 40cm	12" > 磁鐵 / 磁鐵 / 磁	1	
E00001407	Clamp 螺絲加工	螺絲加工	PIA	1	
E00001430	Washer 平墊片	#80 51mm(SUS WS)	PIA	1	
E00001431	客戶提供Parts	客戶提供Parts	PIA	1	
E00001432	工廠提供	工廠提供	PIA	1	
E00001750	螺絲	有線內六角 螺絲 320 * 12L (SUS-CAP) 8L/25	白鐵	1	
E00001751	spring 彈簧	3mm 彈簧 8個 * 12G	Spring 彈簧 8個 * 12G 螺絲	1	
E00002422	VHP Direct Drive Robot Adapter (雷塞)	200mm	雷塞 AL	1	
E00002943	Bearing	NSK NIXT 8013 DDC8PS	NSK SS8014FN517 Motor Bearing (藍色漆)	1	

回上一頁

Part/Qty					
Basic Parts Replacement					
P/N KEY	料號	品名	規格	備註/備註	數量
E00000002	E00000007	Retract sensor 退縮感測器	Mercotec 630 6 conductor 250V	退縮感測器 Mercotec Rotating Connector	1
E00000003	E00000047	Bearing	NAACH 6008 2R	退縮感測器/Magnet 軸心用	1
E00000057	E00000057	Motor (Refurbish)	SS8014FN517	AC 伺服 NSK SS8014FN517 OD Motor	2
E00000003	E00000003	Bearing	NSK NIXT 8013 DDC8PS	NSK SS8014FN517 Motor Bearing (藍色漆)	2
E00001434	E00000001	Photo Sensor 光感測器	PI181	PI 39% MTA-100 Header 光感測器(藍色漆)	4