



MKS Throttle Valve Overhaul Procedure

(MKS: 253B-23958)





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➤ Basic Information

Picture



Factory P/N : 253B-23958 .

Function : Pressure controller valve .

Port Size : KF-40 .

Port 方向 : 180度 .

Driver : Motor .

Driver界面 : NA .

Key parts : Motor, Gear , 閥片, 軸心 .

Bellow type : NA .

Seal type : 全氟O-Ring .

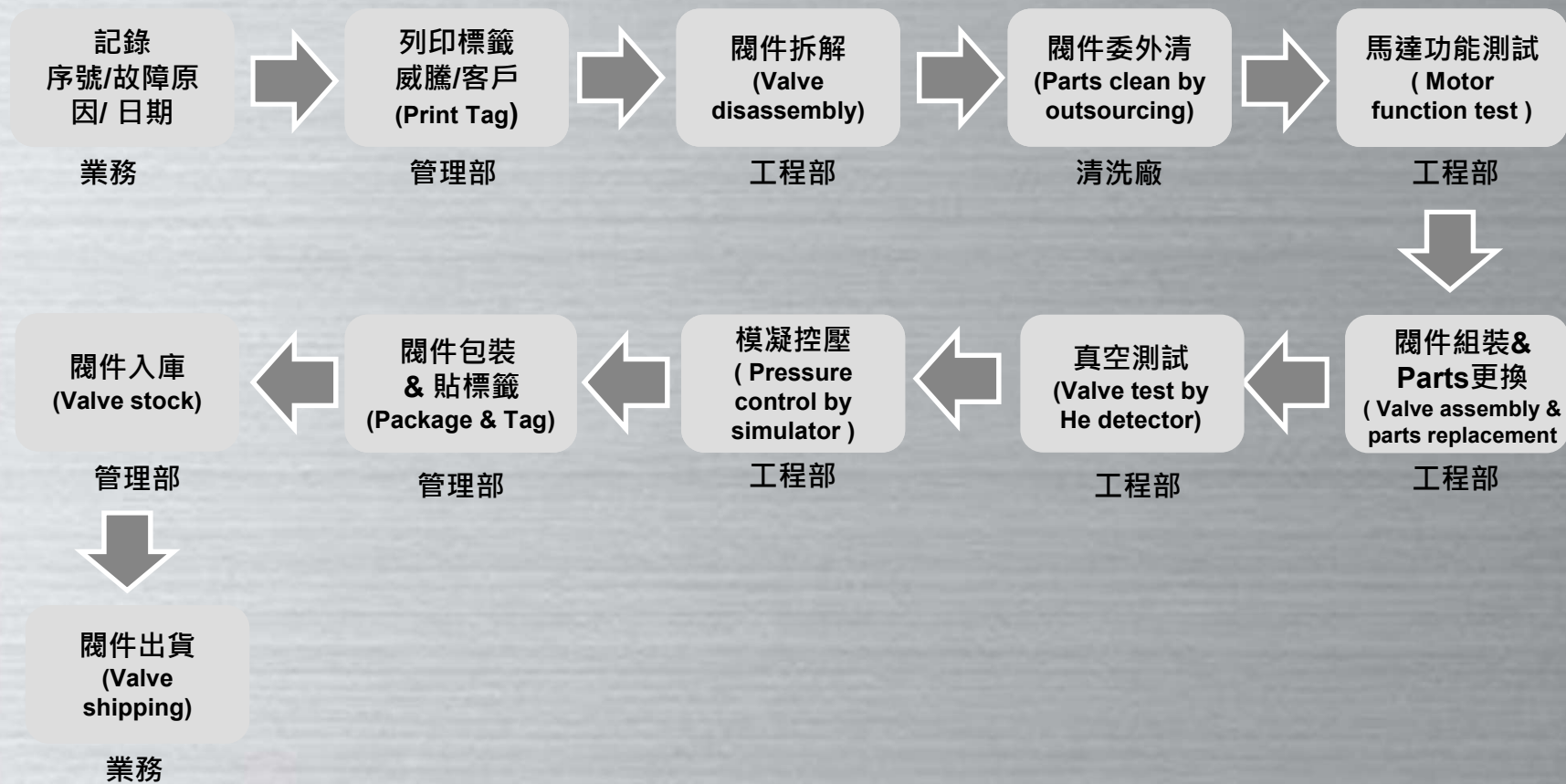
Application : AMAT .



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➤ Overhaul process flow





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1. Valve disassembly



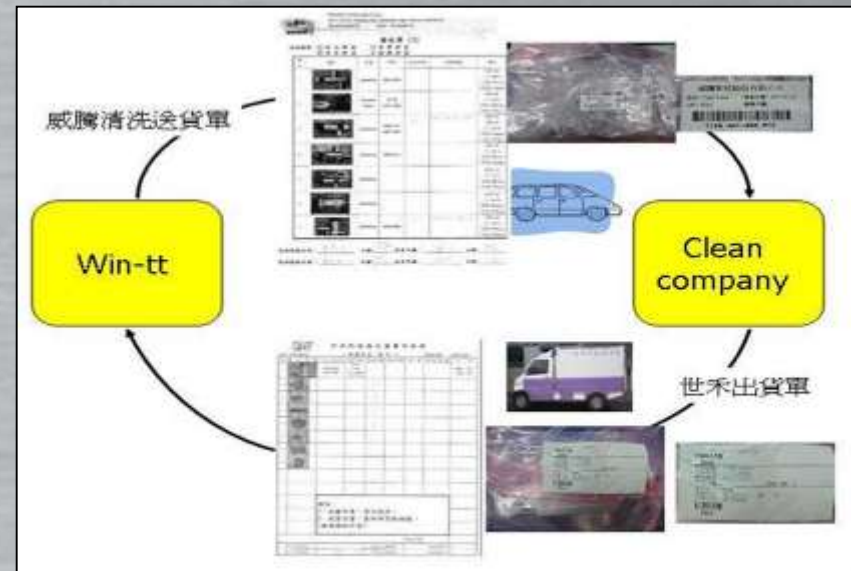


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2. Parts clean by outsourcing



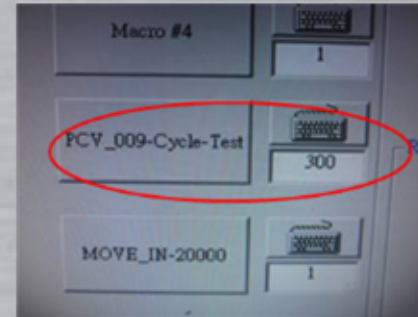
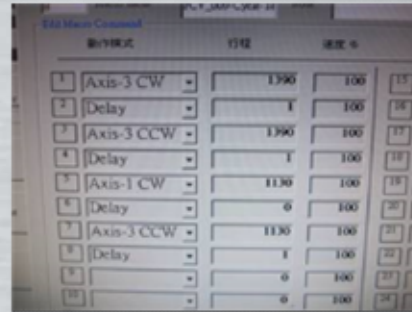
送洗物件



送洗流程

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3. Motor performance test



- * Open to close total count: 1387~1400 step
- * Motor performance test Step 馬達最高速度 : 1000 Plus/sec.



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4. Parts Replacement



1. PVC底座
2. PCV閥體
3. 底座固定螺絲
4. PCV軸心
5. 固定齒輪螺絲
6. PCV Motor
7. 閥頭固定座
8. 墊片(1)
9. 墊片(2)
10. 彈簧
11. 墊片(3)
12. 墊片(4)
13. Beraing 墊塊
14. Beraing(1)
15. Beraing(2)
16. 軸心固定螺絲
17. O-Ring(6.02*2.62mm)
18. O-Ring(23.39*3.53mm)
19. 滑塊

Parts replacement:

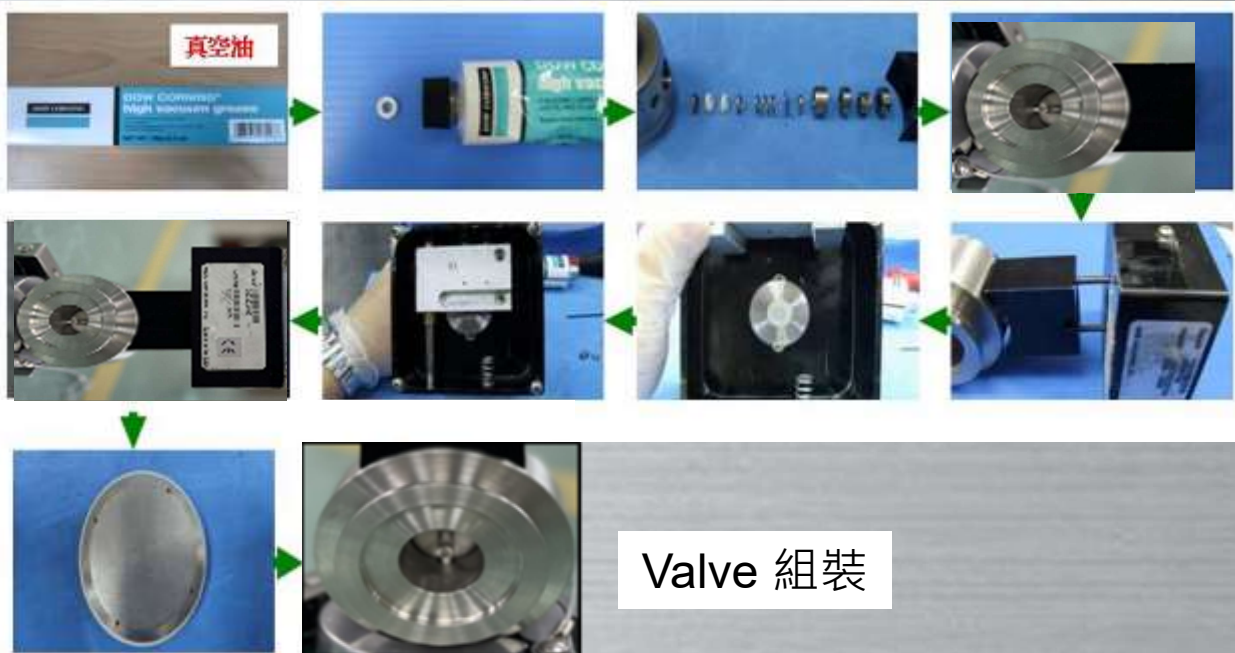
1. O-ring seal
2. Spring 華司
3. 軸心
4. Switch *2
5. Bearing & spring
6. Housing/ 閥片
7. Motor (overhaul)

O-ring 材質: 全氟(客戶指定)



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5. Valve Assembly

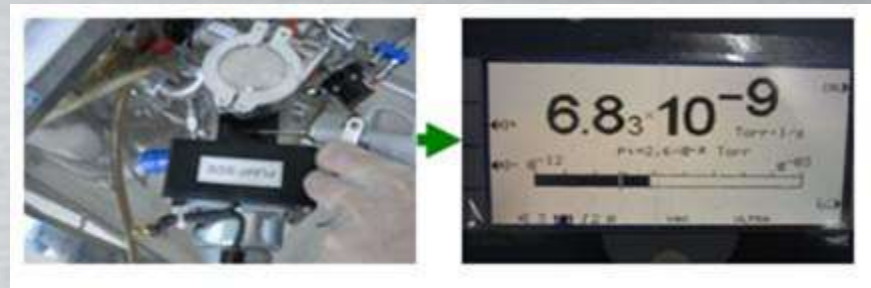




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6. Valve final test:

Vacuum leakage by He detector



Pressure Control Test





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6. Valve final test:



Winten MKS1651D Simulator for 253B Throttle Valve

Valve ID: MKSTPV 009 TRST

Port: KP50 Flange

With Sealed Test

- 1.Test1:Pressure 375 torr N2=10L with 5L ON/OFF
- 2.Test2:Pressure 700/760/720 torr with N2 20L
- 3.Test3:Pressure 760 torr with GAS2 ON/OFF
- 4.Test4:Pressure 80 torr N2=20L with 5L ON/OFF
- 5.Test5:Pressure 80 torr N2=30L with 5L ON/OFF
- 6.Test6:Pressure 40 torr N2=40L

Without Sealed Test

- 1.Test1:Pressure 75 torr with N2 20L+5L
- 2.Test2:Stable Pressure 7.5 torr with N2 20L

Graph showing pressure (psia) vs time (min) for tests 231_psa and 232_psa.

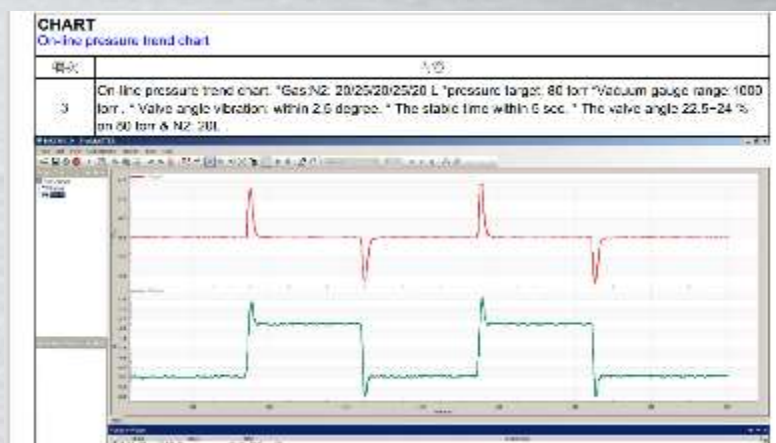
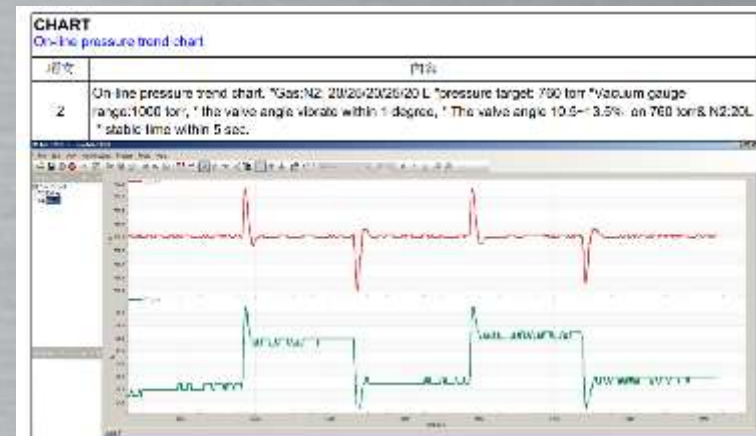
Name	Value	Unit	Range
232_psa_dsp	50, 50	psia (VAL, MAX)	300
232_psa	SUM, 100.0, 100.0	psia (VAL, MIN, MAX)	300
psw	10.00	psia	300
232_psa	50, 100	psia (VAL, MAX)	300
ControlCommand	0	BOOL	300
consoleCommand	DE (00000000/00/00/00)MPS	ASCII	300
cmdResponse	MS21 (00/00/00)	ASCII	0
targetPosition	0	BOOL	0
ps_pos[0]	0	ASCII	3000
FlowStat	0	BOOL	300
FlowStat2	0	BOOL	300
FlowStat3	0	BOOL	300

RS232 GAST Communication COM1: speed=115200



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6. Valve final test:





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6. Valve final test:



CHART

On-line pressure trend chart

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5	Pressure Target: 40 Torr \pm 0.5 torr Gas flow: 40L

