



Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

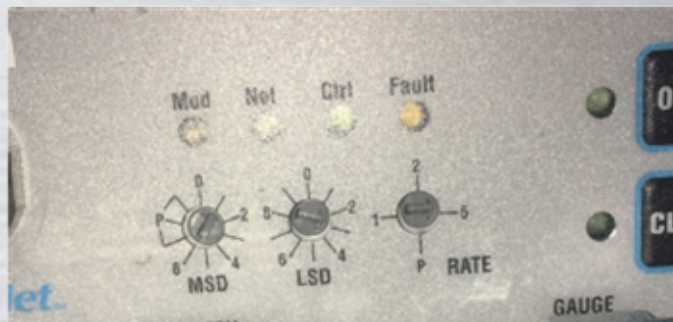




Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

➤ Basic Information

Picture



Factory P/N : [TBV-IQD-150-NW-40-S05](#) .

Function : 壓力控制 .

Port Size : KF40 .

Port 方向 : 180度 .

Driver : Intellisys Device Net:MSD:1, LSD:3, RATE:5 .

Driver界面 : NA .

Key parts : Motor,軸心, 閥片 .

Bellow type : NA .

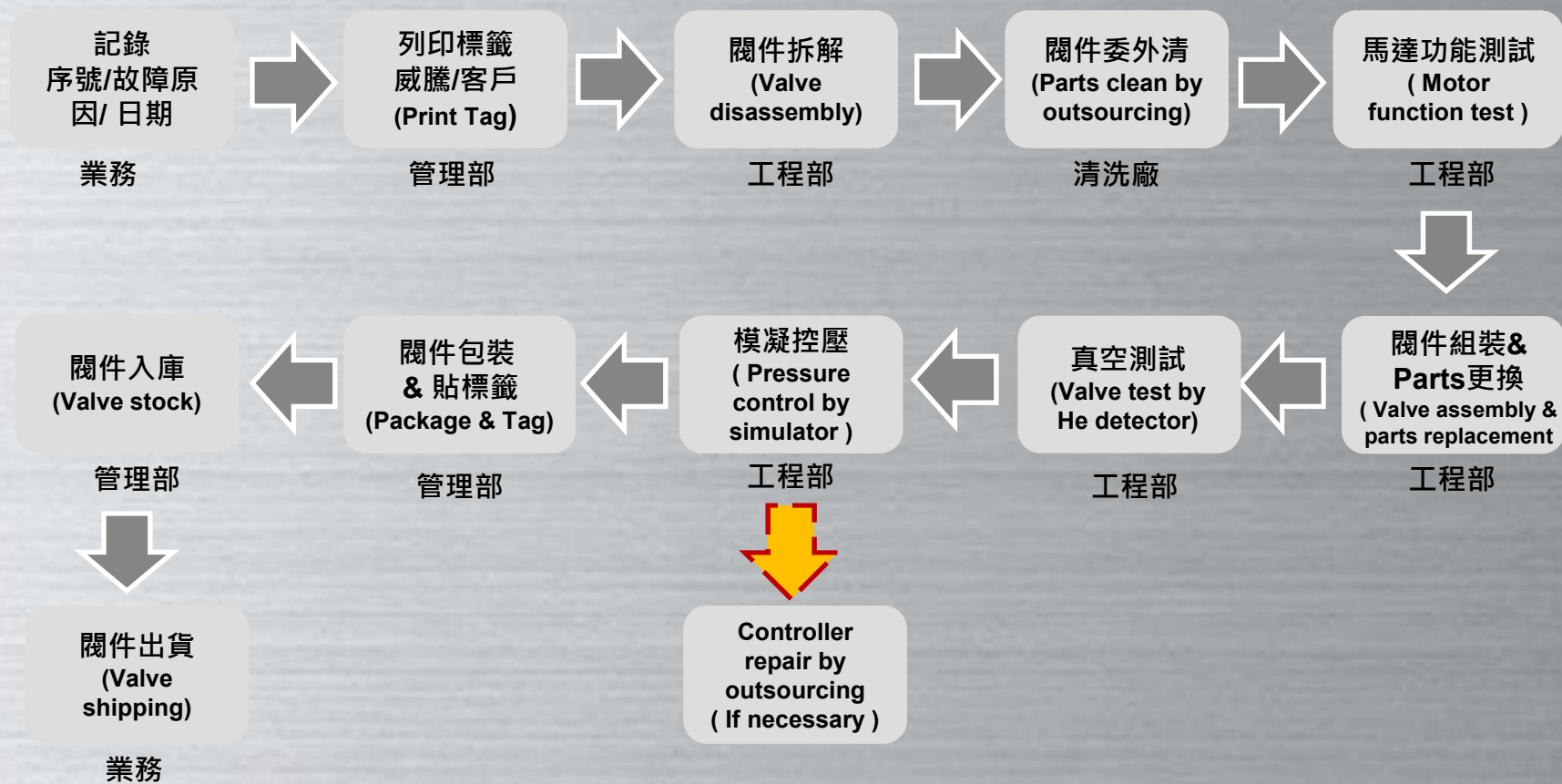
Seal type : O-Ring .

Application : NA .



Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

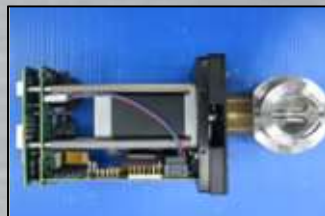
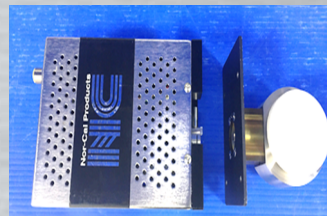
➤ Overhaul process flow





Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

1. Valve disassembly

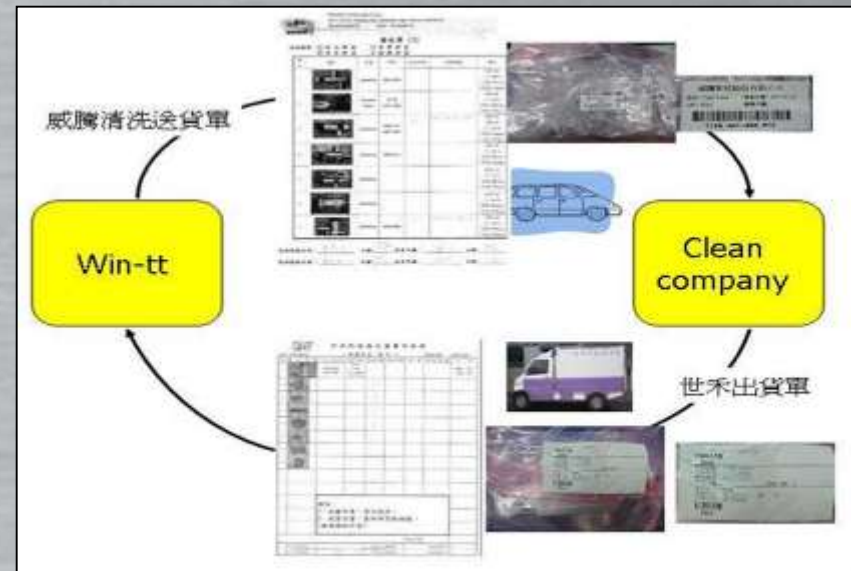


Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

2. Parts clean by outsourcing



送洗物件



送洗流程

Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

3. Motor performance test



- * Open to close total count: 9500~13000 step
- * Motor performance test Step 馬達最高速度：400 plus/sec.



Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

4. Parts Replacement



Parts replacement:

1. O-ring seal
2. Spring 華司
3. 聯軸器
4. Housing/ 閥片 (if necessary)
5. 軸心 (If necessary)
6. Controller (PCB repair, if necessary)

O-ring 材質:

- 9100 (Kalrez) --- 因為彈性問題, 控壓測試時, 閥件角度變化較大
- 8900 (Kalrez) --- 現行使用

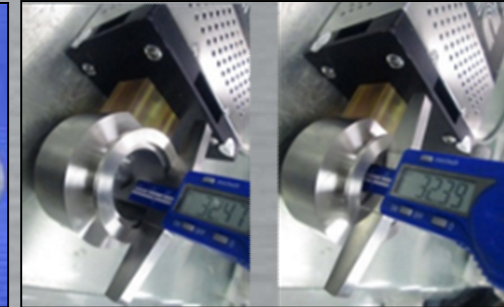


Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

5. Valve Assembly



To use “扭力扳手”
to fix coupling.
(14 kg-cm)



Valve Leveling



Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

6. Valve final test:

Vacuum test by He detector



Pressure on-line test by simulator





Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

6. Valve final test:



Wintec NC Auto Testing Simulator

Down Go-All Abort EMO

Valve ID--> 56520

2.Model Selection--> TPV 040/115

Without Sealed Test

1. Test1 (Target Pressure 0 bar with N2 1.1L) Test1
2. Test2 (Seal 5L) Test2
3. Test3 (Target Pressure 20 bar with N2 20L) Test3
4. Test4 (Target Pressure 90 bar with N2 20L) Test4
5. Test5 (Target Pressure 50 bar with N2 20L 1-5L) Test5

Project Tree

- New Project
- Folder
- File
- File
- File

Graph

Test

Time(sec)

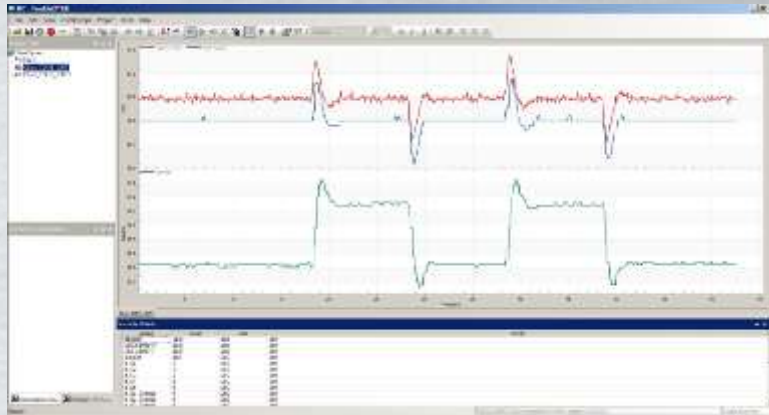
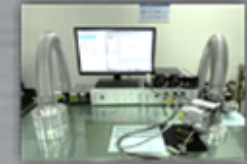
Variable Watch

Name	Value	Unit	Unit	Period
paraClass	100.0		100	
CH2(100BT)	5.4	mm	100	
CH2(100BT)	0.1	mm	100	
valveID	255	DEC	100	
b_S1	0	DEC	100	
b_S2	0	DEC	100	
b_S3	0	DEC	100	
b_S4	0	DEC	100	
b_S5	0	DEC	100	
b_S1_Change	0	DEC	100	
b_S2_Change	0	DEC	100	
b_S3_Change	0	DEC	100	

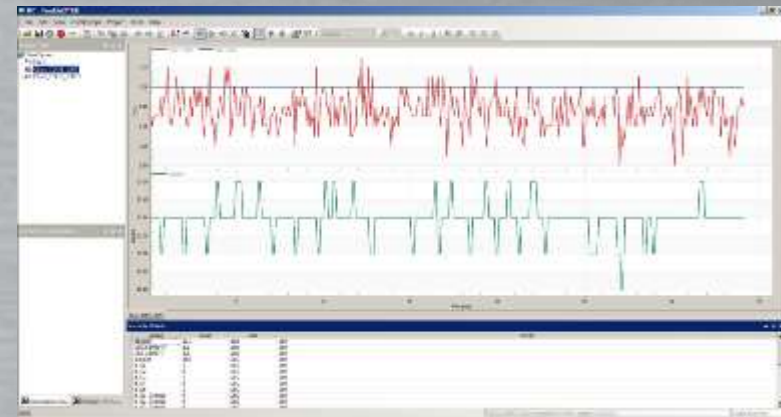


Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

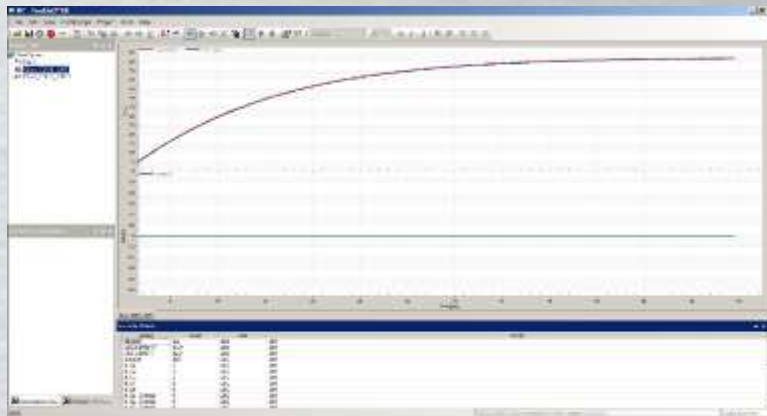
6. Valve final test:



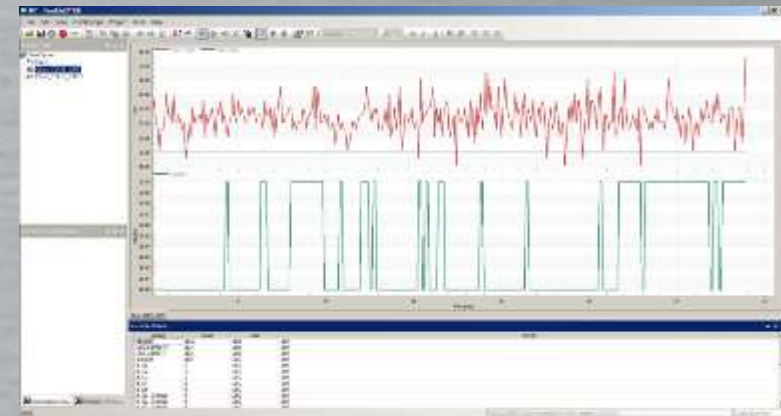
Pressure Target : 50 Torr
Gas Flow: 20L+5L



Pressure Target : 3 Torr
Gas Flow: 1.3 L



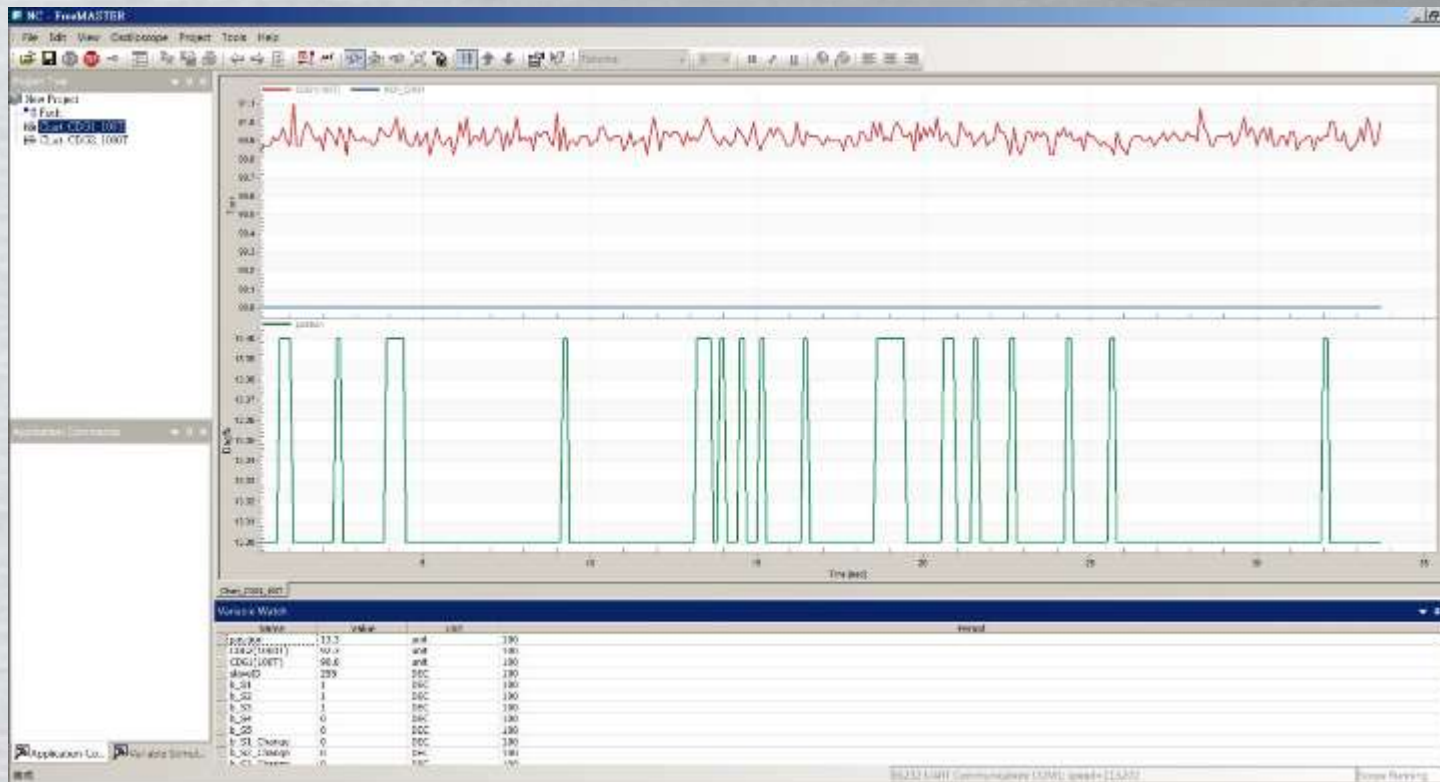
Valve Seal Test



Pressure Target : 20 Torr
Gas Flow: 20L



Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)





Nor-Cal Butterfly Valve Overhaul Procedure (TBV-IQD-150-NW-40-S05)

7. e check-list

動作								
順次	(英)分標	單位	Data Name	分標資料	上限	下限	內容	Remark
5	Position found	Step	C-OPCL	Y	1000	200	Valve open to close test (Total step)	COA PVD open to close test
6	Vacuum test	L/Sec	P-LEAK	Y	500	0.05	Vacuum leakage check <5E-8 Torr -L/S (PVD Leak Check) (5E-8~1E-12 Torr -L/sec)	COA PVD leak check (5E-8~1E-12 Torr -L/sec)
7	Pressure test	Torr	P-OP5N	Y	9	7	N2: SL Valve open position	coa pvd throttle step open
8	Pressure test	Torr	P-OP50	Y	9.1	7.1	N2: SL Valve open position to 50 step	coa pvd throttle step open(50T)
9	Pressure test	Torr	P-5040	Y	9.3	7.5	N2: SL Valve from 50 step to 40 step	COA PVD throttle step,40T
10	Pressure test	Torr	P-4030	Y	9.9	7.9	N2: SL Valve from 40 step to 30 step	COA PVD throttle step,30T
11	Pressure test	Torr	P-3020	Y	13.5	11.7	N2: SL Valve from 30 step to 20 step	COA PVD throttle step,20T
12	Pressure test	Torr	P-2015	Y	21.6	19.6	N2: SL Valve from 20 step to 15 step	COA PVD throttle step,15T
13	Pressure test	Torr	P-1510	Y	39.8	37.8	N2: SL Valve from 15 step to 10 step	COA PVD throttle step,10T
14	Resistance test	Torr	P-1005	Y	60	50	N2: SL Valve from 10 step to 5 step	COA PVD throttle step,5T
15	Pressure test	Torr	P-CLOS	Y	80	60	N2: SL Valve close position	COA PVD throttle step,close (0T)
16	調整	Step	H-0000	Y	3	0	N2: SL Open to 19,20,21,22,23 step 調整 5.10 Torr	COA PVD magnetism stagnant test
17	Pressure test	Torr	P-SA1H	Y	67	57	Seal test: Gas: SL Valve on close position Saturate pressure	NA
18	Pressure test	%	S-0003	Y	25	21	Target pressure: 3 torr Gas: 2.4L Valve open rate: 21~25%	NA
19	Pressure test	%	S-0020	Y	32	27	Target pressure: 20 torr +/- 0.5 torr Gas pressure: 20L Valve open rate: 27~32%	NA
20	Pressure test	%	S-0090	Y	15	10	Target pressure: 90 Torr +/- 1 Torr Gas: 20L Valve open rate: 10~15%	NA
21	Pressure test	%	S-0050	Y	2	1	Pressure target: 50 Torr +/- 1 Torr Gas: 20 +/- SL Valve open rate: 17~20% different within 2%	NA
Check								
順次	分標	內容						
1	Condition check	Check PCB 空氣傳感器						
2	Torque request	To use the "壓力扳手" fix main shaft coupling (18 kg-cm)						
3	Condition check	Check Device net address MSD-1, LSO-3, RATE-5						
4	Motion cycle	Valve open to close cycle: 200 times						
Chart								
順次	內容							
1	Test 1: Seal test, Gas: SL Valve on close position. Keep 30 sec. Saturate pressure: 52~67 torr							
2	Test 2: Target pressure: 3 torr Gas: SL Valve open rate: 21~25%							
3	Test 3: Target pressure: 20 torr +/- 0.5 torr Gas pressure: 20L Valve open rate: 27~32%							
4	Test 4: Target pressure: 90 Torr +/- 1 Torr Gas: 20L Valve open rate: 10~15%							
5	Test 5: Pressure target: 50 Torr +/- 1 Torr Gas: 20 +/- SL Valve open rate: 17~20% different within 2%							