

구 분	담당	결재1	결재2

# Used-Equipment Refurbish Complete Report [LPOX to Pyro] T2DD3-16066-1

(주)지에스티세미

2014.07.14

## ■. Complete Refurbish



Main Body



Utility Box

## 1. System Specification.

No	Description	Model	Q'Ty
1	Flat zone Aligner	Flatzone Type	1
2	Wafer Counter	M-826	1
3	Ionizer	CT-204S	1
4	Barcode Reader	BL-701	2
5	AGV Sensor	DM-HB1	1
6	Main Controller	CX-3002B	1
7	Exhaust Controller	PCU-3000 / EC-5202	1
8	PLC Unit	OMRON (CX-1314)	1
9	Mecha Controller	CX-1223	1

No	Description	Model	Q'Ty
10	MFC Controller	CX-3202	1
11	Temp Controller	CQ-1600	1
12	Gate Controller	DN-150A	1
13	Torch Controller	CX-1317	1
14	Heater Transformer	D4EX05486	1
15	GFC Panel	Hard Gas Pattern	2
16	Torch	Lamp Torch	1
		UV Sensor	1
		T/C	0

## 2. Material Parts.

No	Description	Material	Q'Ty
1	Flange	SUS-316L	1
2	Cooling Flange	SUS-316L	1
3	Seal Cap	SUS-316L	1
4	Cap Base	SUS-304	1
5	Teflon Cusion	Teflon	1
6	Cool Trap	SUS-304	1
7	Drain Trap	Acrylic Trap	1
8	Auto Shutter	SUS-304	1
9	Scavenger Cover	SUS-304	1
10	Exhaust Line	Teflon Exhaust Line Ass'y	1
11	Reactor Gas Line Set	SUS-316L EP	1

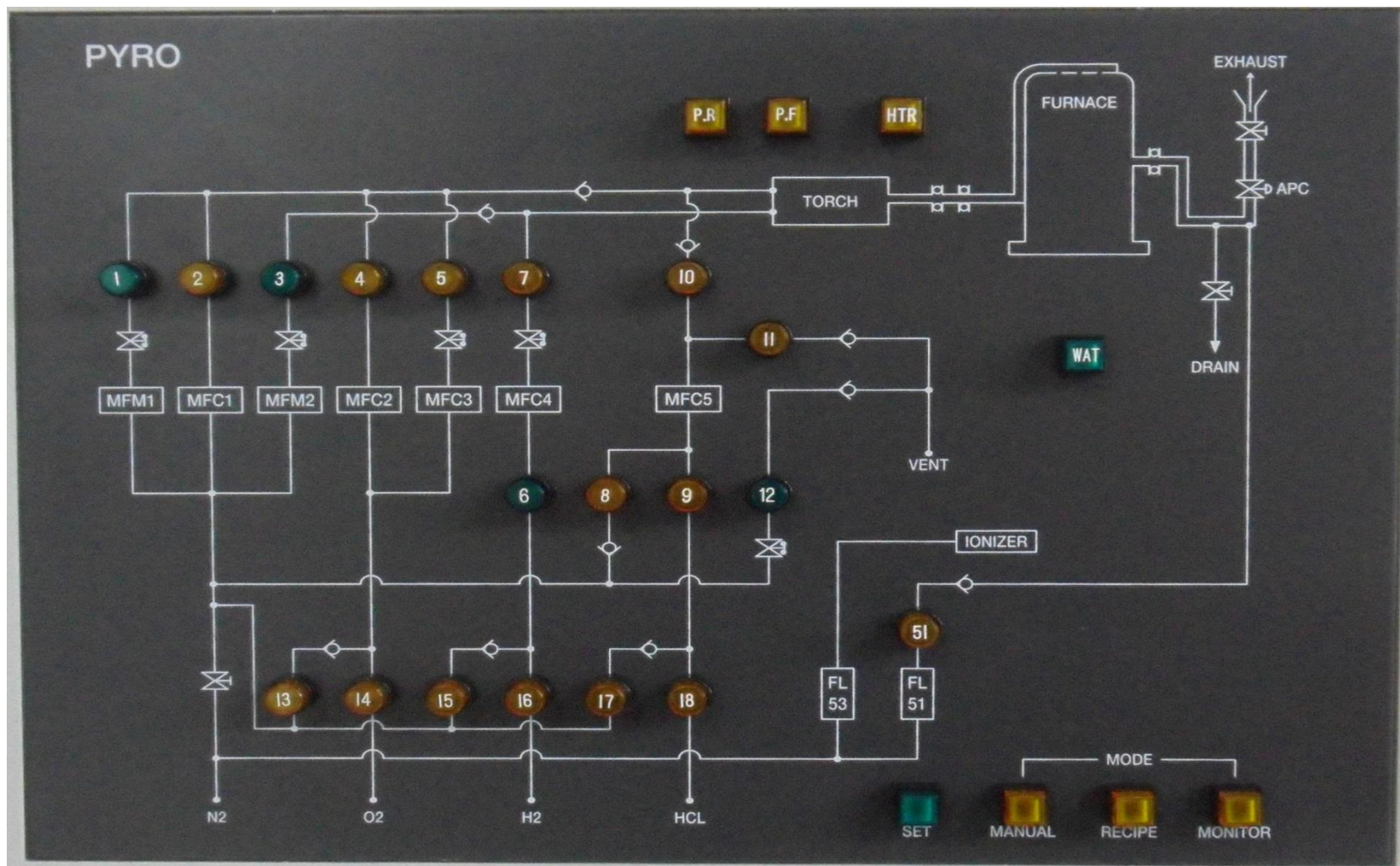
### 3. Gas Detail.

#### 3-1) MFC Specipication

MFC No.	GAS	FULL SCALE	UNIT (단위)
MFC 1	N2-1	30.000	SLM
MFC 2	O2-1	20.000	SLM
MFC 3	O2-2	0.600	SLM
MFC 4	H2	20.000	SLM
MFC 5	HCL	0.500	SLM

## 4. Valve Interlock Sheet.

### 4-1) Gas Pattern.



## 4-2) Valve Interlock Sheet.

Valve NO	Interlock 내용
AV1(NO)	Unconditional Open/Close allowed.
AV2	Unconditional Open/Close allowed.
AV3(NO)	Unconditional Open/Close allowed.
AV4	Opening allowed when Furnace port cap is closed.
AV5	Opening allowed when Furnace port cap is closed.
AV6(NO)	Unconditional Open/Close allowed.
AV7	Opening allowed when AV4, AV14 is Open and Furnace port cap is closed and H2 gas detector is normal operation.
AV8	Opening allowed when AV9 is closed.
AV9	Opening allowed when AV8 is closed and Hcl gas detector is normal operation.
AV10	Opening allowed when AV11 is closed and Furnace port cap is closed.



Valve NO	Interlock 내용
AV11	Opening allowed when AV10 is closed.
AV12(NO)	Unconditional Open/Close allowed.
AV13	Opening allowed when AV14 is closed.
AV14	Opening allowed when AV13 is closed.
AV15	Opening allowed when AV16 is closed.
AV16	Opening allowed when AV15 is closed.
AV17	Opening allowed when AV18 is closed.
AV18	Opening allowed when AV17 is closed.
AW51	Unconditional Open/Close allowed.
WAT	Unconditional Open/Close allowed.

Valve NO	Interlock 내용
HTR	Unconditional Open/Close allowed.
P.F	Unconditional Open/Close allowed.

## 5. Utility Specification.

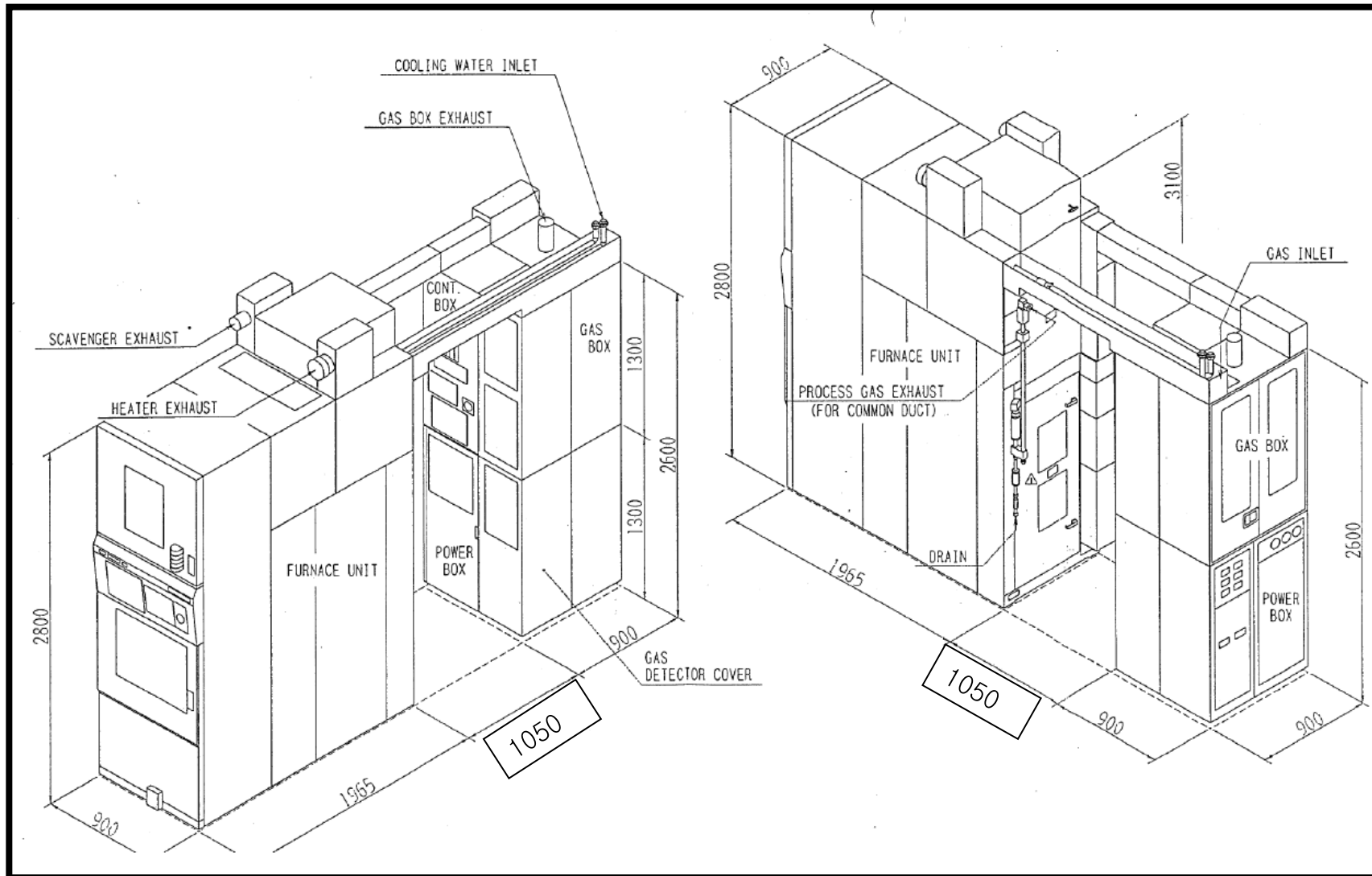
Unit	Name	Spec	Qt'y	Joint
Gas Unit	P-N2	0.30MPa / 30L/min	1	¼" UJR
	O2	0.20MPa / 21L/min	1	¼" UJR
	H2	0.20MPa / 20L/min	1	¼" UJR
	HCl	0.20MPa / 0.5L/min	1	¼" UJR
	Air/N2	0.6MPa	1	¼" UJR
	Loader Vac	35~21KPa / 40NL/min	1	¼" UJR

Unit	Name	Spec	Qt'y	Joint
PCW	IN	3.5Kgf/cm3	1	3/4B
	OUT	0.5Kgf/cm3	1	3/4B

Unit	Name	Spec	Qt'y	Joint
Power	Heater	1Φ208V, 50KVA	1	
	Control (C/U)	1Φ208V, 9KVA	1	

Unit	Name	Spec	Qt'y	Joint
Exhaust	Heater Exh	5.0 m <sup>3</sup> /min	1	Φ150mm
	Scavenger Exh	4.0 m <sup>3</sup> /min	1	Φ100mm
	Gas box Exh	3.2 m <sup>3</sup> /min	1	Φ100mm
	Process Exh	100 Pa	1	Φ25.4mm
	Drain	Water Drain PTFE	1	½" Finelok

## 6. Out-Line



## 7. Refurbish History

### **- LPOX to Pyro Refurbish.**

- 1) Exchange For Jungle Box.
- 2) Novel Fabrication For Reactor Gas Line.
- 3) Modify For Heater Area.
- 4) Modify For Cooling Area.
- 5) Modify For Exhaust Area.
- 6) Modify For Utility Box.
- 7) Modify For Flange.
- 8) Modify For Torch Box.
- 9) Modify For Electrical & Signal Cable.
- 10) Modify For Soft Were & PLC Ladder.
- 11) System check.

## 8. Detail Of Modification

- 1) Exchange For Jungle Box.
- 2) Exchange For Flow meter Panel.

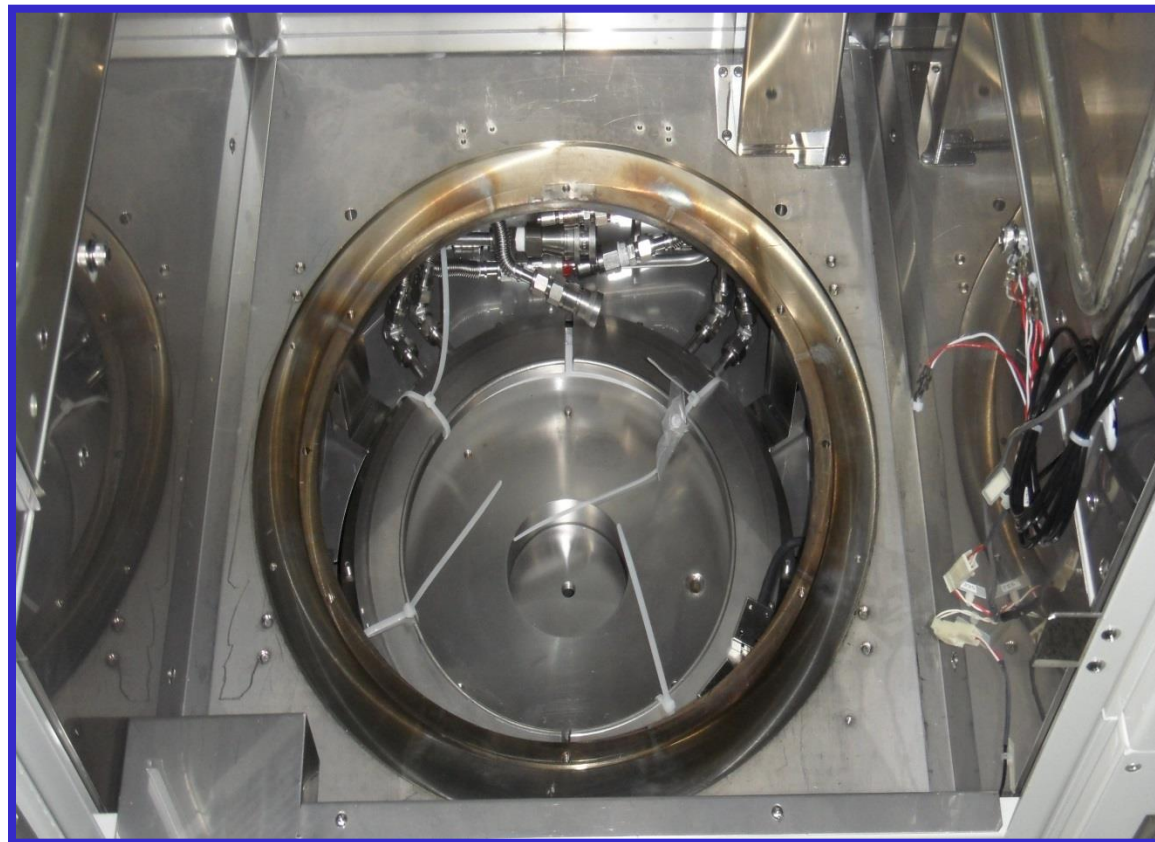


Gas Panel  
(Exchange)



Flow Meter Panel  
(Exchange)

### 3) Modify For Heater Area



Heater Base  
(Exchange)



#### 4) Modify For Cooling Area



Flange / Cap Temp Control Valve  
(Add)



Torch Cooling Line  
(Add)

#### 4) Modify For Cooling Area



Flange PCW Line  
(Exchange)

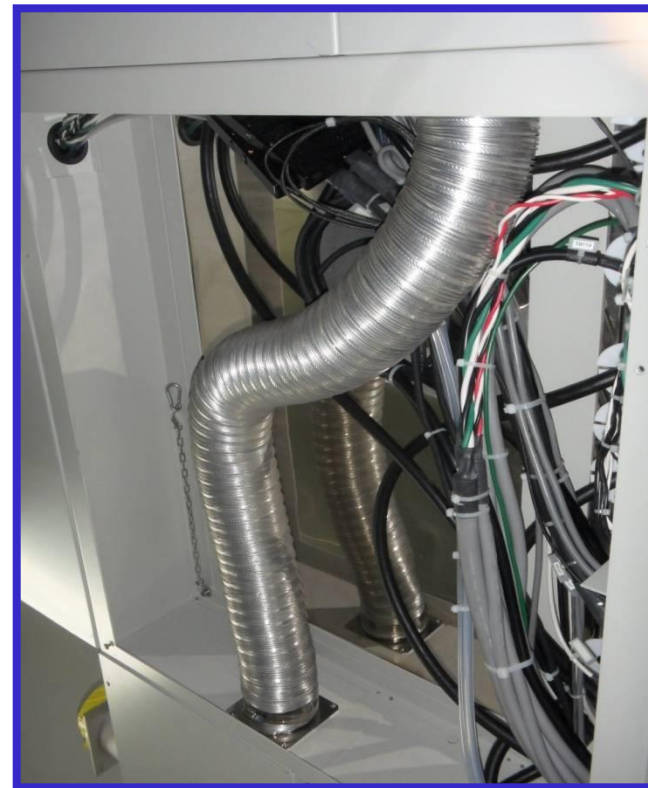


Exhaust Cooling Line  
(Add)

## 5) Modify For Exhaust Area.

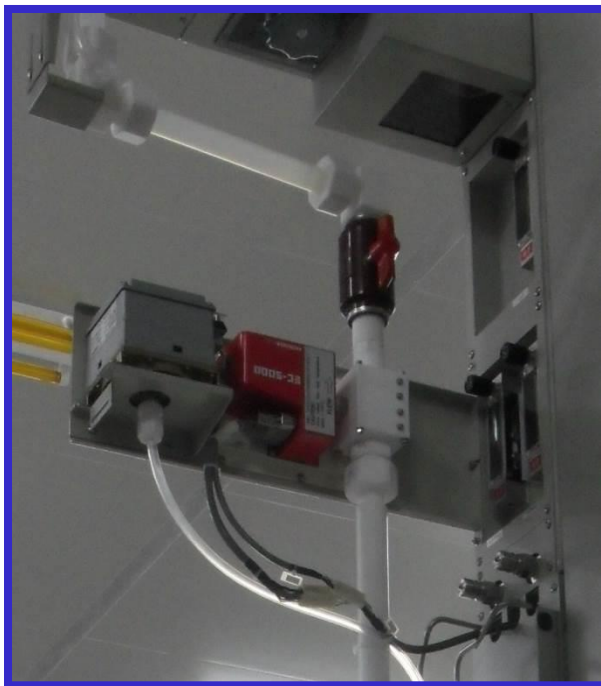


Process Exhaust  
(Add)



Torch Exhaust  
(Add)

## 6) Modify For Utility Box.



PCU3000, EC-5202  
(Add)

1. Flange Temp Control Add.
2. Tape Heater Temp Control Add.
3. Gas Detector Indicator Add.



## 6) Modify For Utility Box.

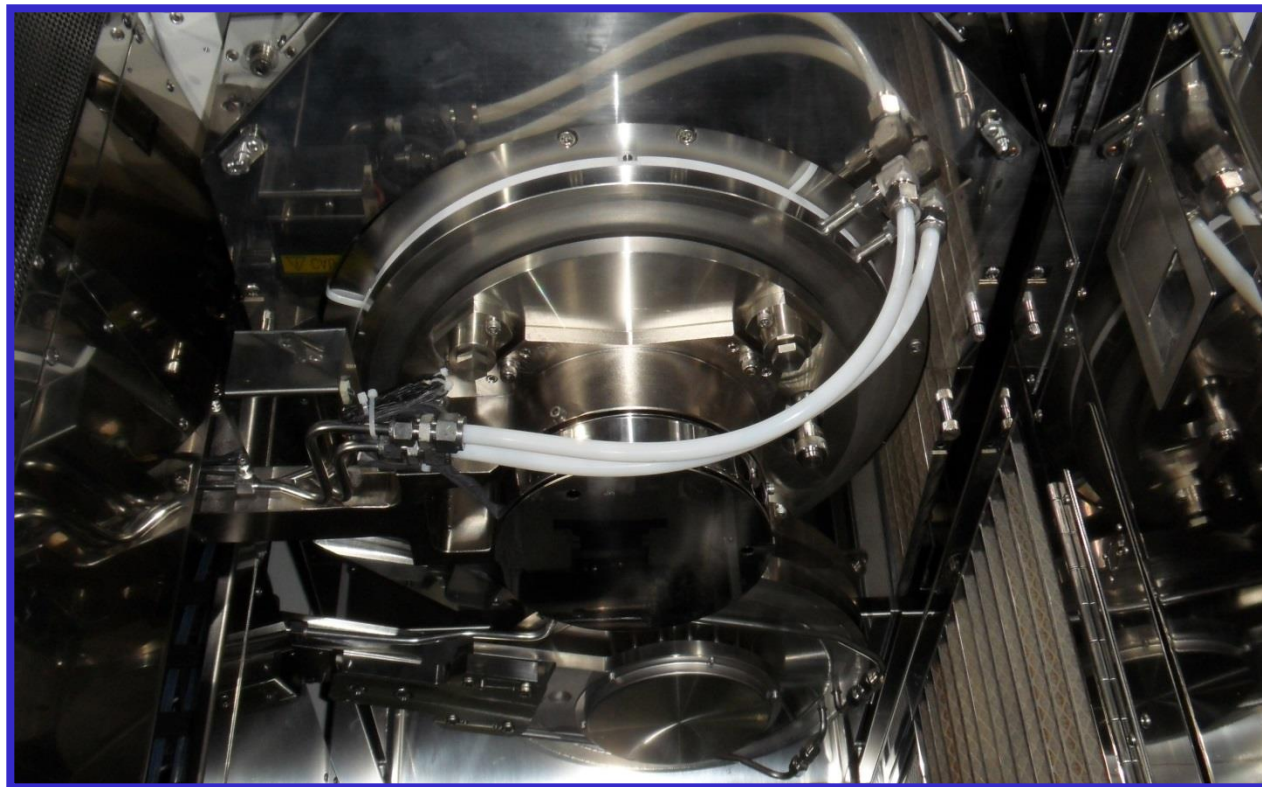


Gas Detector  
(Add)



Gas Pressure DPM  
(Add)

## 7) Modify For Flange.



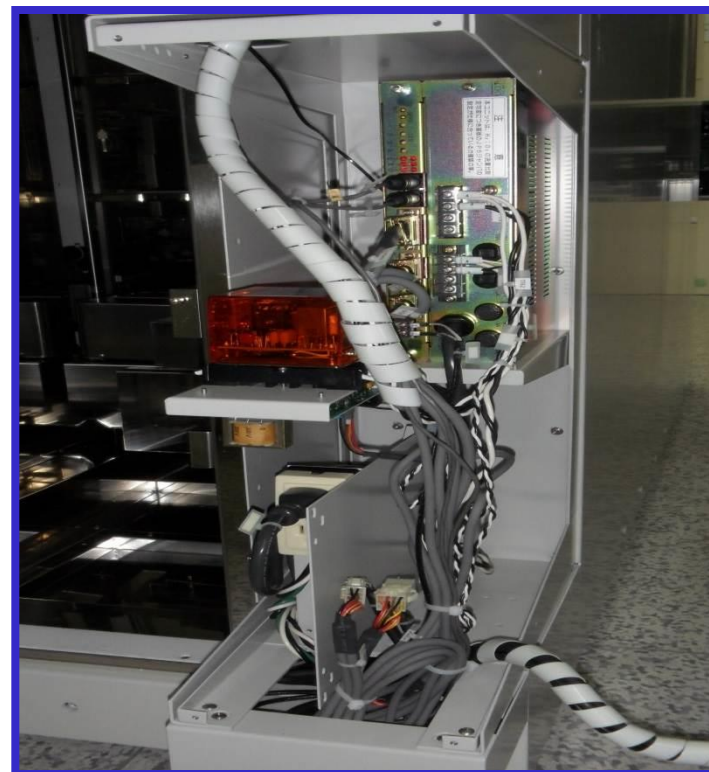
Seal Cap Ass'y  
(Exchange)

Humun Interlock  
(Add)

## 8) Modify For Torch Box.



Torch Box & Side  
Gas Line Cover  
(Add)



1. CX-1317 Add
2. Flame Detector / Water  
Leak Detector Add

## 8) Modification of Electric & Cable Assign

- 8-1) AC100V Modify.
- 8-2) Addition of Relay Unit In Relay Box
- 8-3) PLC Signal I/O Cable Modifications.
- 8-4) Connect Power and Signal Cable for CX-1317  
& Flame Detector.
- 8-5) Connect Power and Signal Cable for Torch Unit.
- 8-6) Connect for Torch Temp Monitor.
- 8-7) Modification of MFC Cable.
- 8-8) Modification of DPM Cable.
- 8-9) Connect Flange Temp Controller
- 8-10) Connect Signal Cable from CX-3202 to EC-5202
- 8-11) Connect Gas Detector Indicator & Sensor
- 8-12) Cable Modification for Solenoid Valve



## 9) Modifications of Soft Were / PLC Ladder.

9-1) System Parameter Exchange for PYRO.

9-2) Soft GFC Exchange for PYRO.

9-3) PLC Ladder Program Modification for PYRO.

■ Check Sheet (Other Check Sheet)

1. Mass Flow Controller Data
2. Valve Interlock Check List
3. PCW & GAS Line Pressurization Check List
4. Interlock Error Check List