

(주)한화/모멘텀

**앱솔릭스 SVM**

**GLASS UNPACKING LOADER 제안서**

## 1. Layout

- 1) Fab Layout
- 2) Glass Unpacking Loader
- 3) Ultra Sonic Cleaner(USC)

## 2. Glass Unpacking Loader 사양

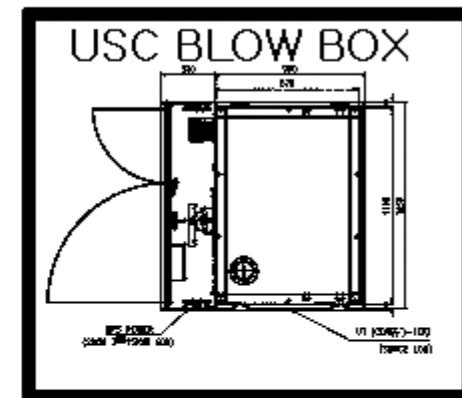
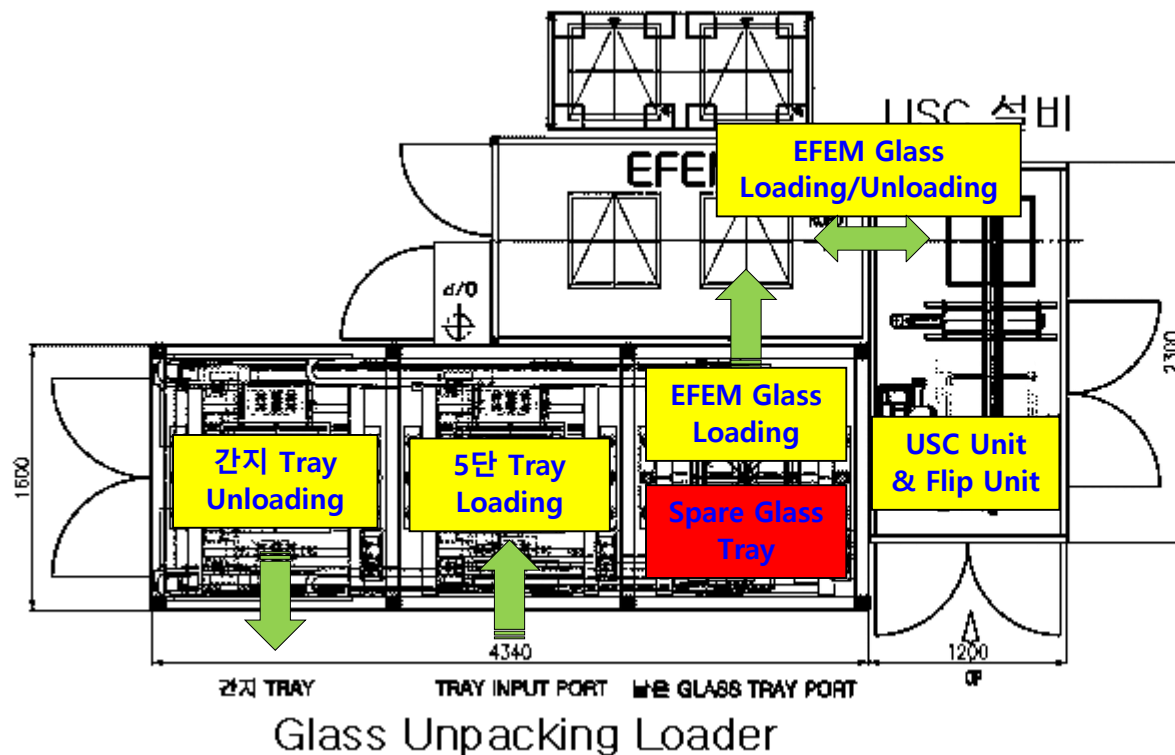
- 1) Glass & 간지 Tray Loader/Unloader
- 2) 간지 및 Tray 이재기
- 3) Glass 이재기

## 3. Ultra Sonic Cleaner(USC) 사양

- 1) USC Unit 구성도
- 2) Blow Unit



## 1) Fab Layout(TBD)

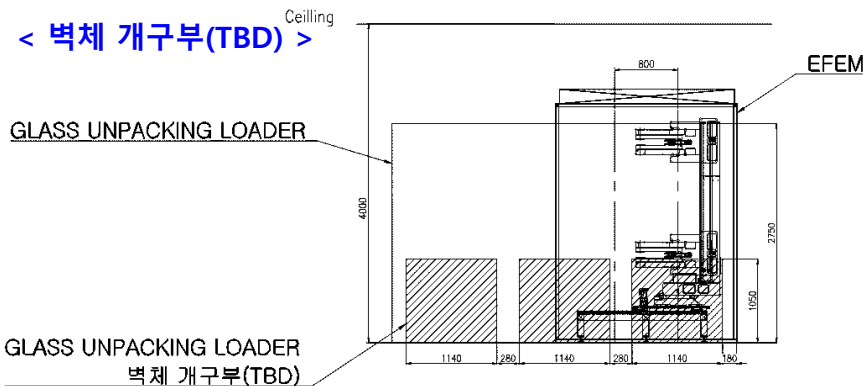


### 1. 설비 구성

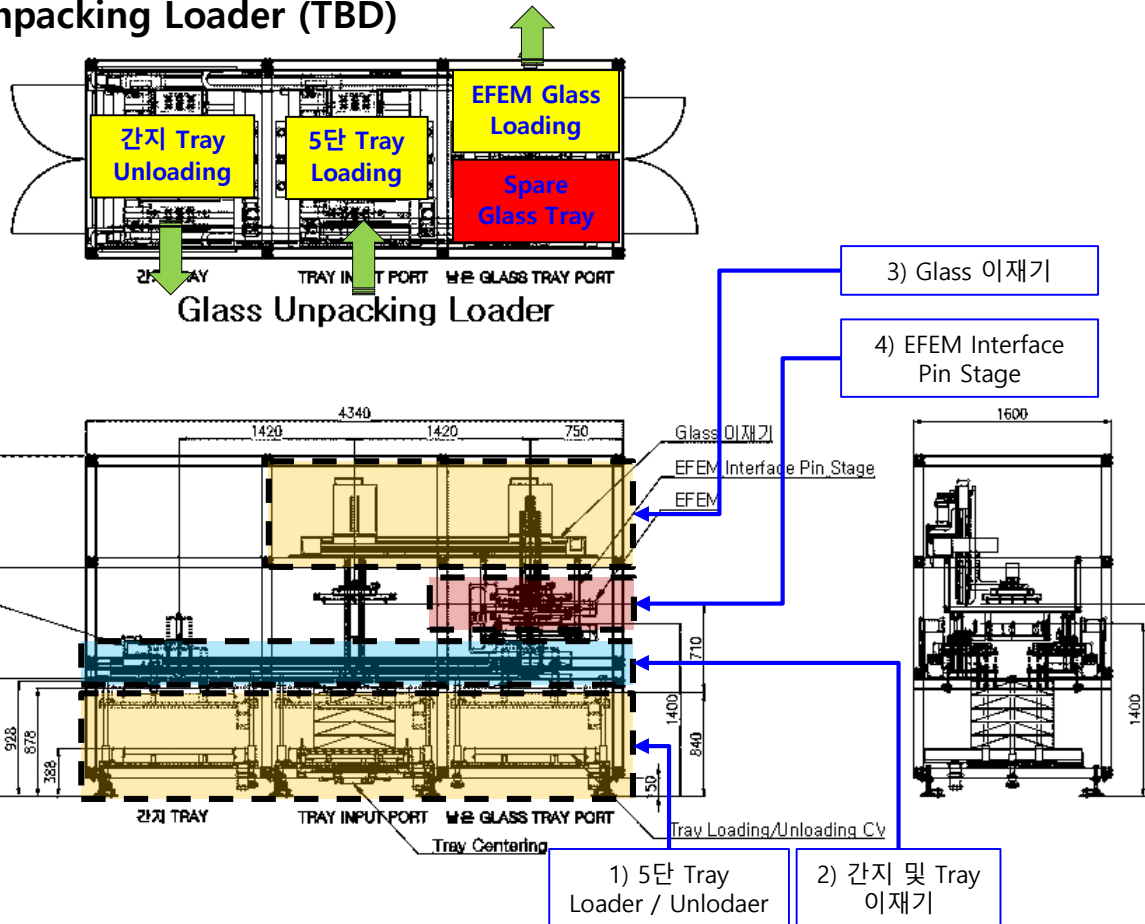
- 1) Glass Unpacking Lodaer
- 2) Ultra Sonic Cleaner(USC Blow Box 포함)

### 2. Process

- 1) 5단 Tray Loading(Roller 반송)
- 2) 간지 이재後 Glass 이재(Tray → EFEM Interface Pin Stage)
- 3) Glass EFEM Loading(Glass Unpacking Loader → EFEM)
- 4) Glass EFEM Unloading(EFEM → USC 설비)
- 5) USC 진행後 Glass EFEM Loading(USC 설비 → EFEM)



## 2) Glass Unpacking Loader (TBD)



### 1. Unit 구성

- 1) 5단 Tray Loader / Unloader  
(Lifter Unit & Centering Unit 포함)
- (1) Tray Input Port (Loading)
- (2) 간지 Tray Port (Unloading)
- (3) Spare Glass Tray Port
- 2) 간지 및 Tray 이재기
- 3) Glass 이재기
- 4) EFEM Interface Pin Stage(고정)

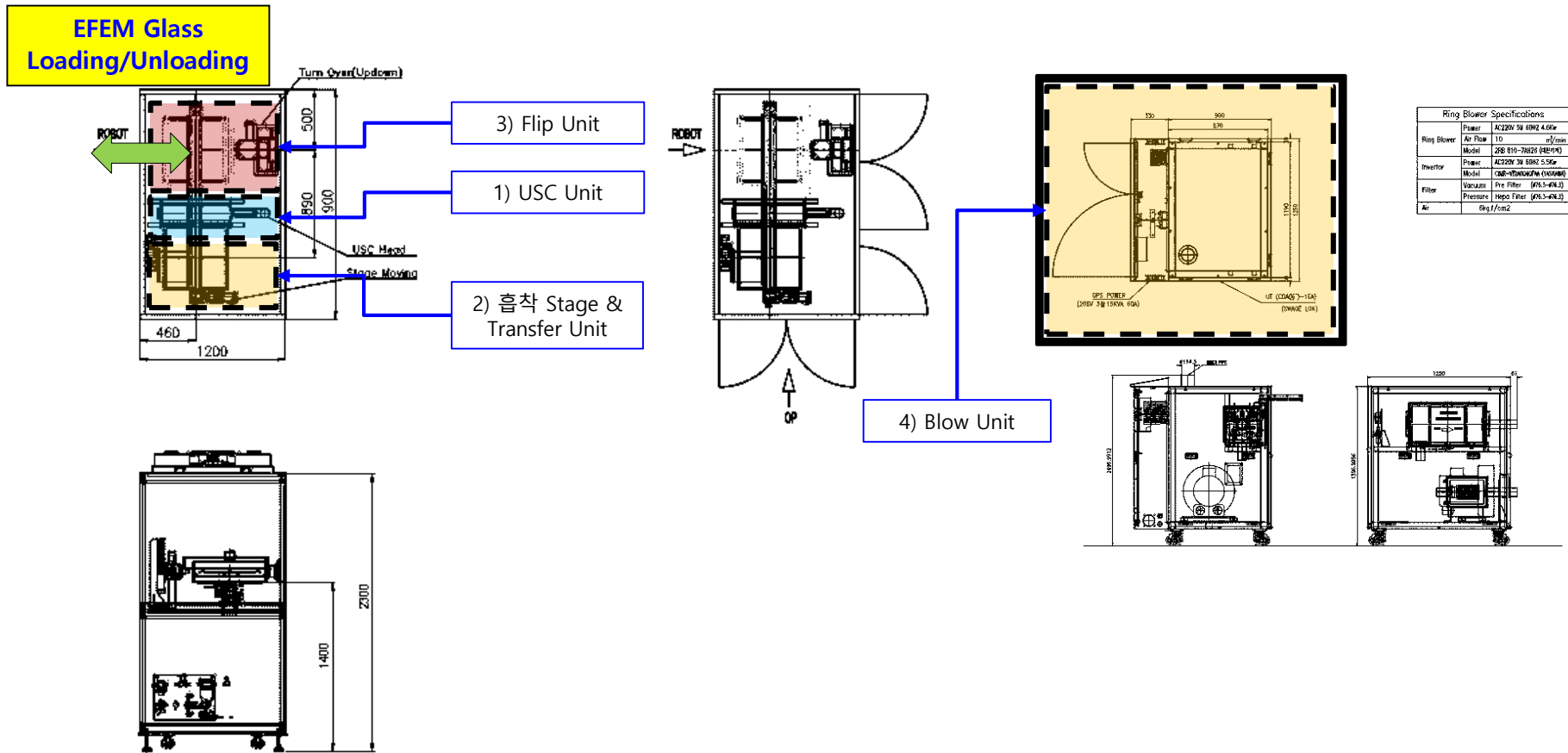
### 2. Normal Process

- 1) 5단 Tray Loading(대차)
- 2) 간지 및 Tray 이재기로 간지 이재  
(Input Port → 간지 Tray Port)
- 3) Glass 이재기로 Glass 이재  
(Input Port Tray → EFEM Interface Pin Stage)
- 4) EFEM Glass Unloading  
(EFEM Interface Pin Stage → EFEM)

### 3. Abnormal Process(Spare Glass 발생)

- 1) 5단 Tray Loading(대차)
- 2) 간지 및 Tray 이재기로  
Spare Glass Tray 이재  
(Input Port → Spare Tray Port)

## 3) Ultra Sonic Cleaner(USC) (TBD)



### 1. Unit 구성

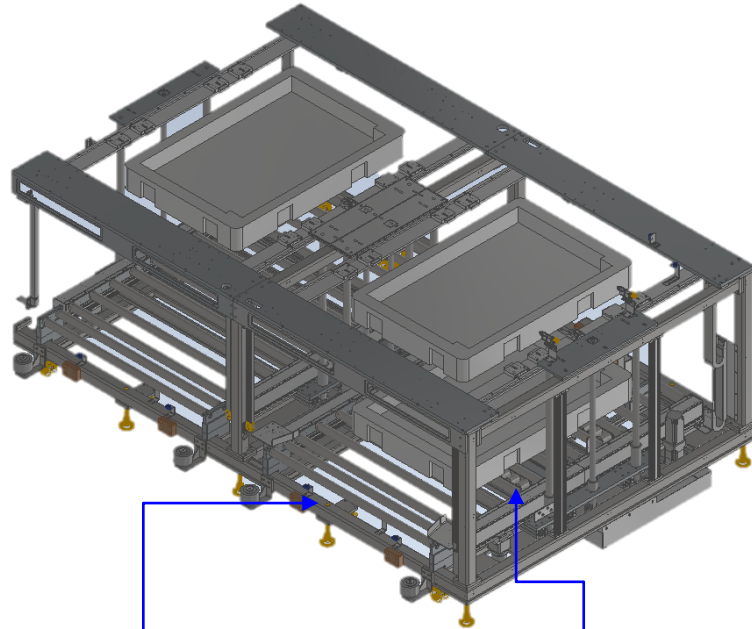
- 1) USC Unit
- 2) 흡착 Stage & Transfer Unit
- 3) Flip Unit
- 4) Blow Unit

### 2. Process

- 1) EFEM Glass Loading
- 2) Glass 상면 USC 진행(흡착 Stage Moving)
- 3) Glass Flip & 흡착 Stage 상면 USC 진행(흡착 Stage Moving)
- 4) Glass 흡착 Stage에 안착後 Glass 하면(Flip後 상면) USC 진행
- 5) EFEM Glass Unloading後 흡착 Stage 상면 USC 진행

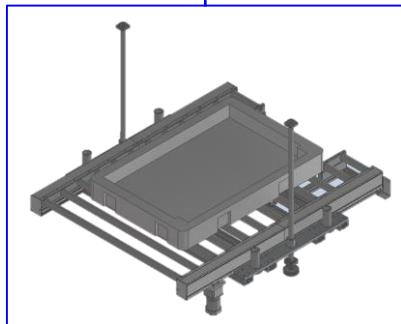
## 2. Glass Unpacking Loader

### 1) 5단 Tray Loader / Unloader

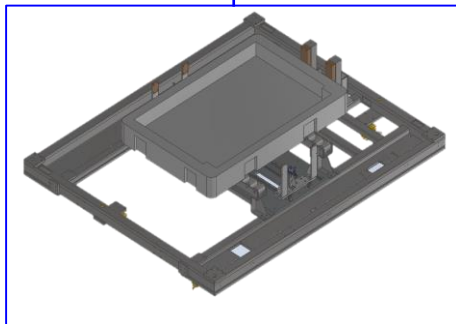


#### ■ Basic Specification

Item			Spec'	Remark
Tray Loader	CV	Motor	Induction Motor + Reducer	
		Driving Method	Helical Gear	
	Lifter Unit	Driving Method	S/Motor + Ball Screw + Ball Bush	
		Stroke	500mm	TBD
Tray Centering Unit	Stopper Unit	Driving Method	Cylinder + LM Guide	
	Centering Unit	Driving Method	Cylinder + LM Guide	
		Support	Free Roller	



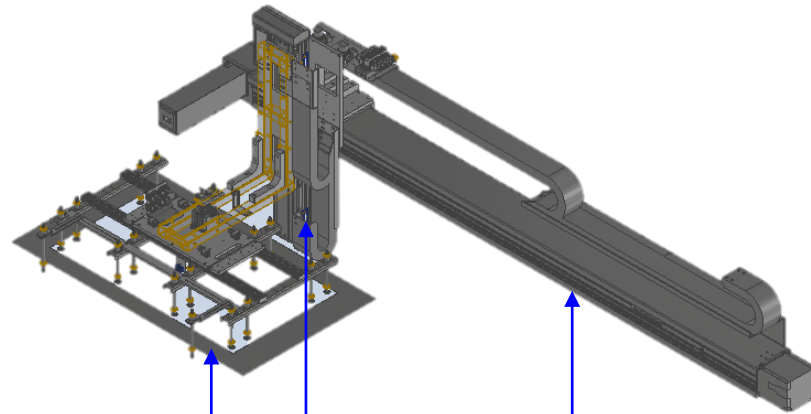
Tray Loader/Unloader CV



Tray Centering Unit

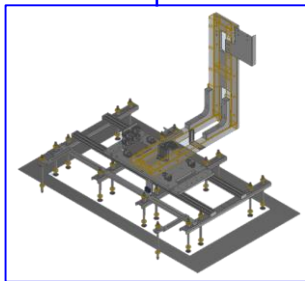
## 2. Glass Unpacking Loader

### 2) Glass 이재기

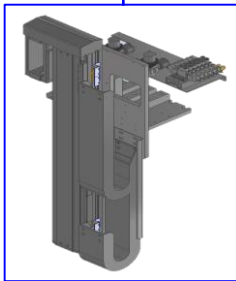


#### ■ Basic Specification

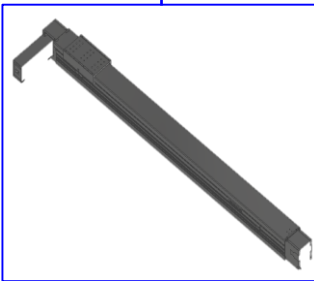
Item		Spec'	Remark
이재기 주행 Robot	Drive	S/Motor + Reducer	
	Driving Method	Belt + Pulley	
	Stroke	1500mm	TBD
이재기 Z축 Robot	Drive	S/Motor + Reducer	
	Driving Method	Ball Screw	
	Stroke	750mm	TBD
Glass Pick Up Unit	Frame	AL Profile + Square Pipe	
	Pick Up	Vacuum Pad	



Glass Pick Up Unit



이재기 Z축 Robot

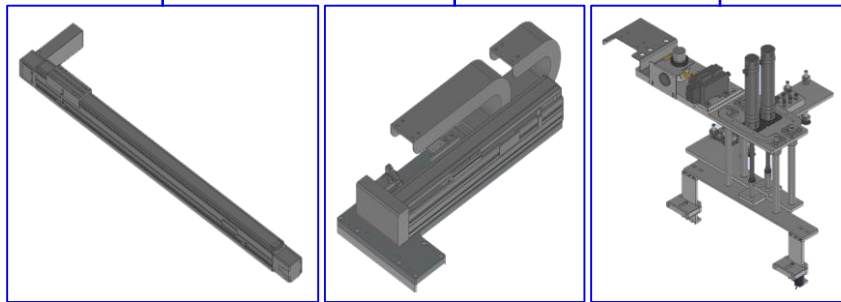
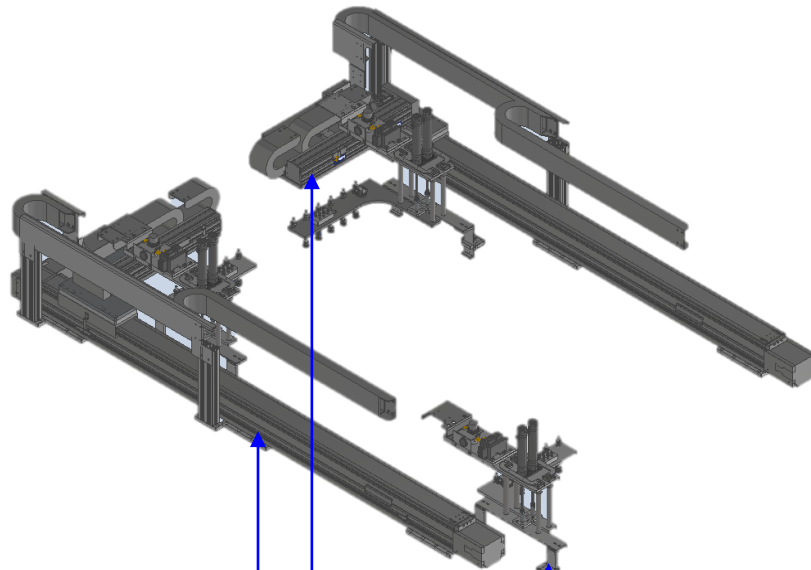


이재기 주행 Robot



## 2. Glass Unpacking Loader

### 3) 간지 및 Tray 이재기



이재기 주행 Robot

Pick Up Slide Robot

간지 및 Tray  
Pick Up Unit

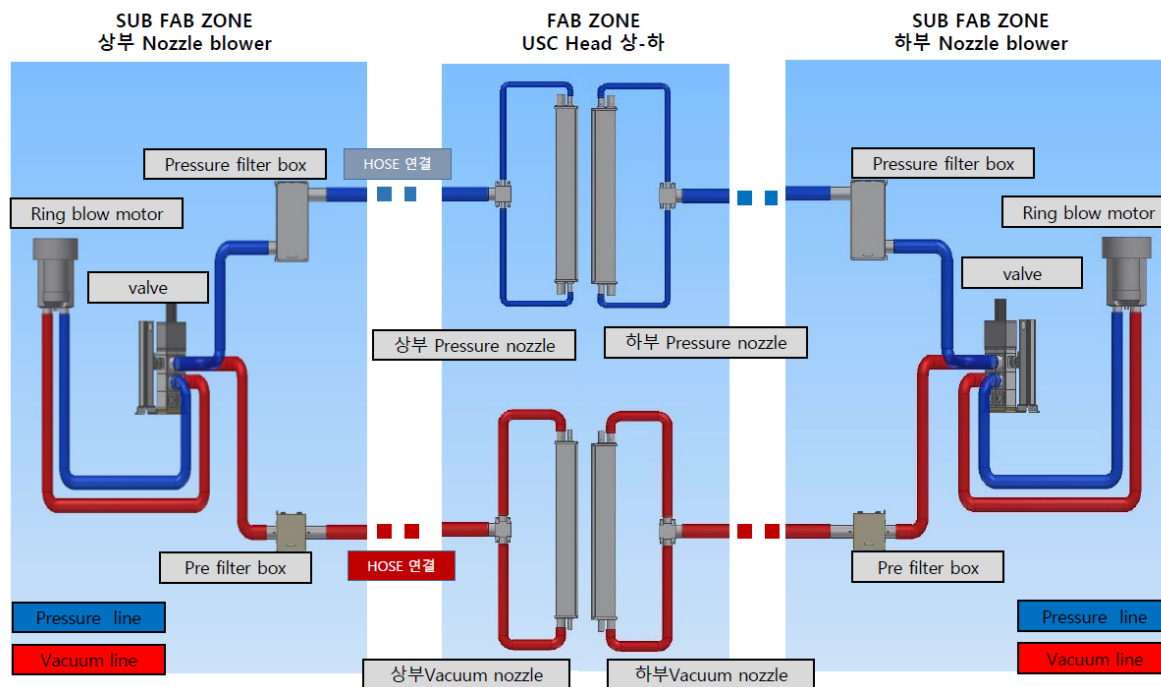
#### ■ Basic Specification

Item		Spec'	Remark
이재기 주행 Robot	Drive	S/Motor + Reducer	
	Driving Method	Belt + Pully	
	Stroke	2900mm	TBD
Pick Up Slide Robot	Drive	S/Motor + Reducer	
	Driving Method	Ball Screw	
	Stroke	100mm	TBD
간지 및 Tray Pick Up Unit	Drive	Cylinder + Ball Bush	
	Pick Up	Vacuum Pad	
	Stroke	150mm	TBD

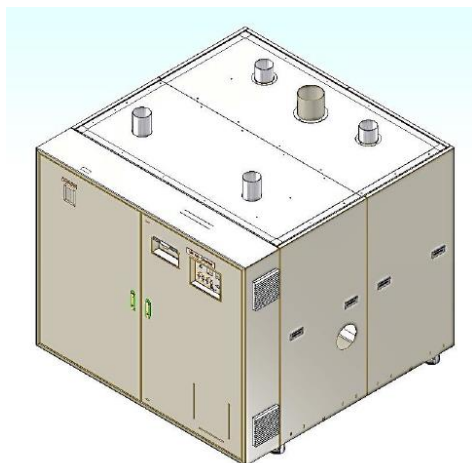


### 3. Ultra Sonic Cleaner(USC)

#### 1) USC Unit 구성도(참고용) (TBD)



#### 2) Blow Unit (TBD)



Item		Spec'	Remark
Ring Blower	Power	AC220V 3상 60Hz 4.6kw	
	Air Flow	10m3/min	
	Model	2RB 810-7AH26	TBD
Invertor	Power	AC220V 3상 60Hz 5.5kw	
	Model	CIMR-VT2A0040FAA	TBD
Filter	Vacuum	Pre Filter	
	Pressure	Hepa Filter	
Air		6kgf/cm2	



감사합니다.

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