CI-TECH

Creative Intelligent Technology Co., Ltd.

CI-TECH Always brings you more value !

2024

CI-TECH

Ulsan plant

- 12,000㎡ in Bancheon industrial complex
- Manufacturing(3 Bld), Assembly(2 Bld)
- Available large scale product (length 65m)
- Enable systematic production by separation of manufacture and assembly

CI-TECH

Busan plant

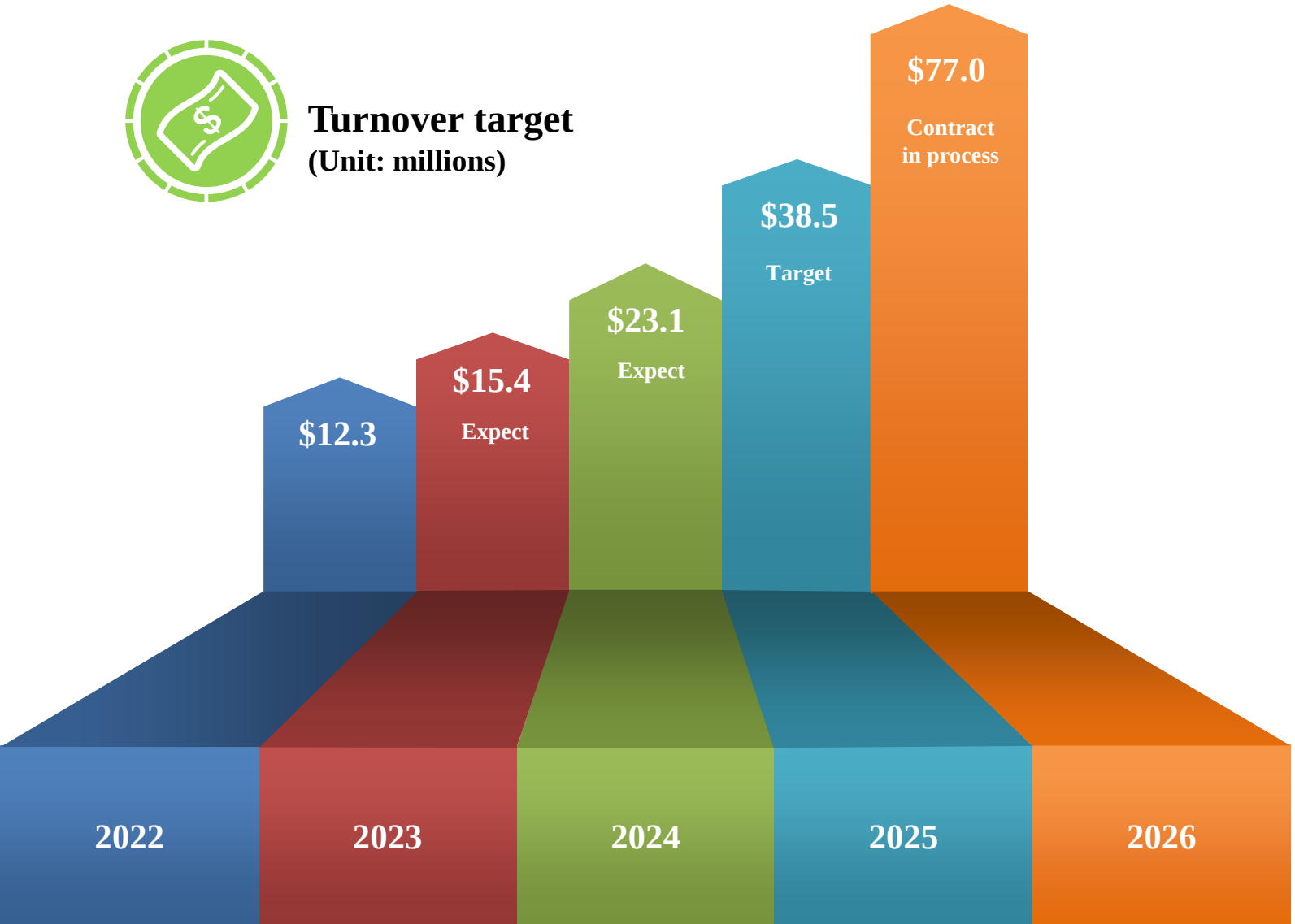
- 4,000㎡ in Hwajeon industrial complex
- Suitable for quality control by separation of production and assembly space
- Self-controllable electrical/ control unit

CI-TECH Overview

Company	CI-TECH Co., Ltd. (CEO: YS Jeon, JH Lee)
Location (HQ)	32, Hwajeon Sandan 5-ro 48beon-gil, Gangseo-gu, Busan
Location(plant)	80-67, Bancheonsaneop-ro, Eonyang-eup,Ulju-gun, Korea
Main products	Secondary battery equip., Industrial machinery & equip.
Establishment	Mar. 19 2012
Turnover	U$13.0 million (2023)
Company type	Corporate (Venture company)
R&D	Research institute (Est. Nov. 27 2015)

CI-TECH Sales trend

Turnover target
(Unit: millions)

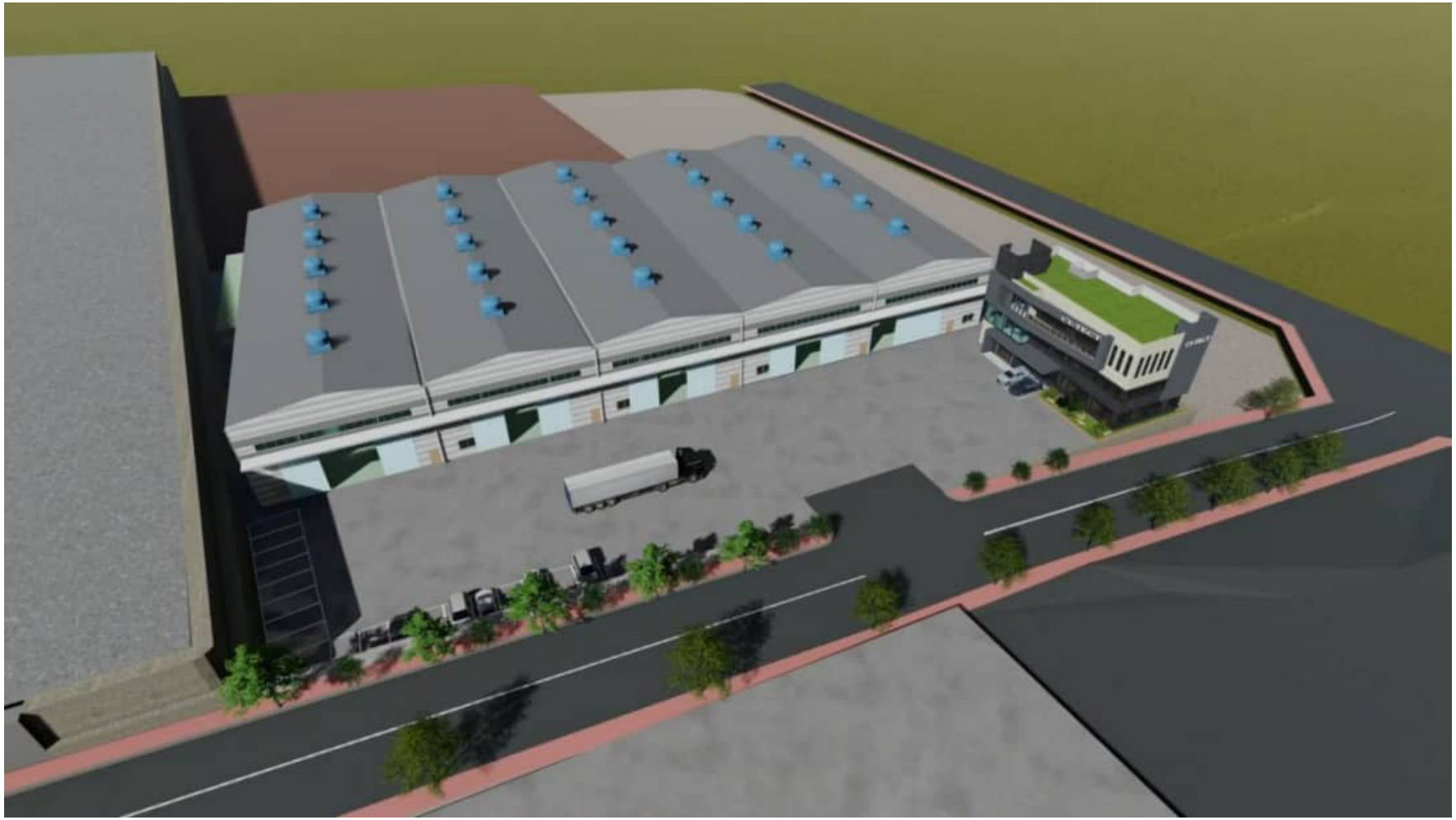


Number of deliveries
More than 50 per year

Customers
More than 30 large and medium-sized companies

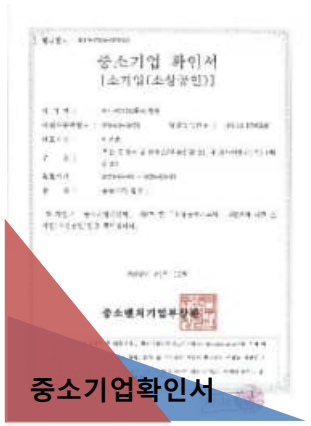
CI-TECH Overview

CI-TECH　Moving picture



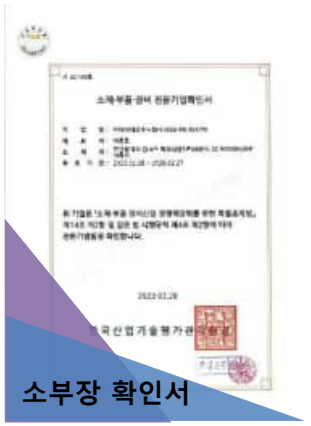
CI-TECH Patents

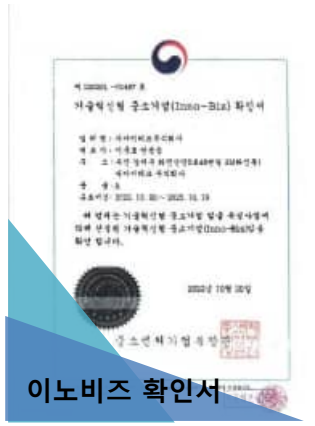
CI-TECH Certificates


중소기업확인서


벤처기업확인서


기업부설연구소

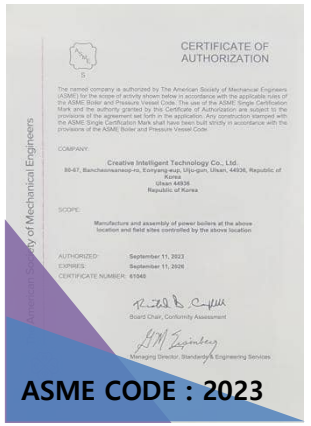

소부장 확인서


이노비즈 확인서


ISO 9001 : 2015

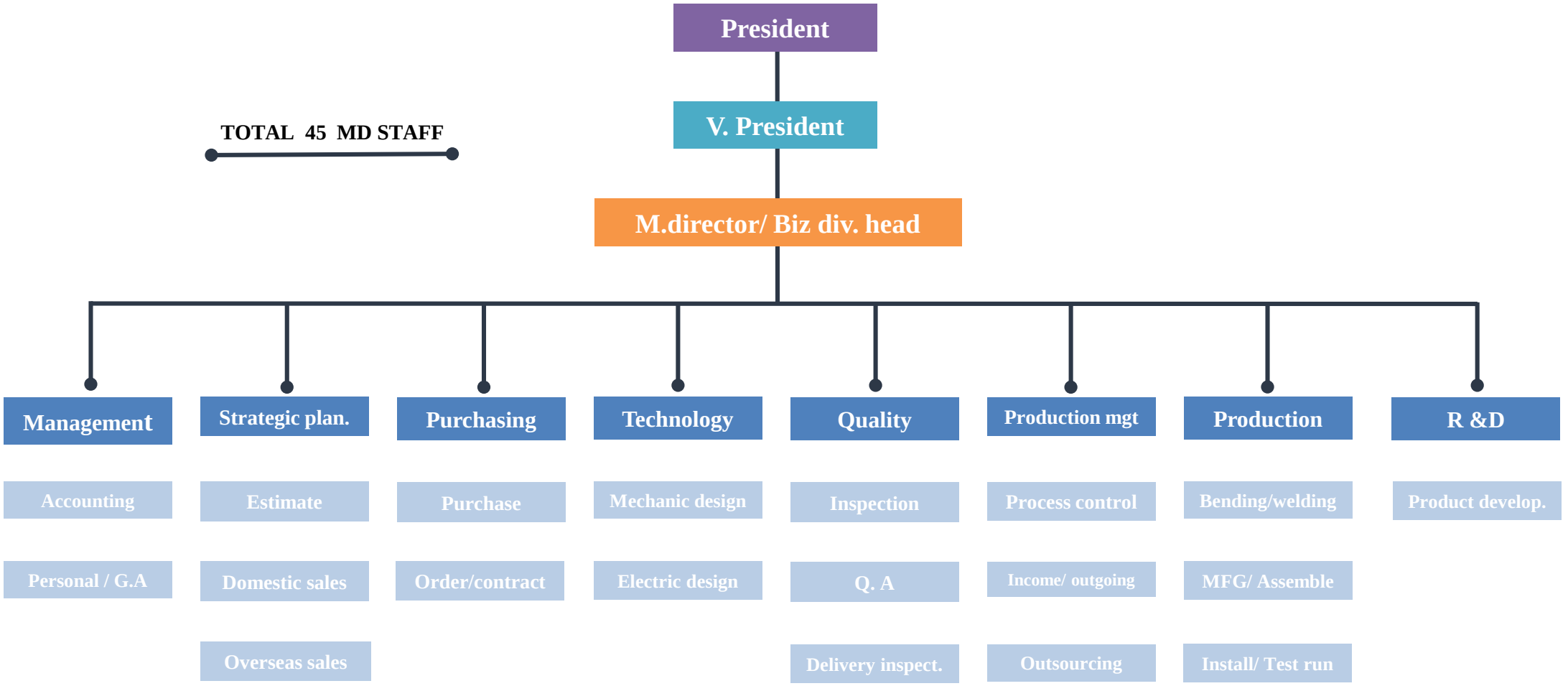

ISO 14001 : 2015


ISO 45001 : 2015


ASME CODE : 2023


ASME CODE : 2023

CI-TECH Organization



CI-TECH References for Cathode materials

No.	Customer	Date	Factory	Contents	Facility	Equipment	Remark
1	L&F	2016~2019	Waegwan factory	1~4 LINE	○	○	CI-TECH
2			Daegu factory	D1~D6 LINE	○	○	
3				Lithium hydroxide crushing line	○	○	
4				Rotary KILN LINE	○	○	
5			Gimcheon factory	ROTARY DRYER 2SET	○		
6				Washing LINE	○	○	
7			Guji factory 1	1LINE	○	○	
8	Samsung SDI	2017~2019	Ulsan factory	Ceramic Piping and Ball Valves	○		
9	EcoproGEM	2017~2019	CPM1	ROTARY KILN	○		8SET
10	EMT	2019. 02	Chungju factory	ROTARY KILN	○		2SET
11	Ecopro BM	2019. 08	CAM5	ROTARY COOLER	○	○	6SET
12	COSMO AM&T	2020. 10	Chungju factory	Washing DRYER	○	○	Lodige Dryer 2SET
13	Samsung STM	2021. 01	Ulsan factory	Mix-crushing LINE	○	○	Renovation
14	L&F	2021. 10	Guji factory 2	N.crushing-packing LINE	○	○	
15	Ecopro BM	2022. 01	CAM5N, CAM7	ROTARY COOLER	○	○	15SET
16	Samsung STM	2022. 08	Ulsan factory	12-2 crushing LINE	○	○	
17	L&F	2022. 10	Guji factory 2	Separate Line (Bld. A)		○	

CI-TECH China factory (BHT)

Company	Changzhou Best High Tech Intelligent Equipment Co., Ltd
Establishment	Aug. 28 2018
Companty type	Limited partnership (BAI LI & CI-TECH)
Capital	1000万 RMB (U$1.5 million)
Turnover	U$ 46.0 million (2021-2022)

China factory (BHT) Management record

RMB 33 million

KRW 60 billion
(2021 Sales)

More than 30

China customer

More than 200 cases

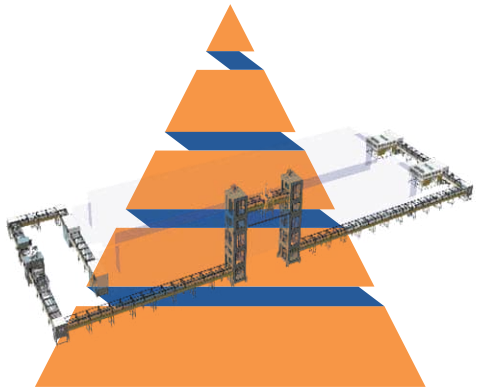
2021 delivery

4 Month

Lead time
(10 Production line)

Major business areas

- Design & Engineering of secondary battery production line(Cathode material)
- Mfg & installation of the equipments related secondary battery(Cathode material)
- Supply of consumable materials for sintering equipment (SiC Heater, Sagger, Roller etc.)



CI-TECH 4 major core competitiveness

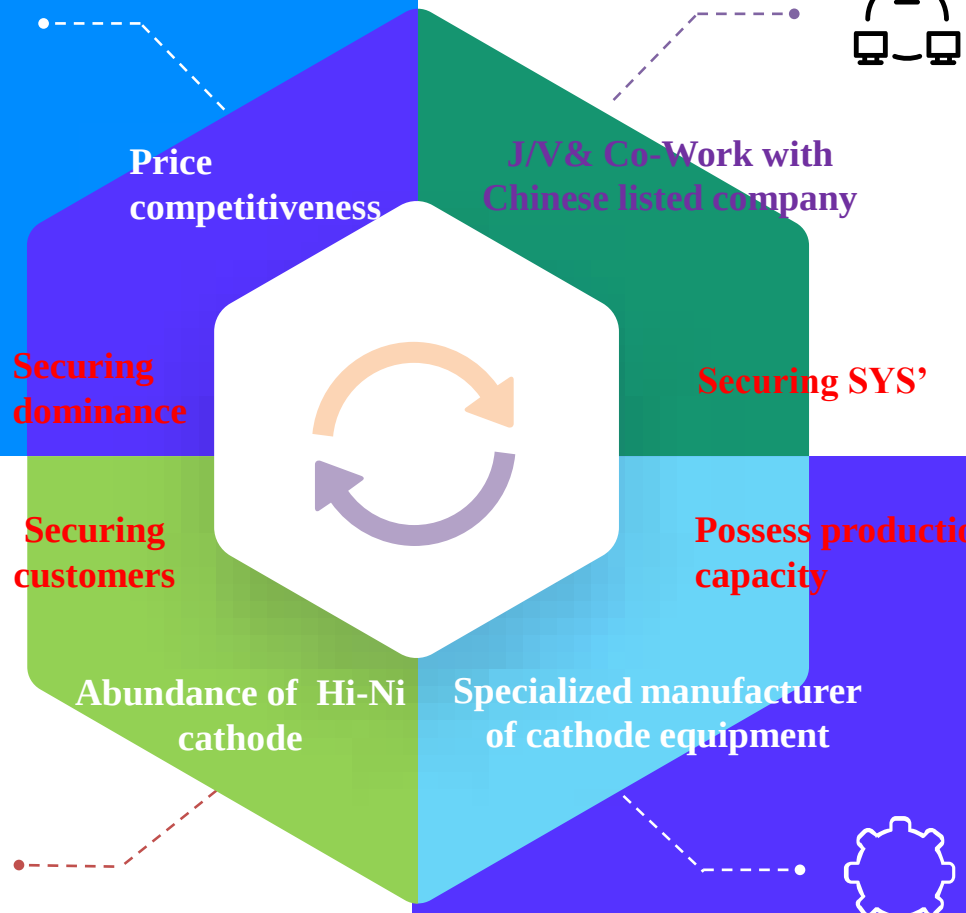
Cathode, Anode, Precursor sintering process

China's most competitive automated logistics equipment company

Price competitiveness

J/V& Co-Work with Chinese listed company

Develop synergy effect through J/V with Chinese Anode and Cathode Turnkey company



Absolute necessity of Hi-Ni market

Possession of equipment technology
(VFP, Roedige Dryer, Rotary Dryer& Cooler)

In-house production via 2 plants

Securing quick-response ability to customers

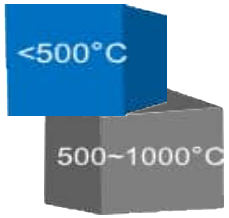
01 CI-TECH Major cathode equipment

- **Main equipment**
- **Auxiliary equipment**
- **Conveyor system (BHT)**

1. ROTARY KILN & COOLER

Application

Temperature design to suit product and customer needs



Materials

SUS304/SUS316L/SUS310S

CERAMIC / CERAKWOOL

A S M C

Shape

Size design suitable for production capacity.

Kilin tube design reflecting efficiency and characteristics.

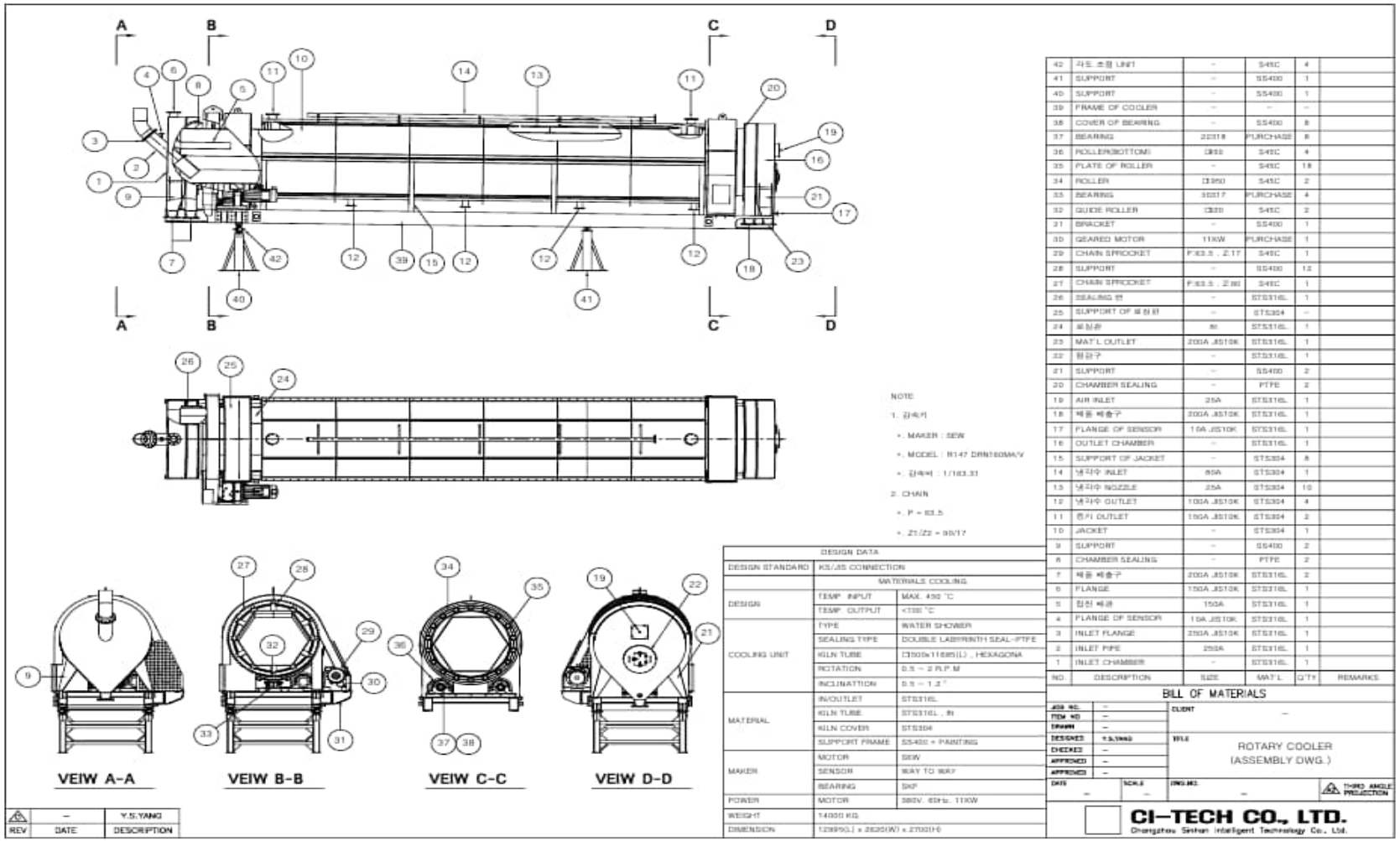
0 6 8

Continuous and Stable

Continuous management and A/S after delivery

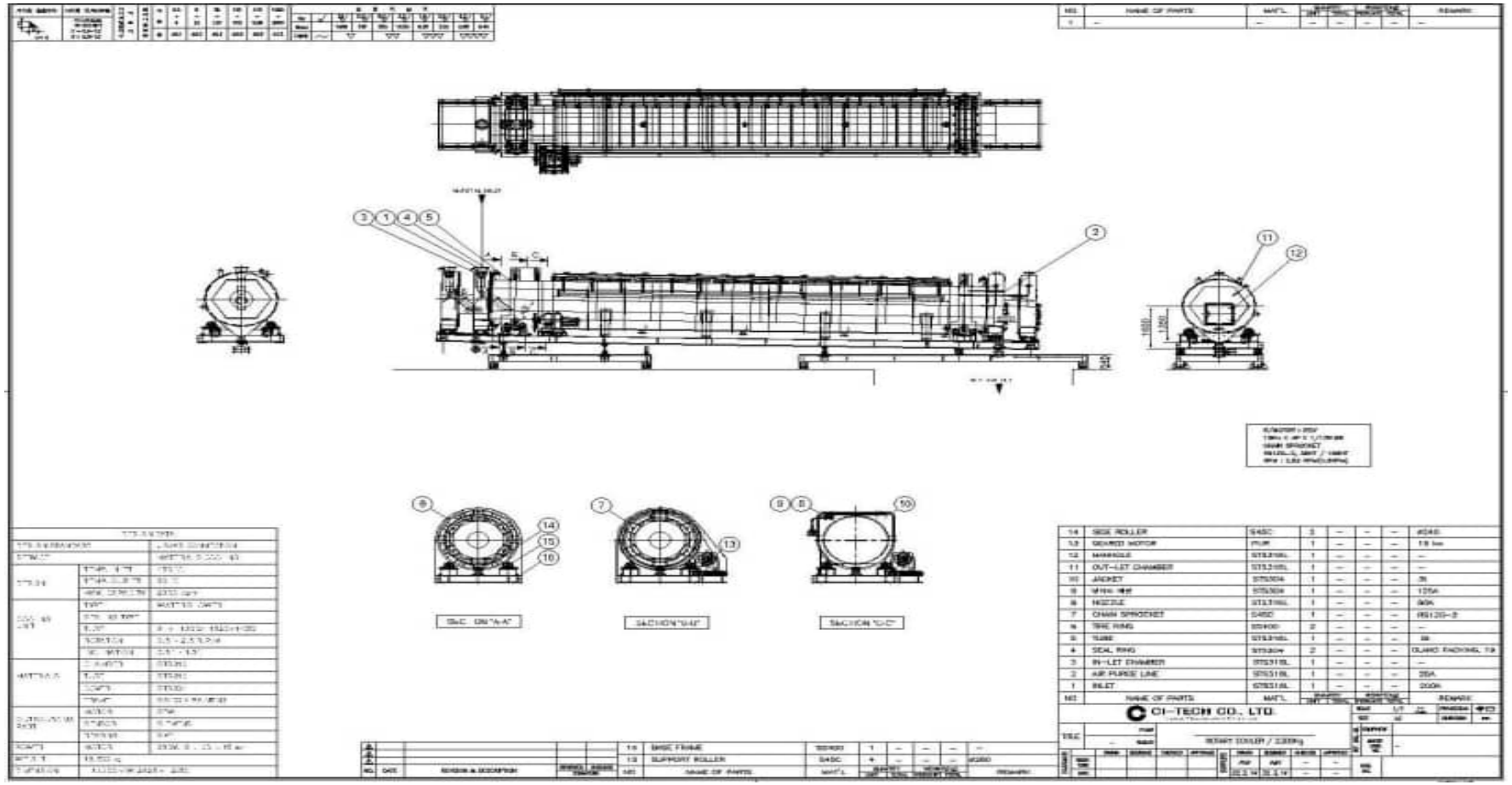
1. Rotary Dryer & Rotary Kiln

Rotary Dryer



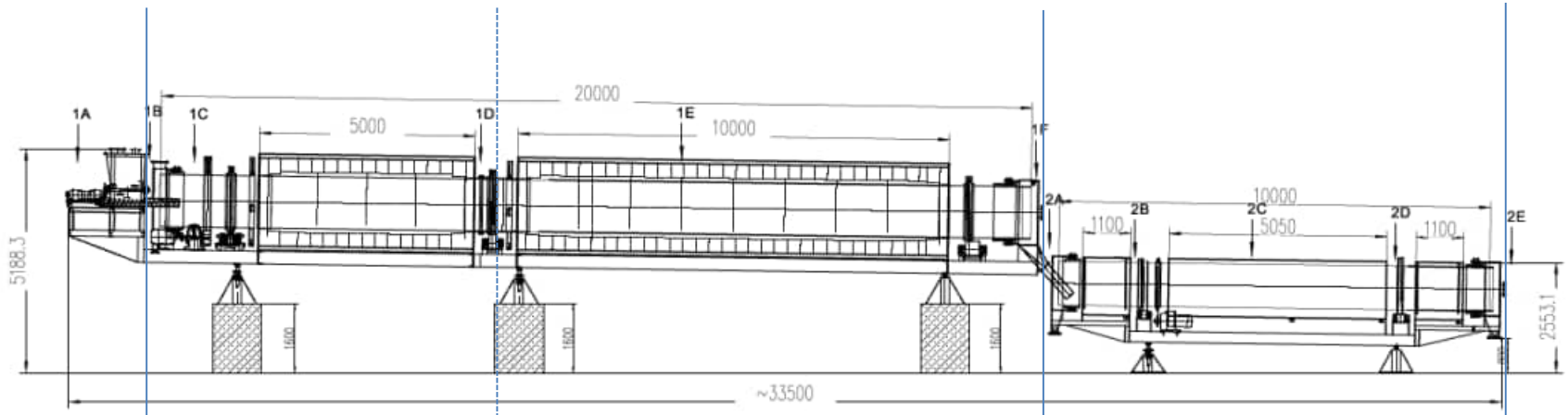
1. Rotary Dryer & Rotary Kiln

Rotary Cooler



1. Rotary Dryer & Rotary Kiln

Rotary Dryer / Kiln / Cooler System



Feeding System

- Screw Feeder
- Vibrator

Pre heating zones

High Temp heating zones

Heating System

- Kiln tube
- Driving unit: Motor / Chain / Bearing
- Heating unit: Heater / Insulation treat.
- Sensor unit: Thermocouple / Instrumentation

Cooling System

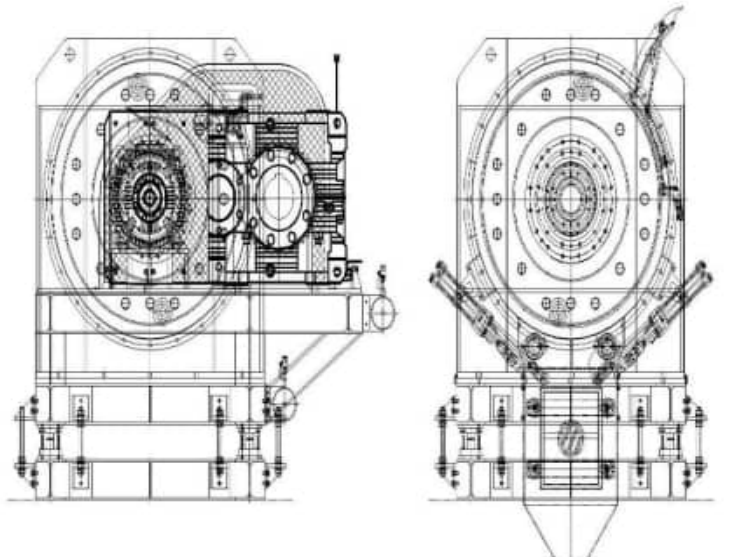
- Kiln tube
- Driving unit: Motor/Chain/Bearing
- Cooling unit: Water / Air

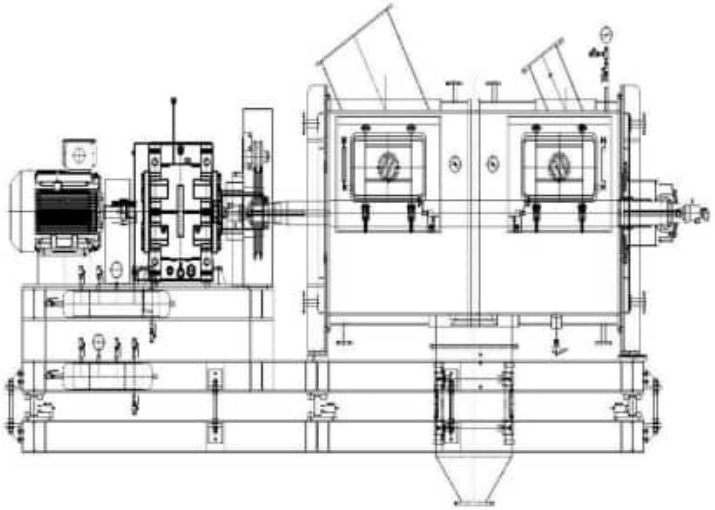
1. Rotary Dryer & Rotary Kiln

Rotary Dryer & Cooler references

No.	AREA	CUSTOMER	QTY	REMARK
1	KOREA	EcoproBM (Rotary Cooler)	15	2022. 01
2		EcoproBM (Rotary Cooler)	6	2020. 08
3		EcoproGEM (Rotary dryer)	8	2019. 11
4		E.M.T (Rotary dryer)	2	2019. 03
5		L&F (Rotary dryer)	2	2015
TOTAL			33	

2. Loedige Dryer Mixer





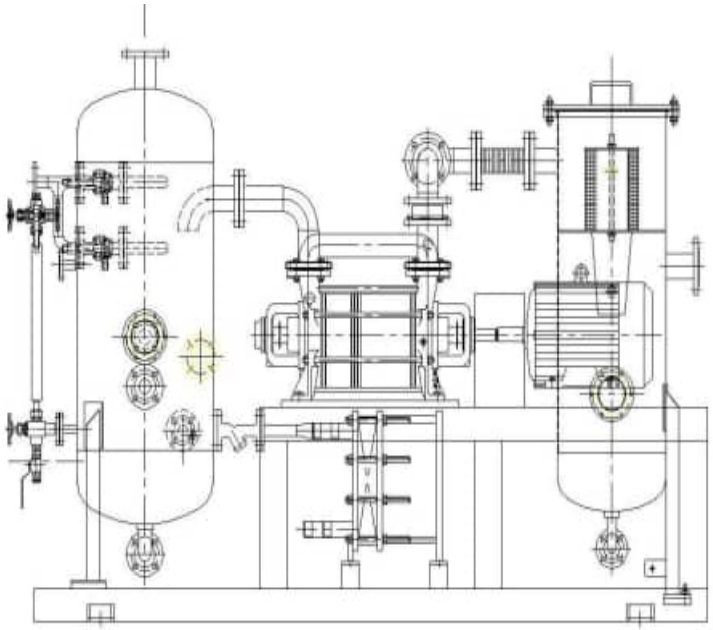
2. Loedige Dryer Mixer

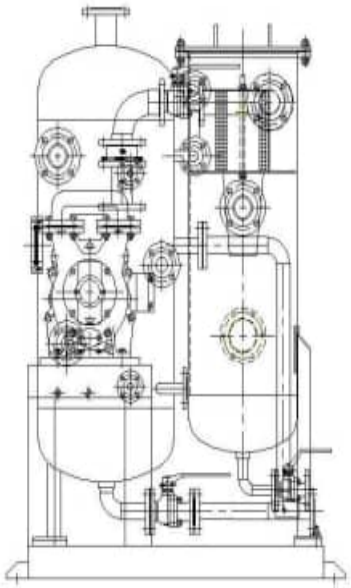
Item	Unit	Specification
CAPACITY	LITTER	FULL : 3,000 – 7,000 WORKING : 1,500 – 3,500
HEATING TYPE		JACKET TYPE (HOT OIL)
TEMP	℃	MAX 350 (HOT OIL)
SEAL		AIR PURGE SEAL TYPE (OIL SEAL + LIP SEAL)
IMPELLER TYPE		SHOVEL TYPE (W.C COATED – 300um)
POWER	Kw	37Kw , 6P , VVVF
IMPELLER SPEED	RPM	Min 4 MAX 20
COOLING SYSTEM		SHAFT , BEARING , REDUCER , DRAIN VALVE

2. Loedige Dryer Mixer

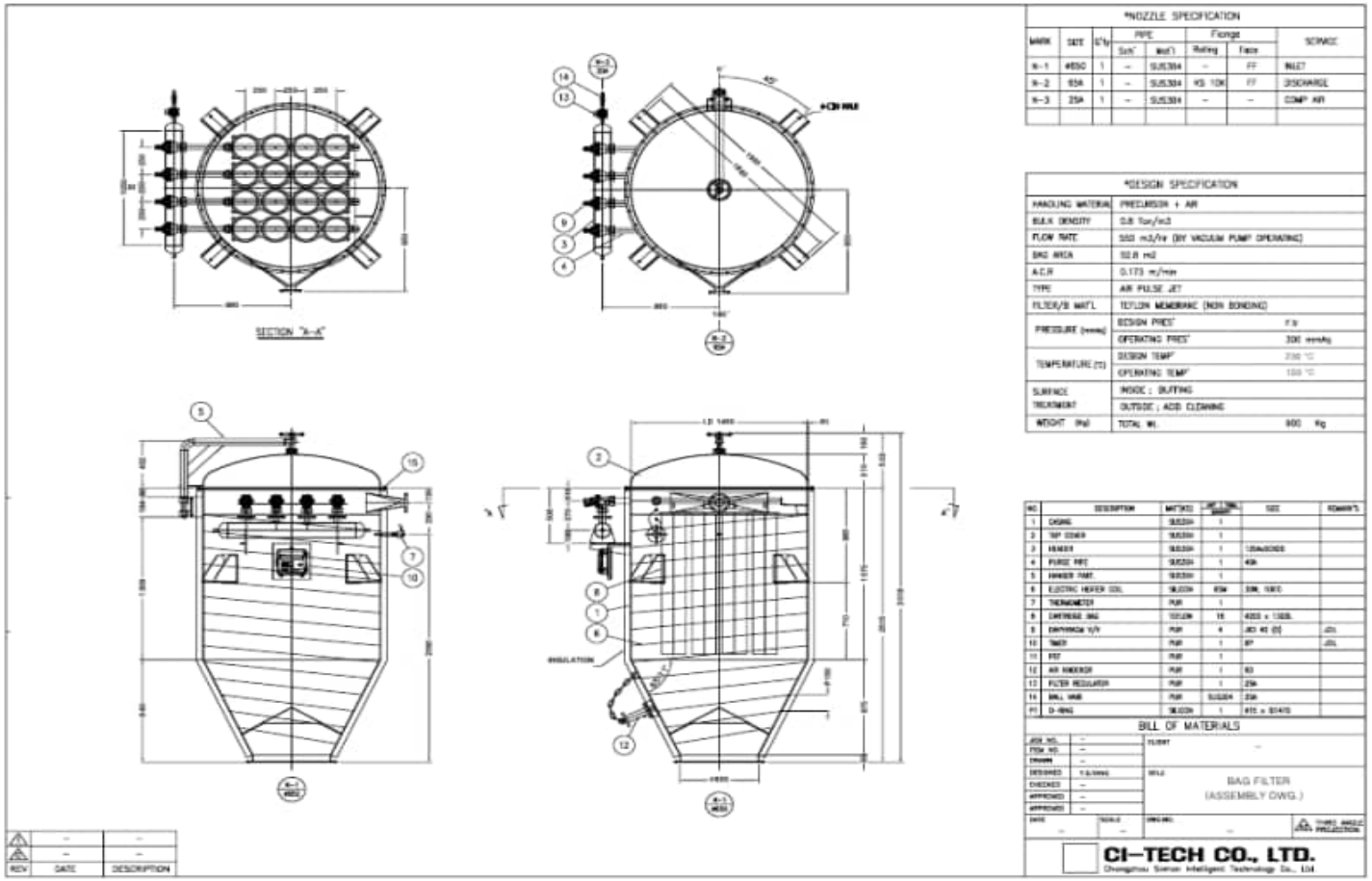
Vacuum System

Item	Specification
VACUUM PUMP	550m3/hr , 22kw , 4P , VVVF
HEATING TYPE	JACKET TYPE (HOT OIL)
HEAT EXCHANER	45,000 kcal/hr, STS304, PLATE TYPE
SEAL WATER TANK	80 Liter, STS304, S/G
ACCESSORRIES	AUTO VACUUM VALVE CONTROL VACUUM VALVE LEVEL GAUGE/SWITCH ETC.





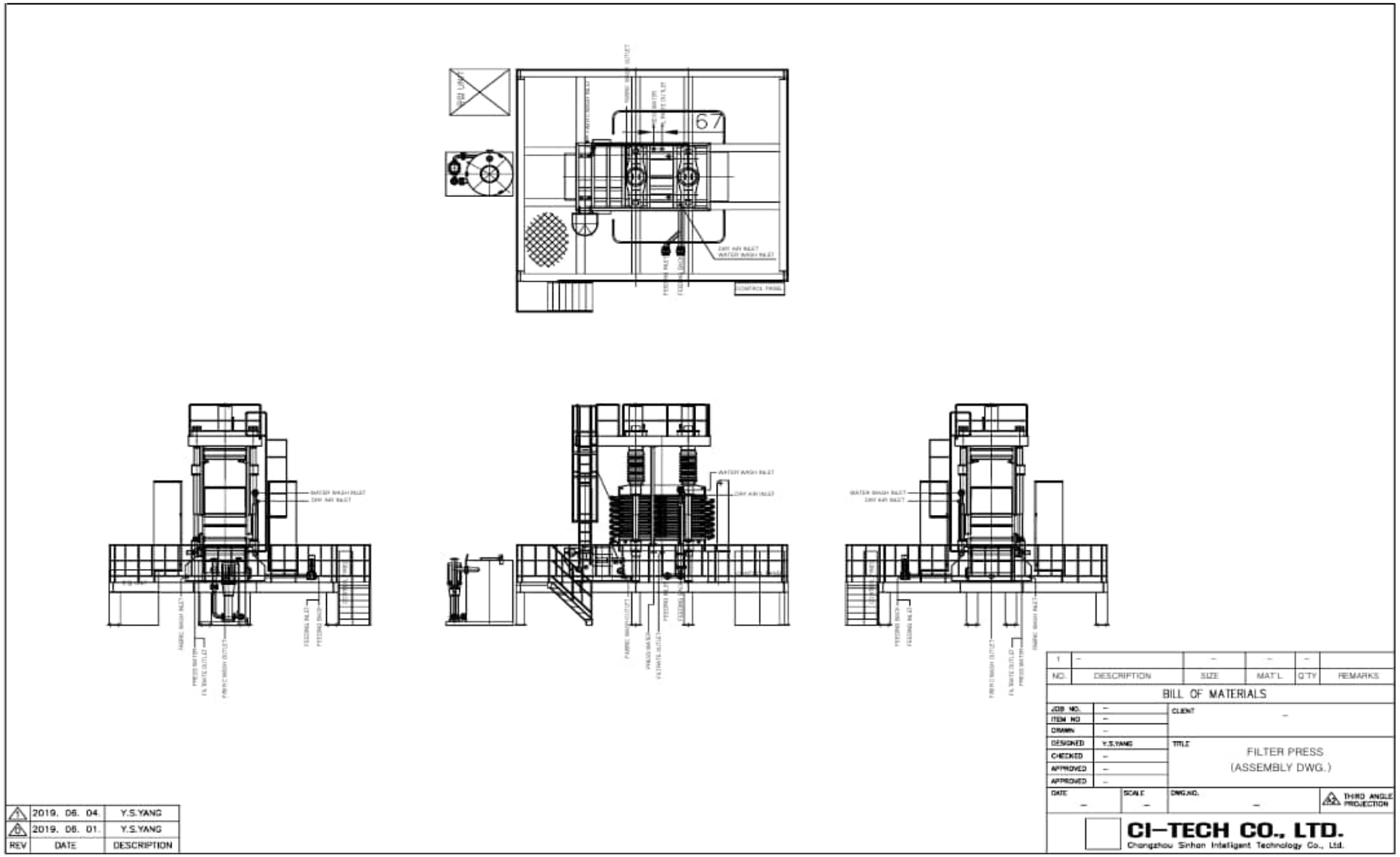
2. Loedige Dryer Mixer (Dust Collector)



3. VFP (Vertical Filter Press)

Item	Specification
Filter PLATE	2620×1200×90mm
Total filtration area	35㎡
Effective filtration area (1stage)	2.5㎡
PLATE effective depth	38mm
PLATE Q'ty	14 EA
PLATE material	PP
Working pressure (MPa)	Pressing: 1.2 ~ 1.5
	Air drying: 0.8
	Washing: 1.25
Total weight	33 Ton
External dimension	4990×4000×5475mm

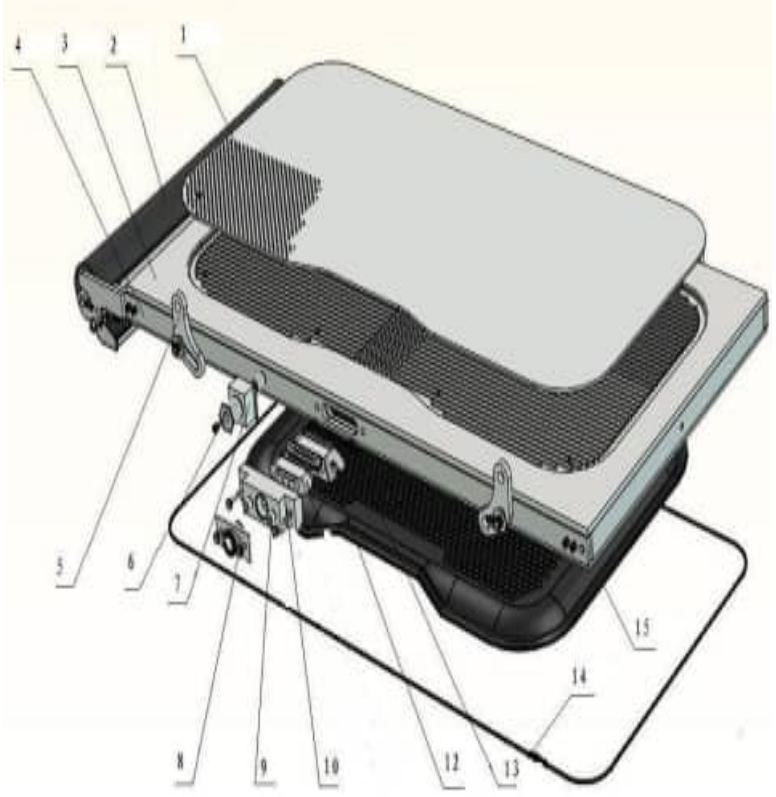
3. VFP (Vertical Filter Press)



3. VFP(Vertical Filter Press)

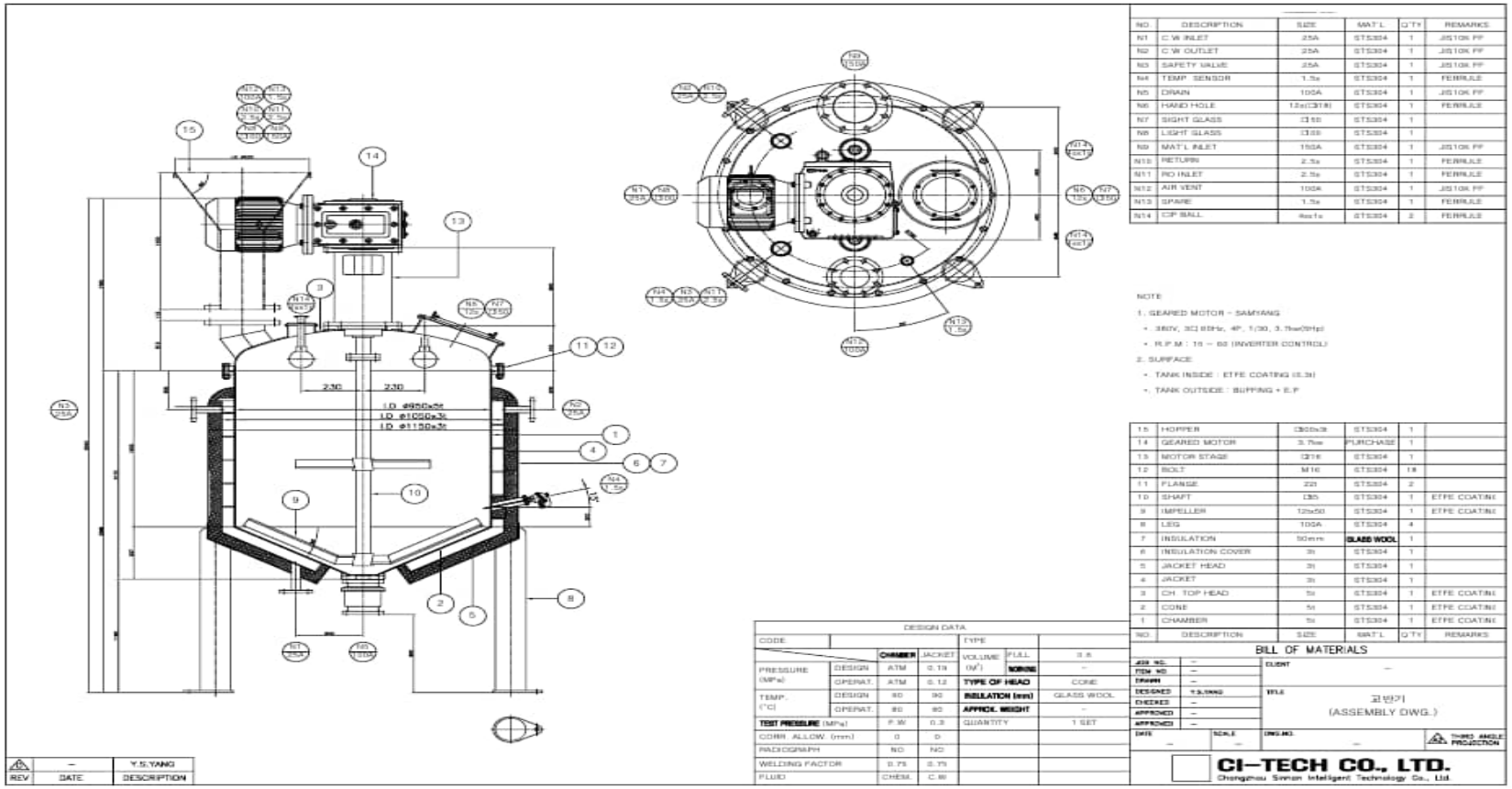
Filter plate structure

No.	Parts
1	FILTER SCREEN
2	FITER CLOTH GUIDE ROLLER
3	MASTER PLATE
4	LEFT / RING FRAME
5	HANGING PLATES
6	ECCENTRIC BUSHING
7	LOCATED BLOCK
8	FEED NOZZLE
9	SCREW THREAD NET
10	FEEDING NOZZLE SUPPORT
11	INLET
12	INLET SEALING STRIP
13	SEALING STRIP
14	MEMBRANE



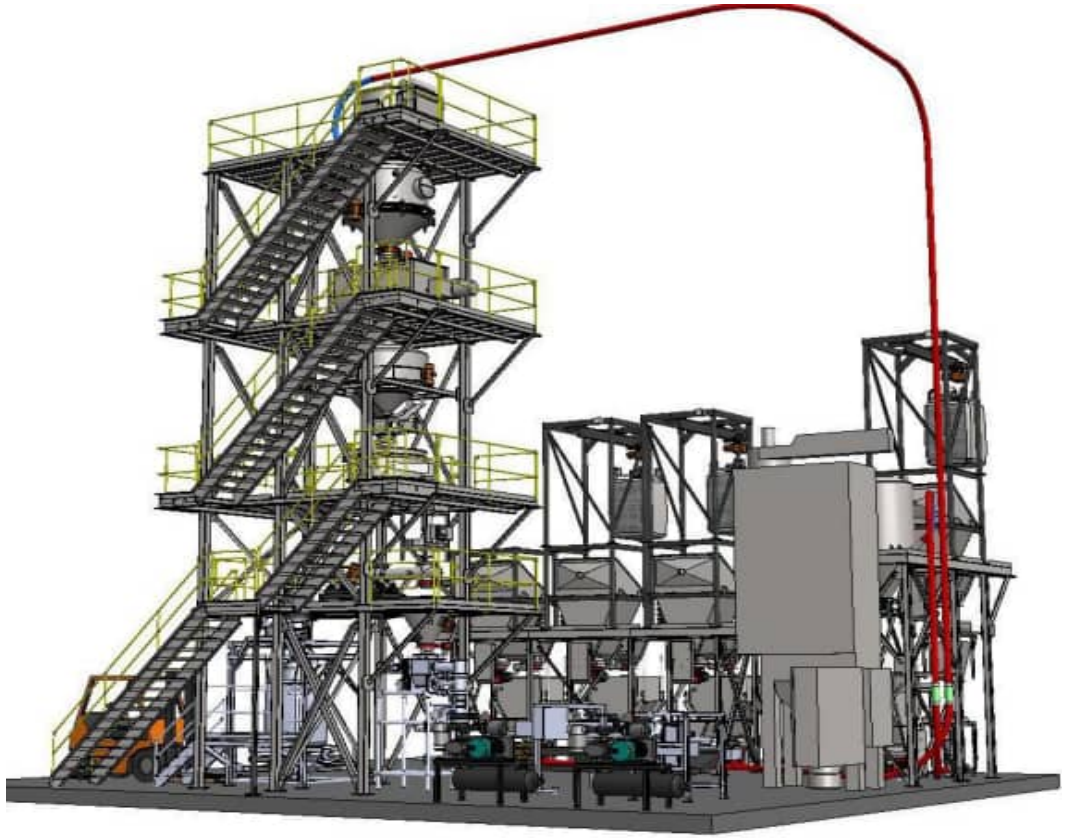
3. VFP(Vertical Filter Press)

Mixing tank (Washing process)



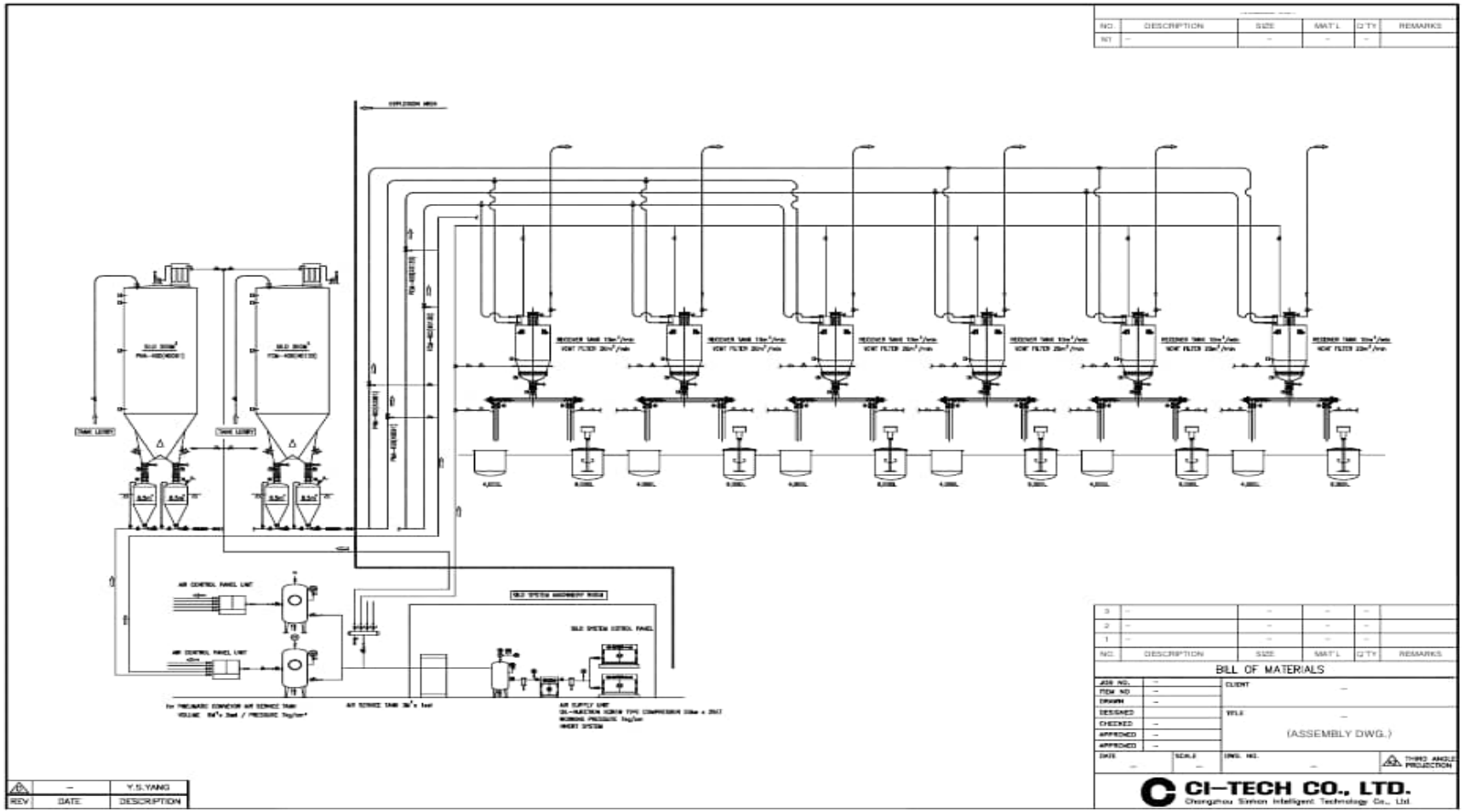
4. Pneumatic conveying line design and construction

Pneumatic Conveying System



4. Pneumatic conveying line design and construction

Pneumatic line design



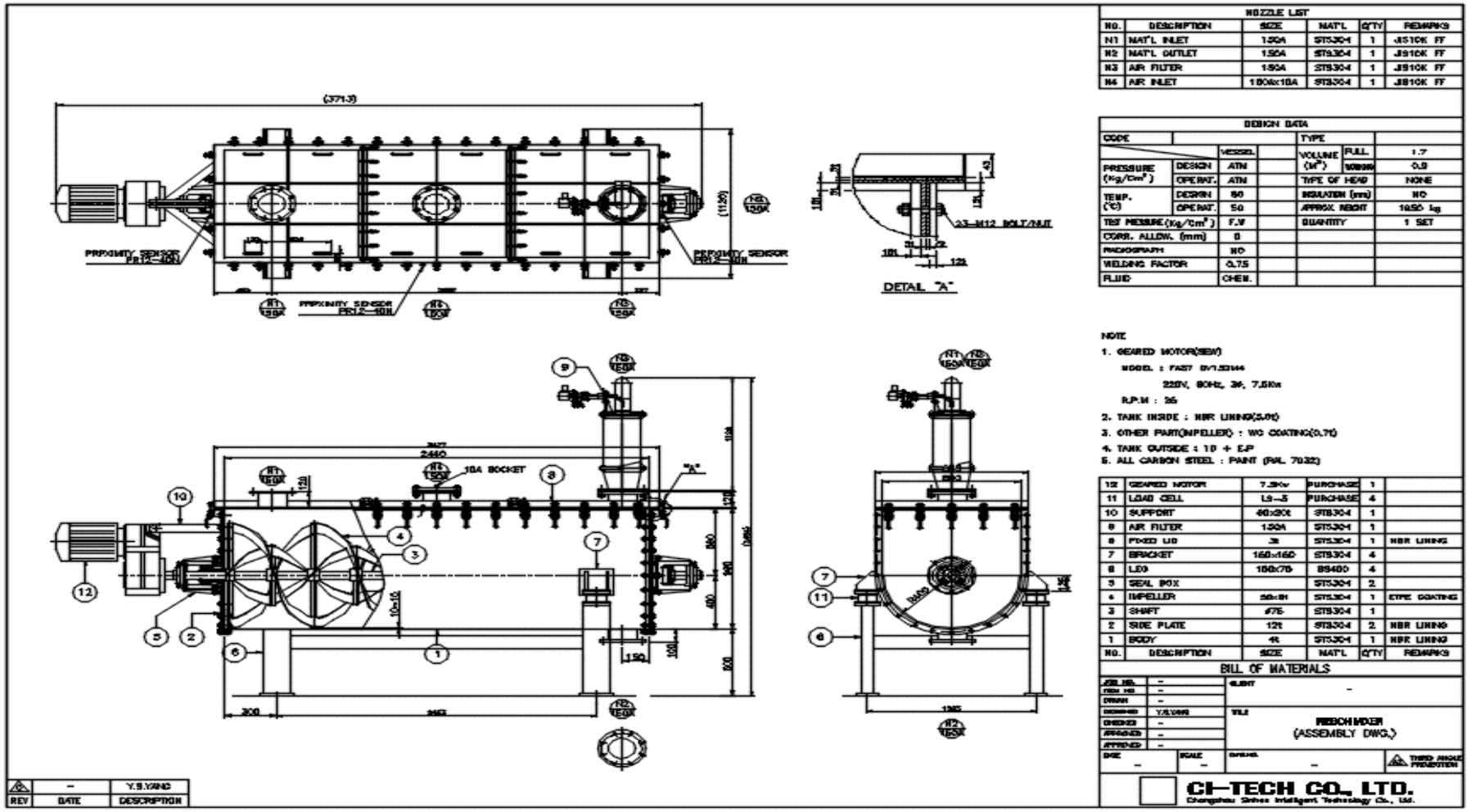
4. Pneumatic conveying line design and construction

Ceramic pipe & Ball valve

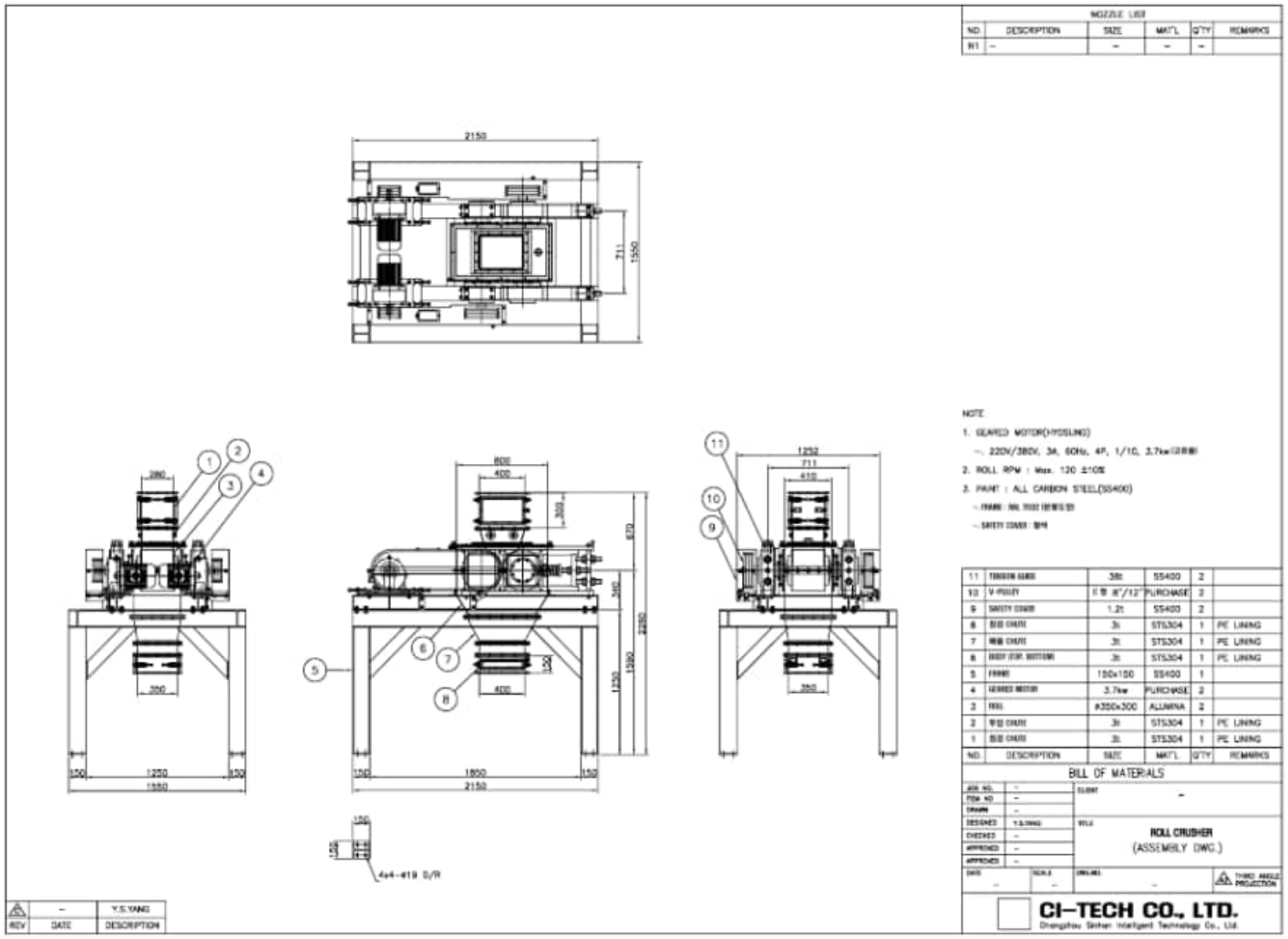
Ceramic pipe

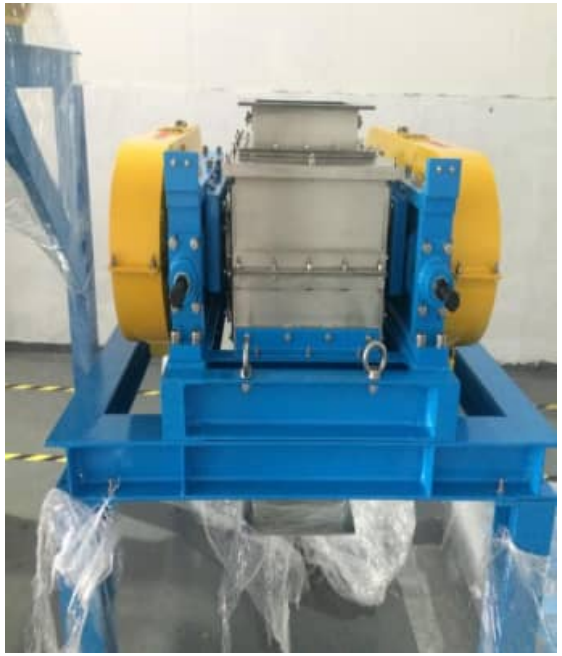
Ceramic Ball valve

5. Ribbon Mixer

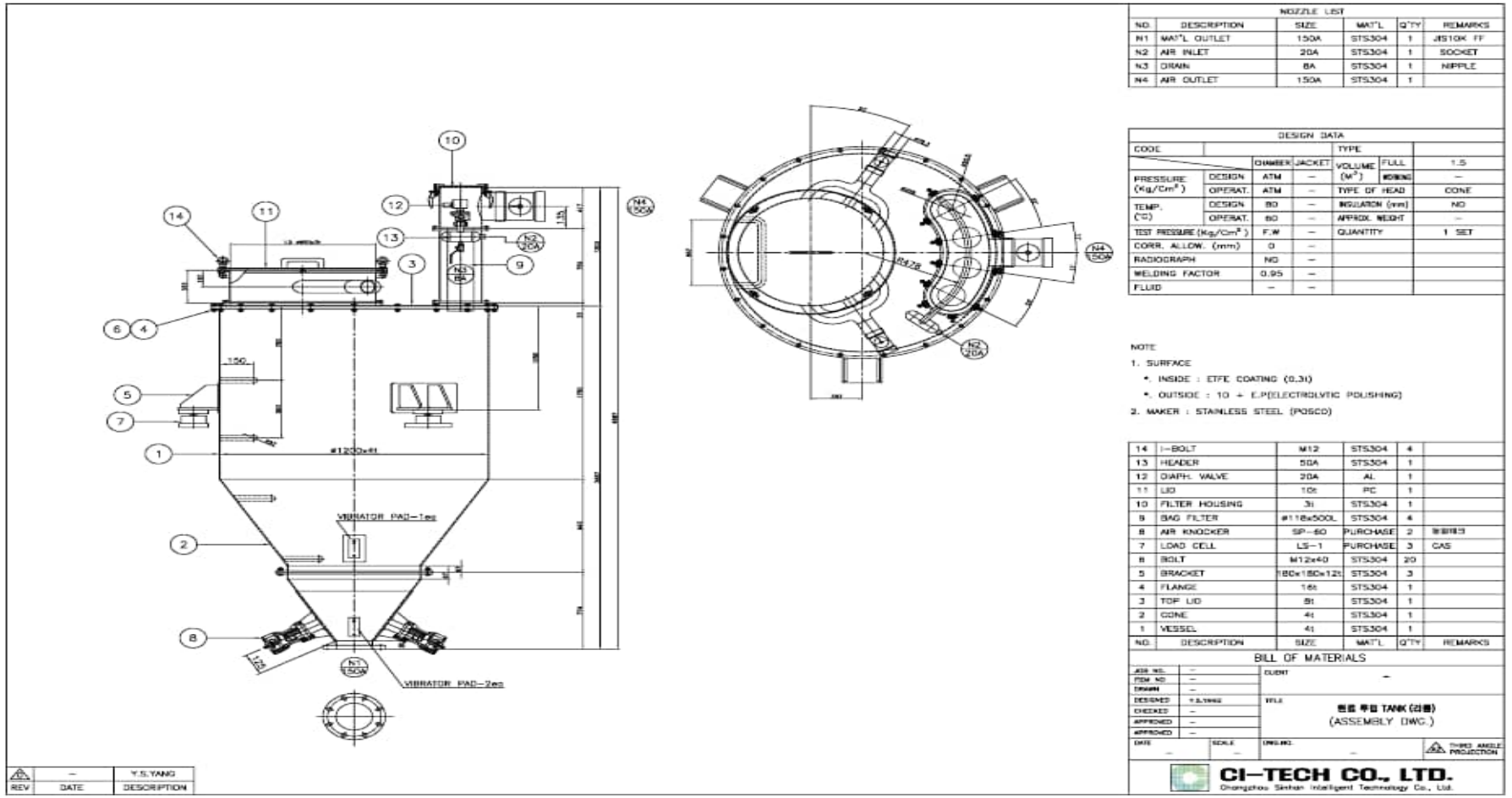


6. Roll Crusher





7. Tanks (Vessel, Hopper)



NOZZLE LIST

NO.	DESCRIPTION	SIZE	MAT'L	Q'TY	REMARKS
N1	MAT'L OUTLET	150A	STS304	1	JIS10K FF
N2	AIR INLET	20A	STS304	1	SOCKET
N3	DRAIN	8A	STS304	1	NIPPLE
N4	AIR OUTLET	150A	STS304	1	

DESIGN DATA

CODE				TYPE		
		CHAMBER	JACKET	VOLUME (M^3)	FULL	1.5
PRESSURE (Kg/Cm^2)	DESIGN	ATM	–		WORKING	–
	OPERAT.	ATM	–	TYPE OF HEAD		CONE
TEMP. (°C)	DESIGN	80	–	INSULATION (mm)		NO
	OPERAT.	60	–	APPROX. WEIGHT		–
TEST PRESSURE (Kg/Cm^2)		F.W	–	QUANTITY		1 SET
CORR. ALLOW. (mm)		0	–			
RADIOGRAPH		NO	–			
WELDING FACTOR		0.95	–			
FLUID		–	–			

NOTE

1. SURFACE
   - *. INSIDE : ETFE COATING (0.3t)
   - *. OUTSIDE : 1D + E.P(ELECTROLYTIC POLISHING)
2. MAKER : STAINLESS STEEL (POSCO)

14	I-BOLT	M12	STS304	4	
13	HEADER	50A	STS304	1	
12	DIAPH. VALVE	20A	AL	1	
11	LID	10t	PC	1	
10	FILTER HOUSING	3t	STS304	1	
9	BAG FILTER	#118x500L	STS304	4	
8	AIR KNOCKER	SP-60	PURCHASE	2	
7	LOAD CELL	LS-1	PURCHASE	3	CAS
6	BOLT	M12x40	STS304	20	
5	BRACKET	180x150x12t	STS304	3	
4	FLANGE	16t	STS304	1	
3	TOP LID	8t	STS304	1	
2	CONE	4t	STS304	1	
1	VESSEL	4t	STS304	1	
NO.	DESCRIPTION	SIZE	MAT'L	Q'TY	REMARKS

BILL OF MATERIALS

JOB NO.	–
ITEM NO	–
DRAWN	–
DESIGNED	Y.S.YANG
CHECKED	–
APPROVED	–
APPROVED	–
DATE	–
SCALE	–
DWG.NO.	–
CLIENT	–
TITLE	원료 투입 TANK (2종) (ASSEMBLY DWG.)

THIRD ANGLE PROJECTION

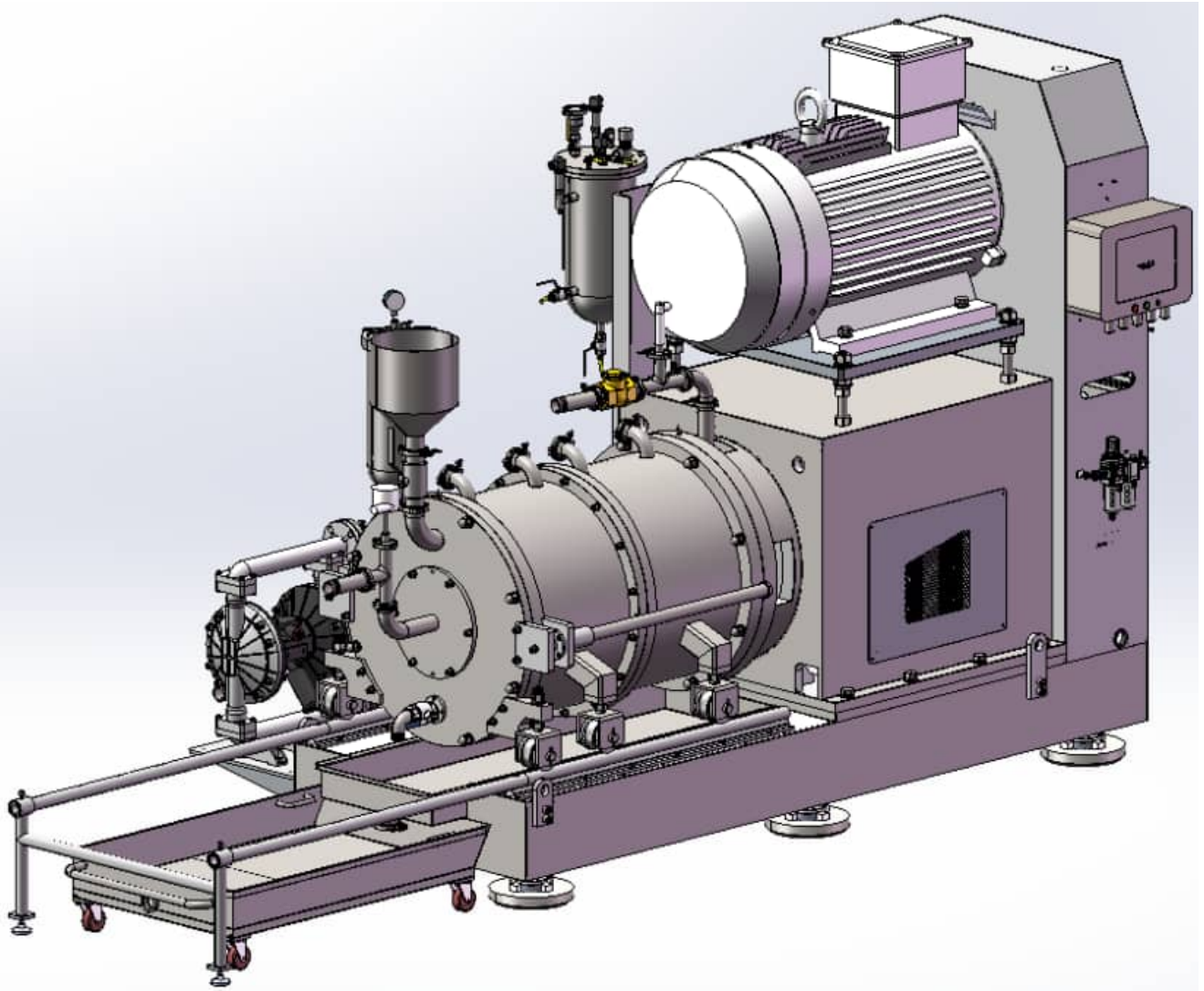
CI-TECH CO., LTD.
Changzhou Sinhan Intelligent Technology Co., Ltd.

REV	DATE	DESCRIPTION
1	–	Y.S.YANG

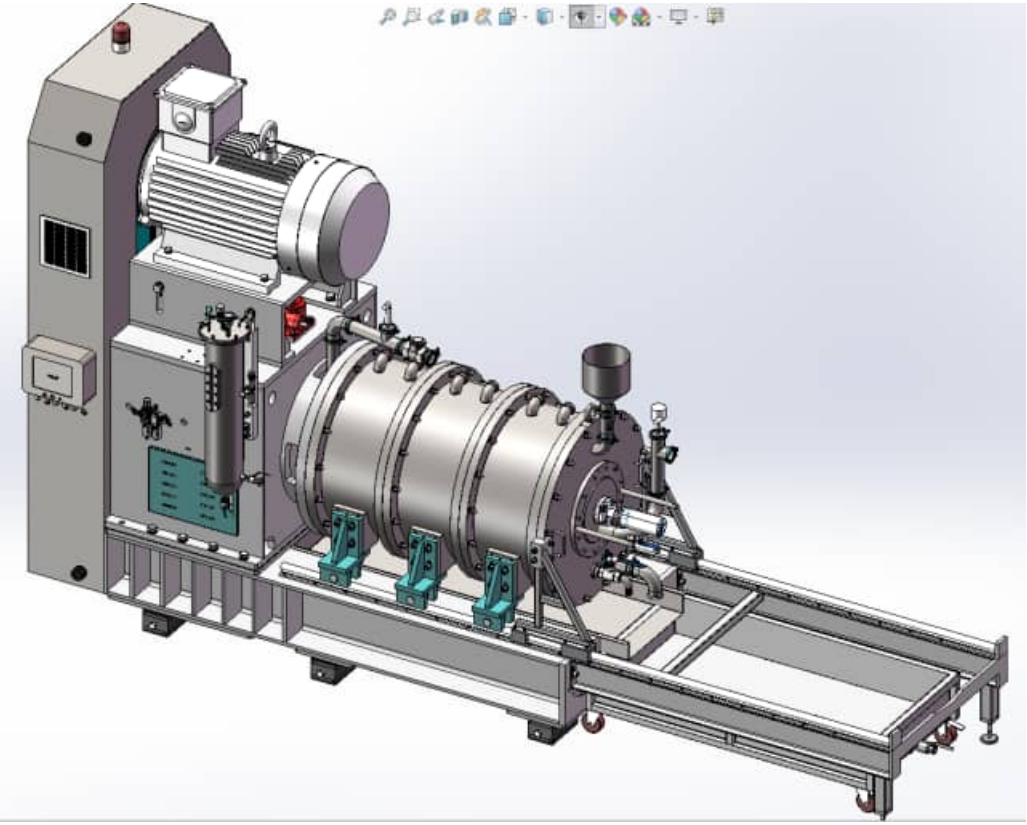
8. 3-Axis Compct Mixer

9. Spray dryer

10. Bead mill (400L)



10. Bead mill (150L)

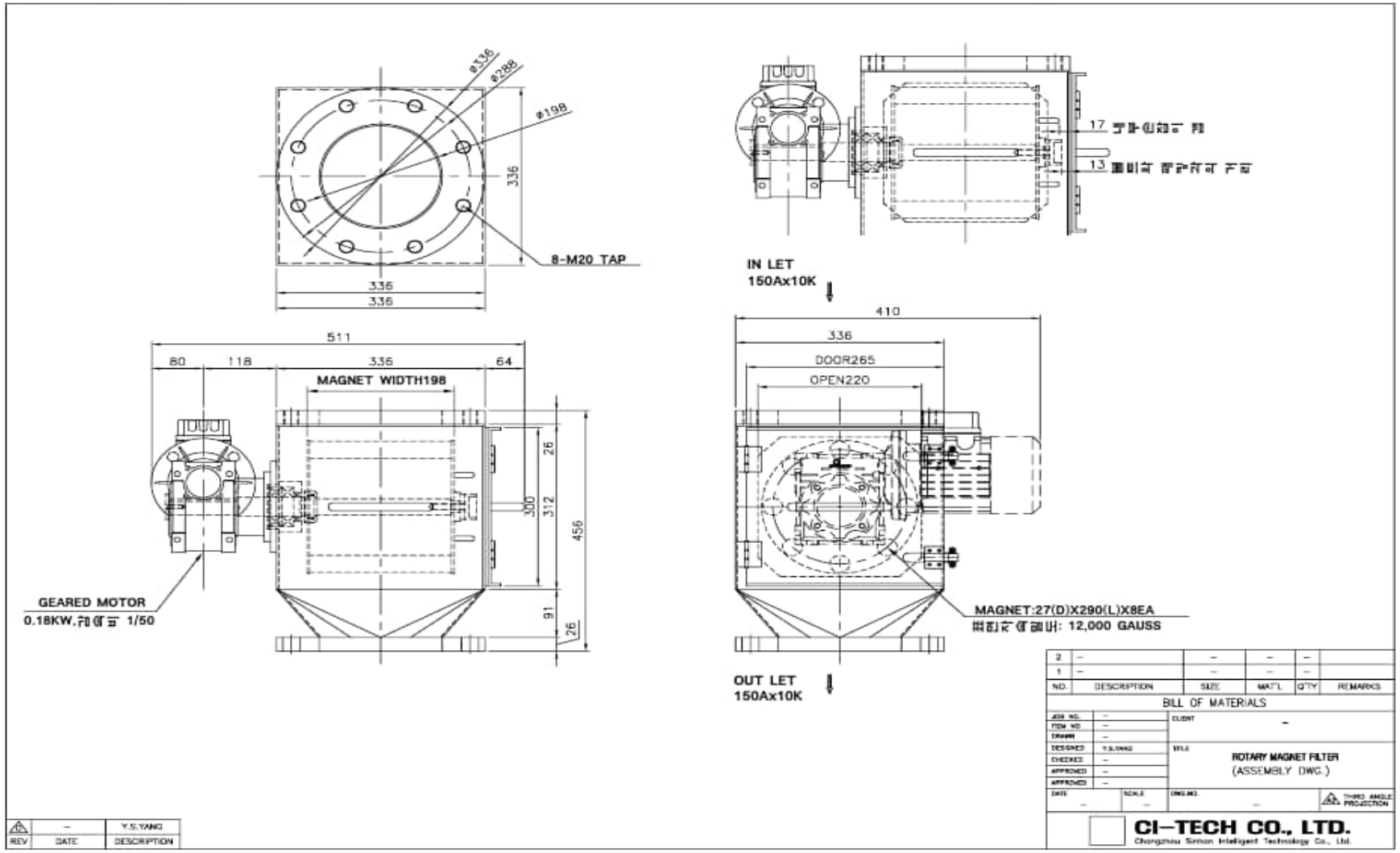


01

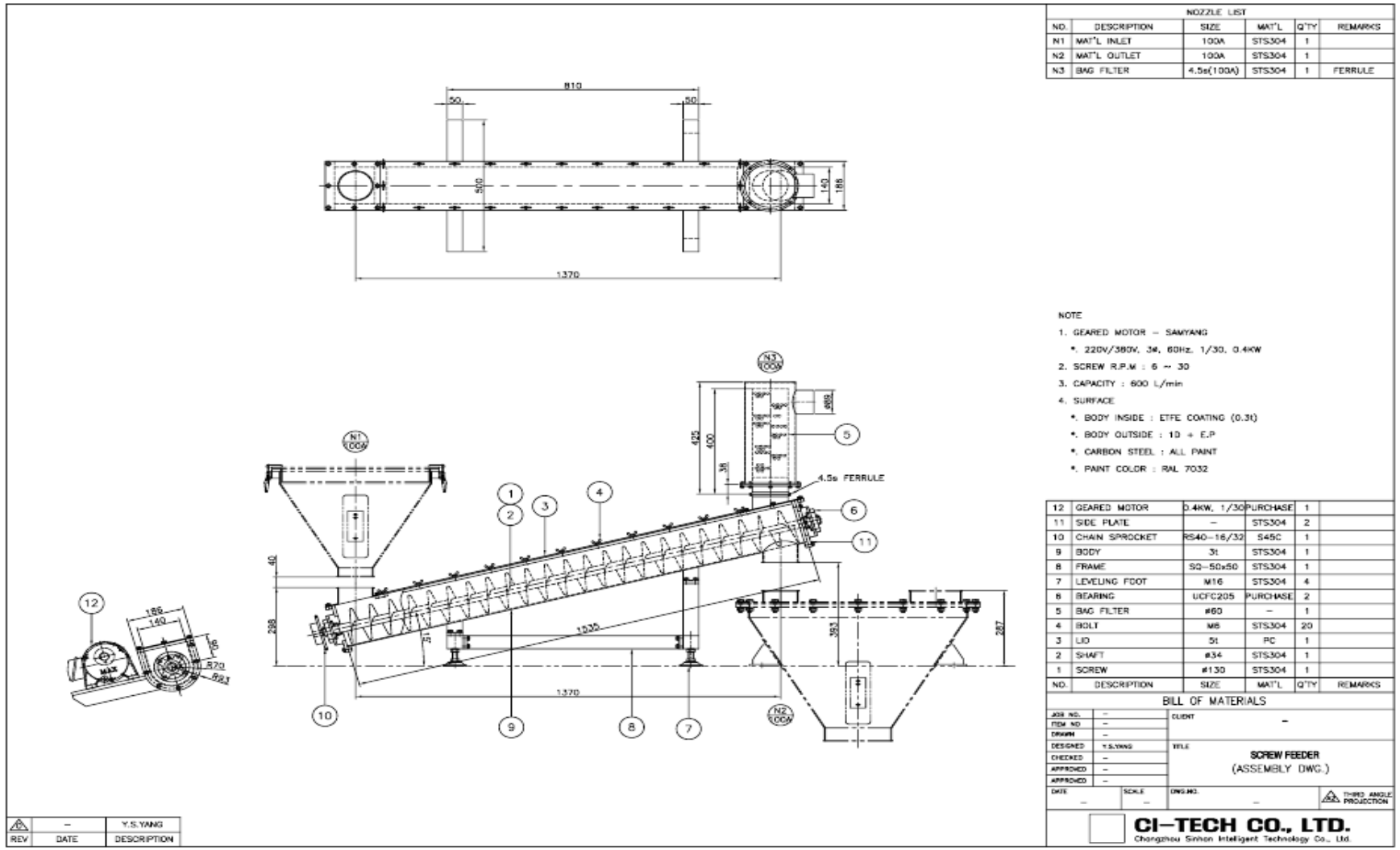
CI-TECH Major cathode equipment

- Main equipment
- **Auxiliary equipment**
- Conveyor system (BHT)

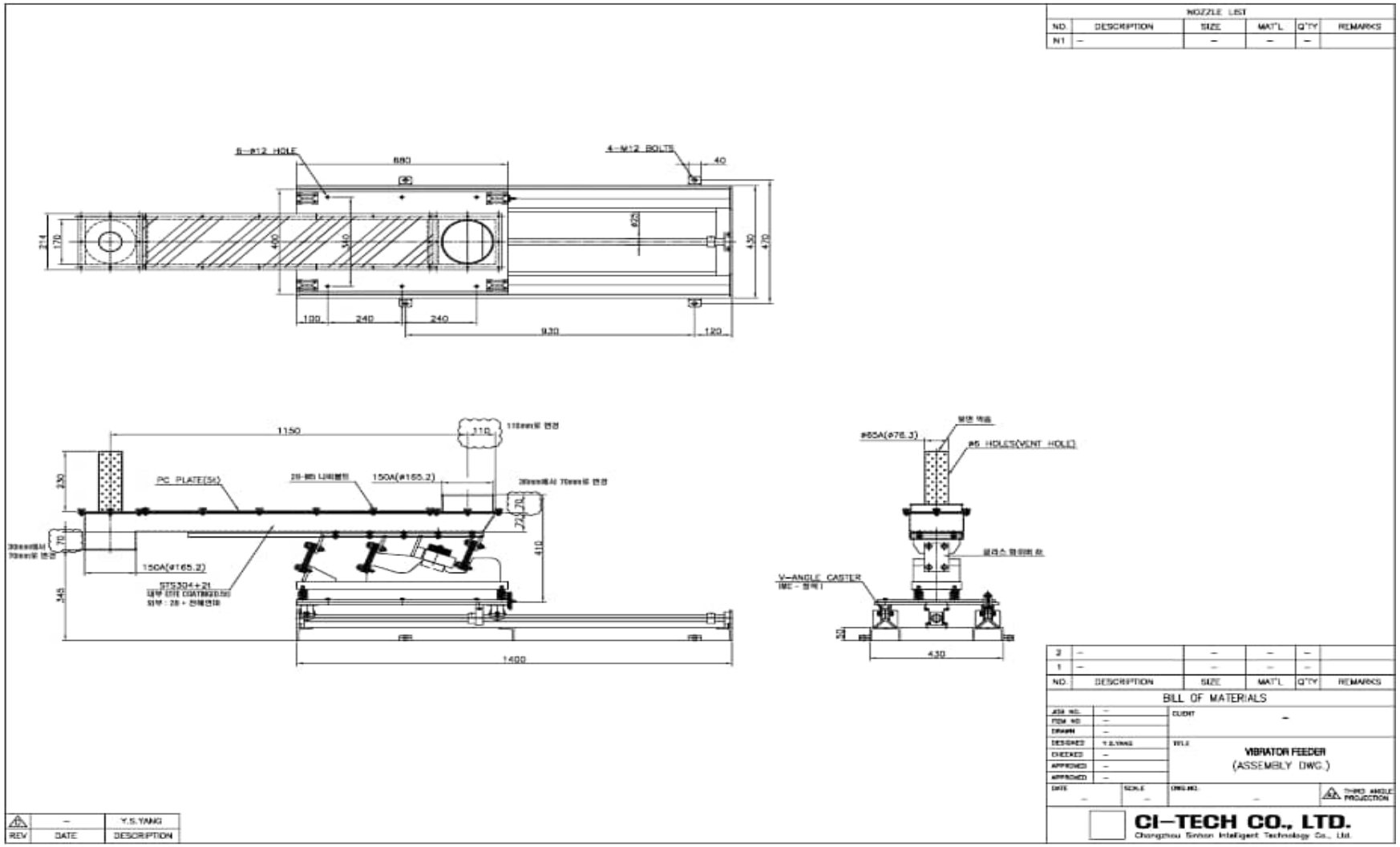
1. Rotary Magnet Filter



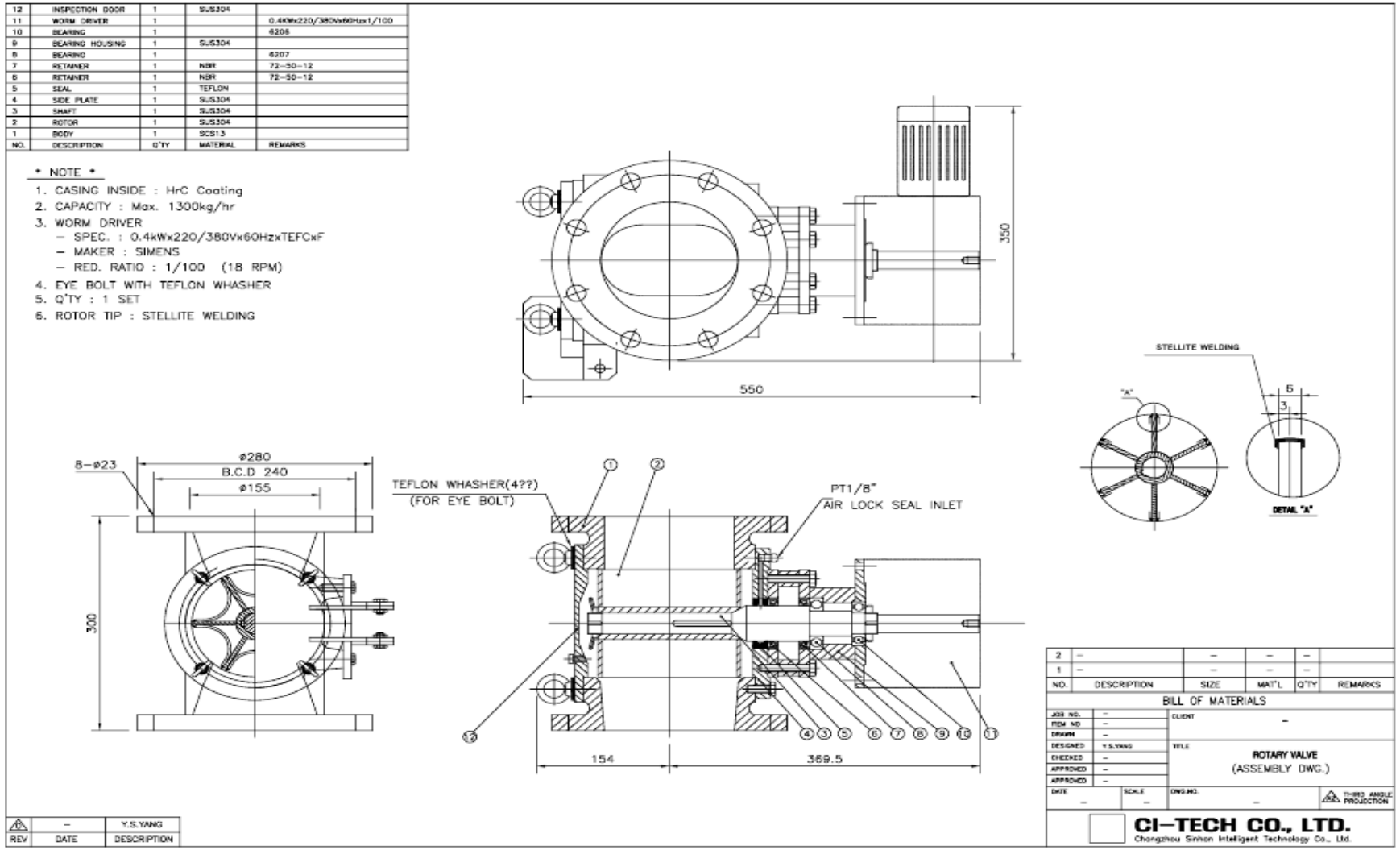
2. Screw Feeder



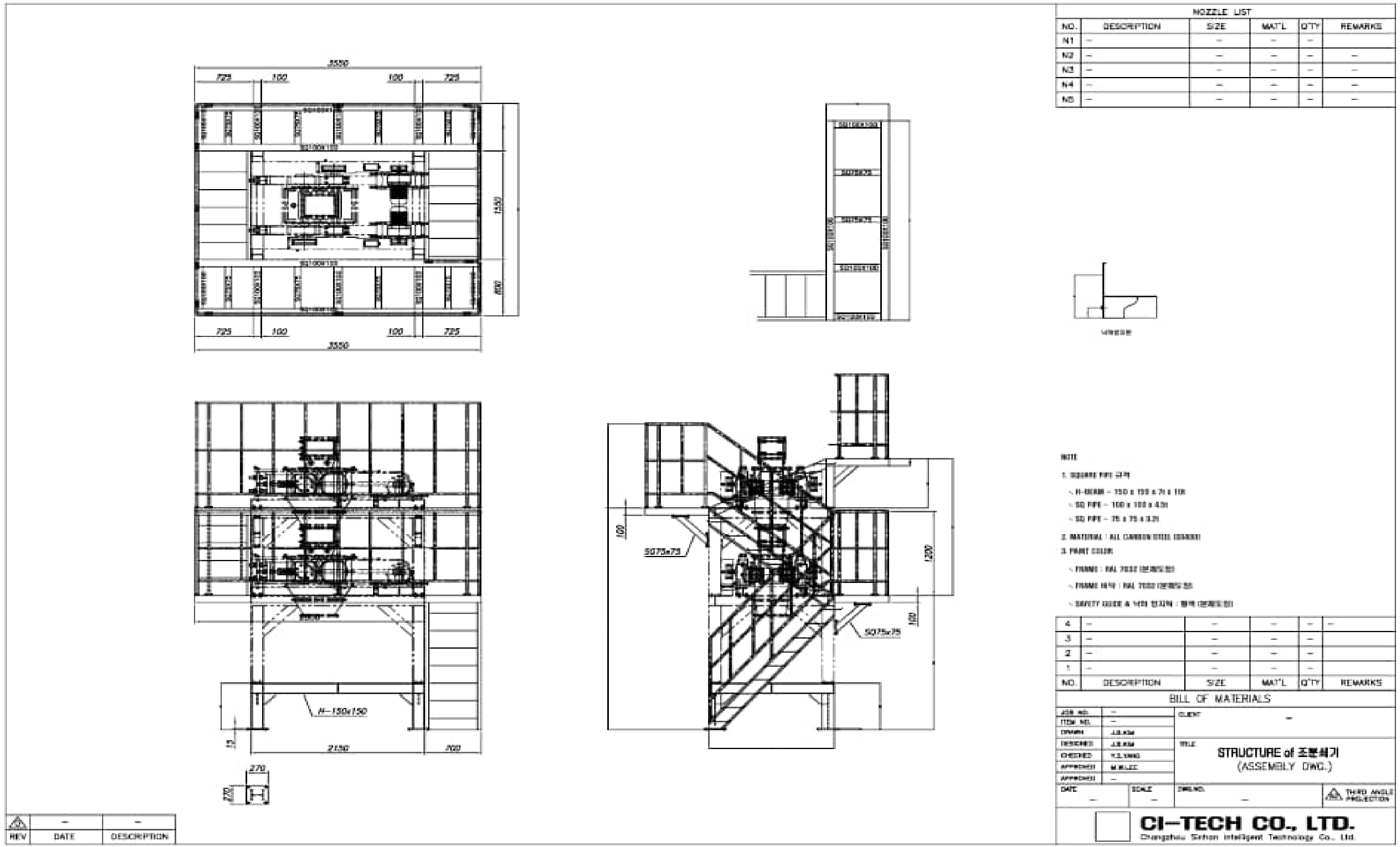
3. Vibrator Feeder



4. Rotary Valve



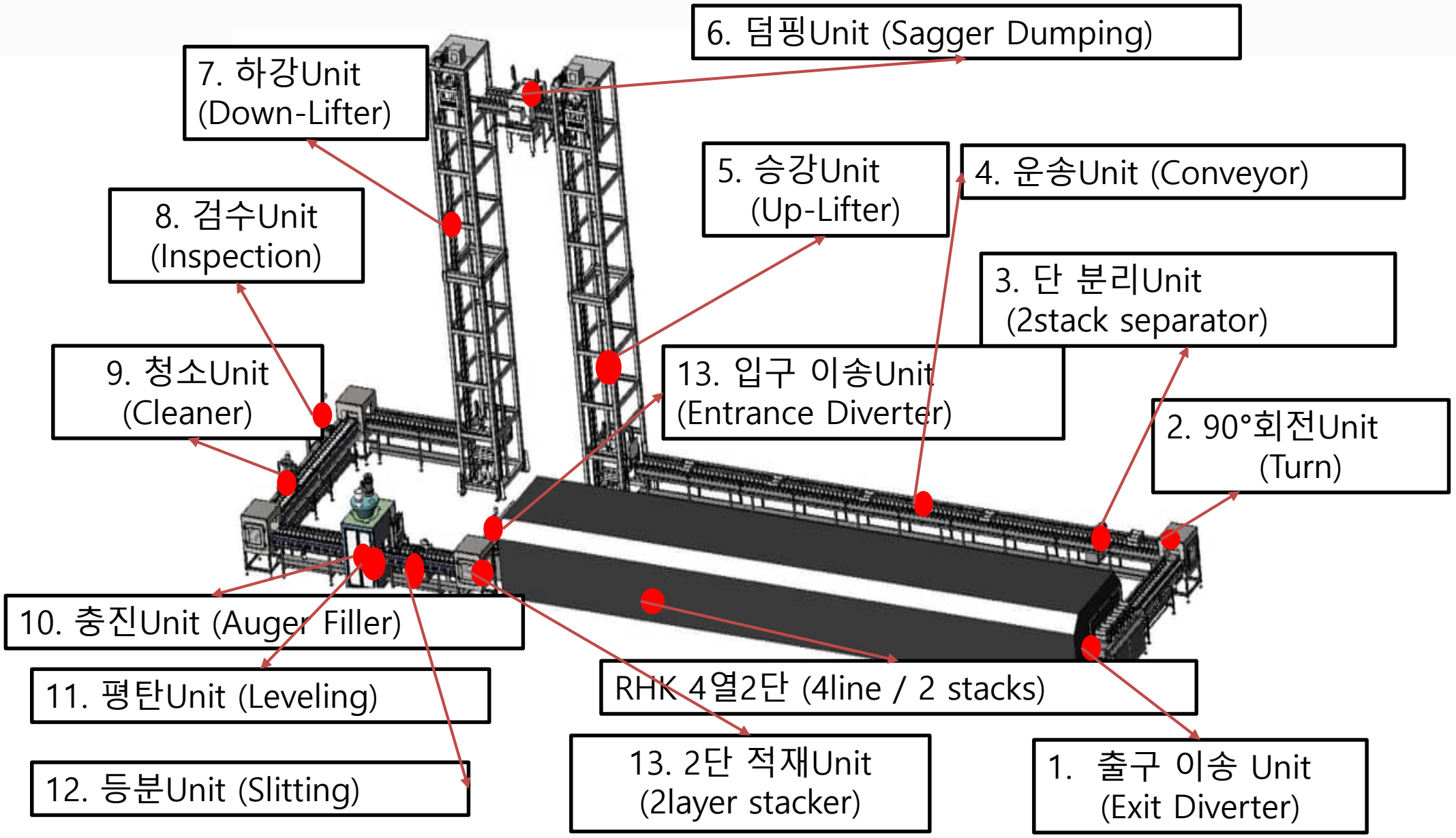
5. Structure


NOZZLE LIST
NO.
DESCRIPTION
SIZE
MAT'L
Q'TY
REMARKS
N1
N2
N3
N4
N5
3550
725
100
100
725
SQ75x75
H-150x150
2150
700
270
NOTE
BILL OF MATERIALS
STRUCTURE of 조분쇄기
(ASSEMBLY DWG.)
THIRD ANGLE PROJECTION
CI–TECH CO., LTD.
Changzhou Sinhon Intelligent Technology Co., Ltd.
REV
DATE
DESCRIPTION

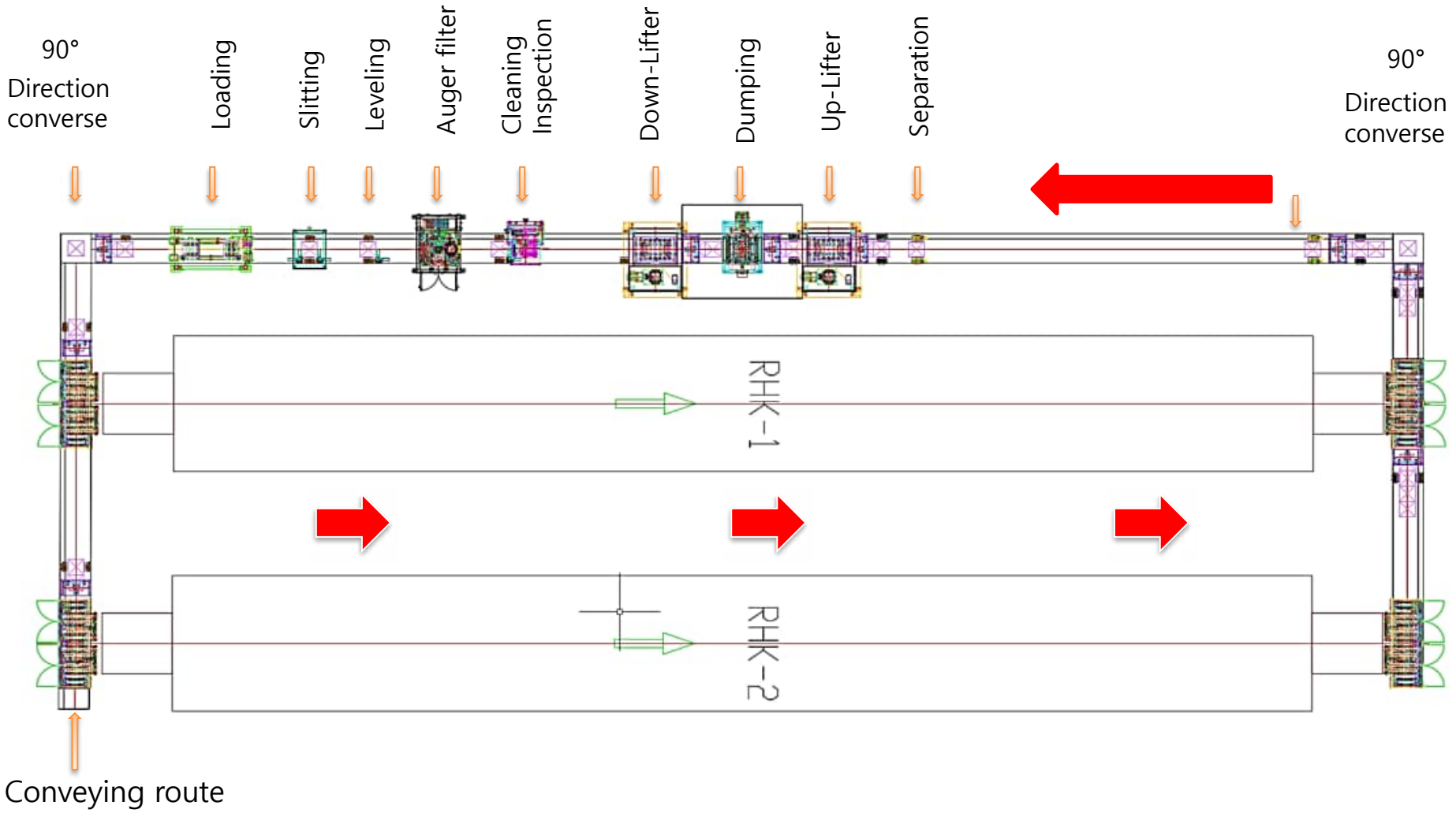
01

CI-TECH Major cathode equipment

- Main equipment
- Auxiliary equipment
- **Conveyor system (BHT)**


6. 덤핑Unit (Sagger Dumping)
7. 하강Unit (Down-Lifter)
5. 승강Unit (Up-Lifter)
4. 운송Unit (Conveyor)
8. 검수Unit (Inspection)
3. 단 분리Unit (2stack separator)
9. 청소Unit (Cleaner)
13. 입구 이송Unit (Entrance Diverter)
2. 90°회전Unit (Turn)
10. 충진Unit (Auger Filler)
11. 평탄Unit (Leveling)
RHK 4열2단 (4line / 2 stacks)
12. 등분Unit (Slitting)
13. 2단 적재Unit (2layer stacker)
1. 출구 이송 Unit (Exit Diverter)

Conveying Process

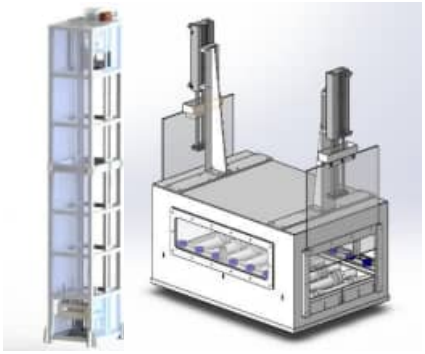


Contents of equipment

Exit Diverter

90°Turn

2 Layer stacker /Separation



Lifter

Sagger Dumping

Cleaner

Auger Filter

Leveling

Slitting

Converyor

Conveyor

01

Maintenance Service

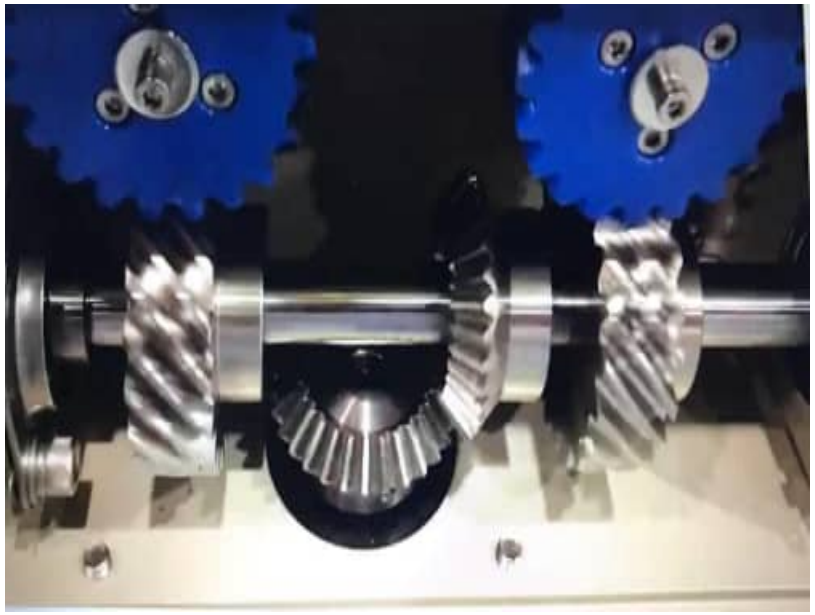
- Roller driven sagger conveying (Assembly line)

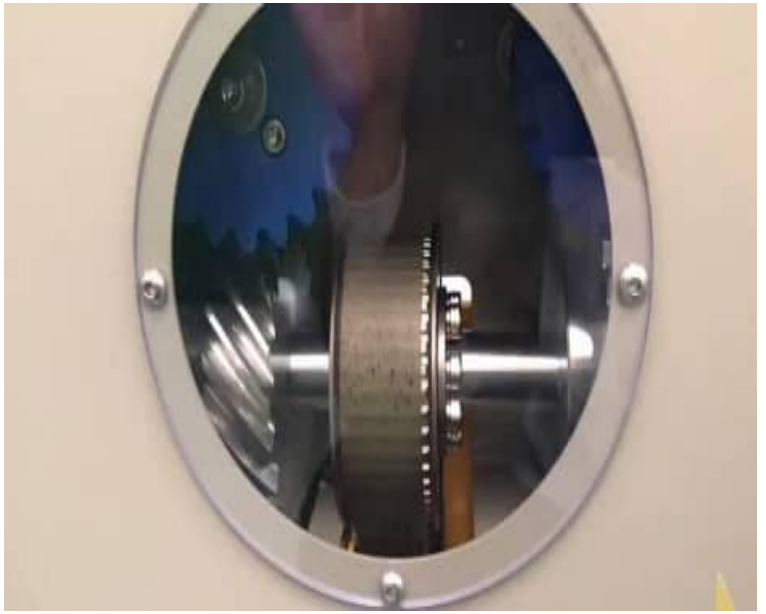
02

Product Features

- Torque (speed) adjustable – Inverter control
- Accumulation roller
- Prevent friction damage to the bottom of the container

Helical Gear





01

Maintenance Service

Excellent durability and stability.

No chain correction or additional lubrication required.

Conveyor Sealing Cover

01

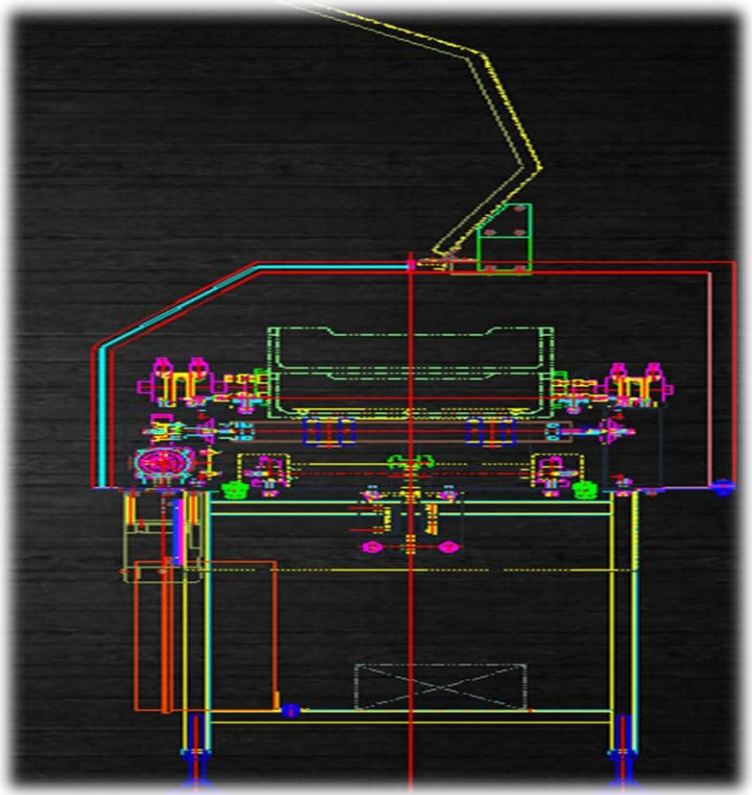
Maintenance Service

- Door open type
- Side opening type
- Can be changed according to equipment design

02

Product Features

- SUS304+PC plate；PC plate thickness≥6mm



Exit diverter

01

Maintenance Service

- The product (container) that has completed sintering is moved to the conveyor line.

02

Product Features

- The contact part with the sagger uses high-temperature materials
- The gap between containers can be adjusted at the entrance and exit
- No metallic foreign substances are generated by using a non-metallic chain

90° Turning unit

01

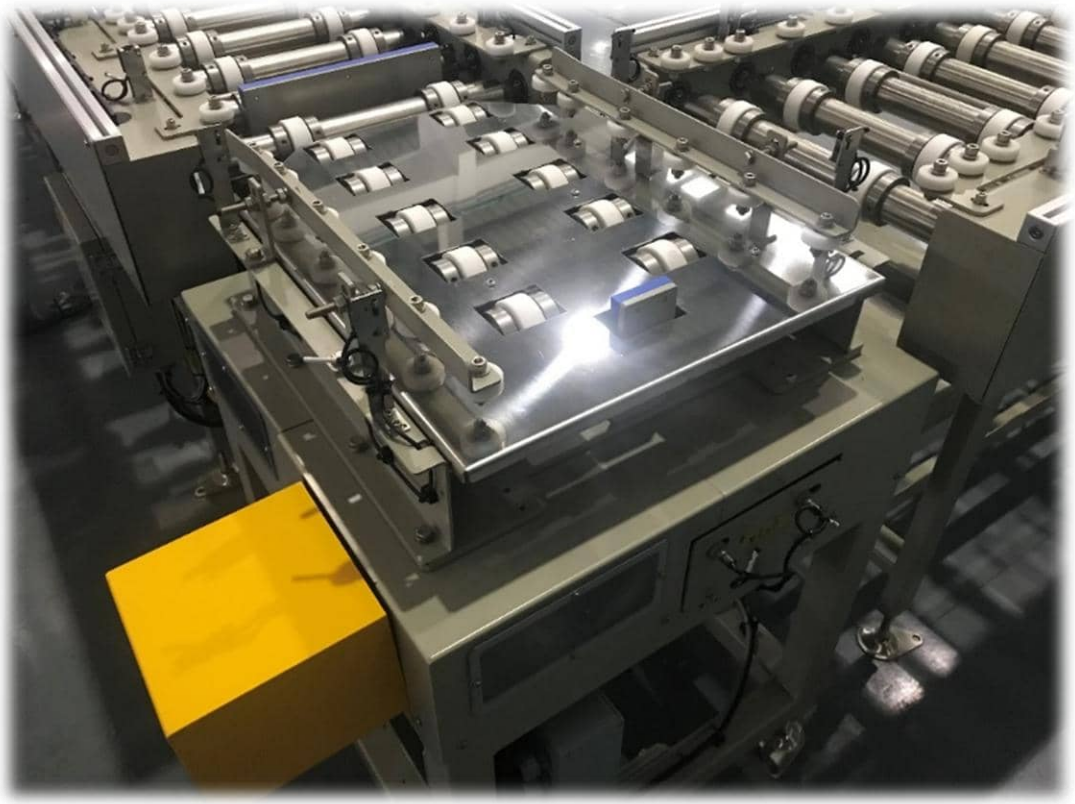
Maintenance Service

- Change direction 90°/180° of Sagger by the driven of cylinder

02

Product Features

- Guarantees stability of container transfer by cylinder drive.
- Prevents dust inflow by applying Jabara to the cylinder -> Extends cylinder life



Separation/ Stack unit

01

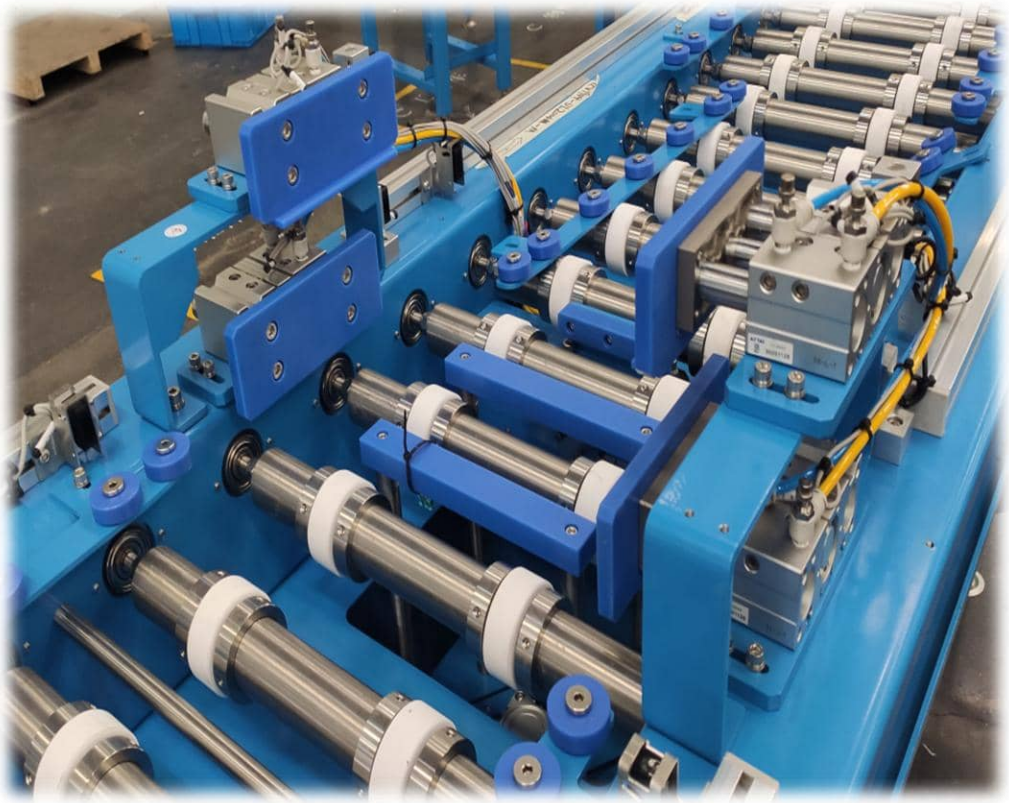
Maintenance Service

- Separate 2layer stack container to 1layer

02

Product Features

- Operate by sylinder (2ea)
- Operates by distinguishing CLOSE & OPEN TYPE of container
- Applicable to various specification of Sagger



Shred unit

01

Maintenance Service

- Crush the Hard Cake to make it easier to separate from the Sagger.

02

Product Features

- Grinding Bars can be manufactured to specifications that meet production conditions
- WC Coating
- No contact with Sagger

Lift

01

Maintenance Service

- Possible Raise/lower to desired height using guide rails

02

Product Features

- Height can be determined according to customer needs
- Use of non-metallic chain
- No metallic foreign matter

Dumping unit

01

Maintenance Service

- Sagger dumping at the top of the elevator

02

Product Features

Excellent sealing structure with external sealing

Residual dust inspection facility

01

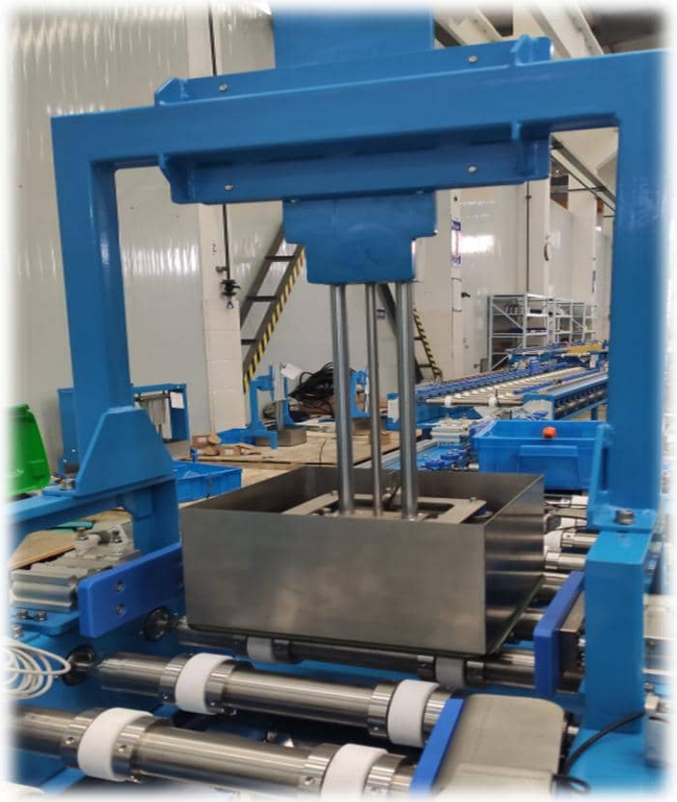
Maintenance Service

- Prevents powder from flowing into the secondary sintering furnace after dumping

02

Product Features

- Measuring the residual dust (height) inside the container using SENSOR



Sagger Cleaing facility

01

Maintenance Service

- Removing foreign matter from inside the Sagger

02

Product Features

- No area not cleaned
- Powder recovery system operates simultaneously with cleaning

Filling equipment

01

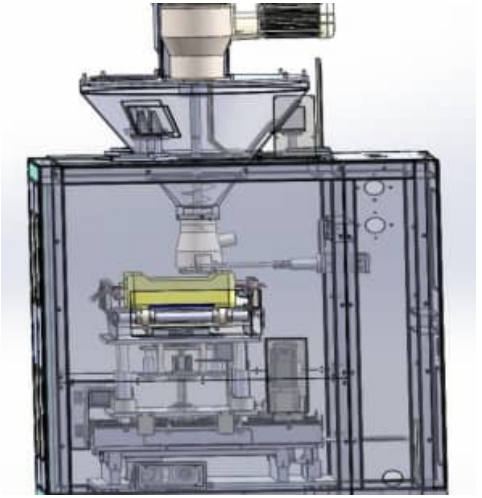
Maintenance Service

- Fills the appropriate amount of powder into the Sagger

02

Product Features

- Filling accuracy : ±50g/Saggar
- Filling speed: ≤90pcs /hr（ 5.5kg ）
  ≤140pcs /hr（ 3.5kg ）
- Mixer installed in the equipment's internal materials
- Self-mixer installed in the filling machine hopper -> No clogging during filling
- Equivalent gap between the raw material discharge port and the raw material surface: ≤50mm



Leveling unit

01

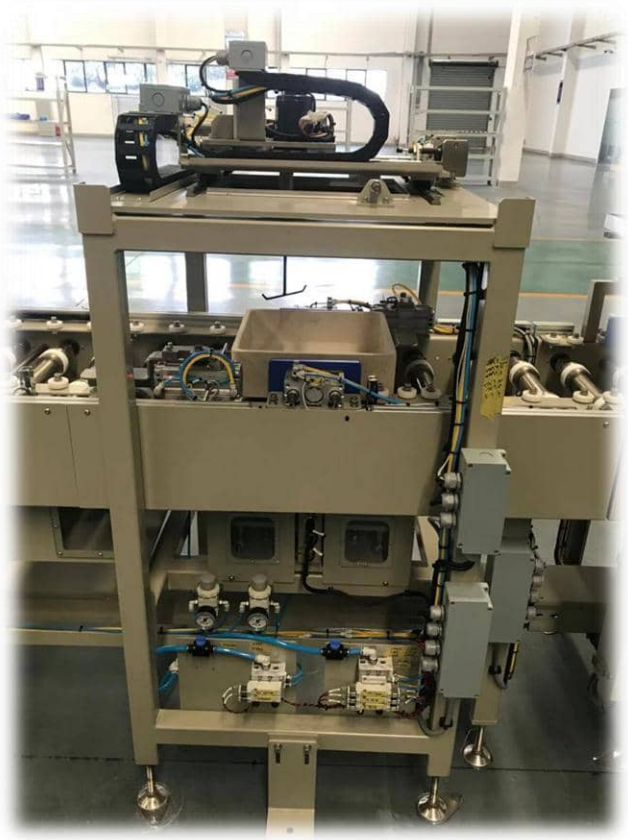
Maintenance Service

- Keep the surface of the Sagger flat

02

Product Features

- Adjustable vibration output
- Impeller W.C Coating

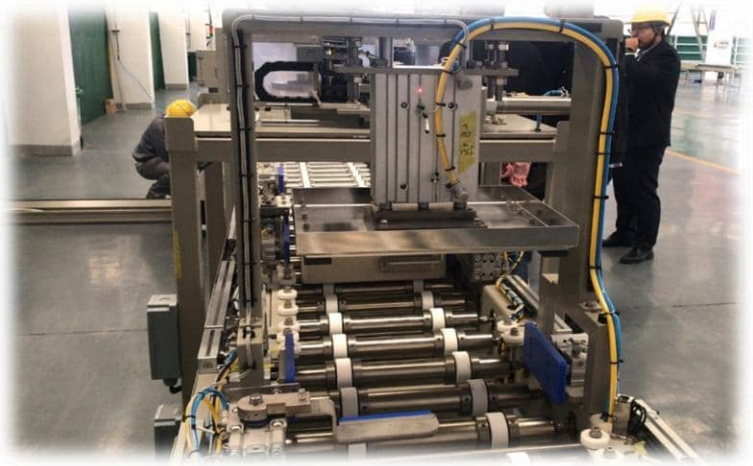


Slitting unit

01

Maintenance Service

- Powder SLIT

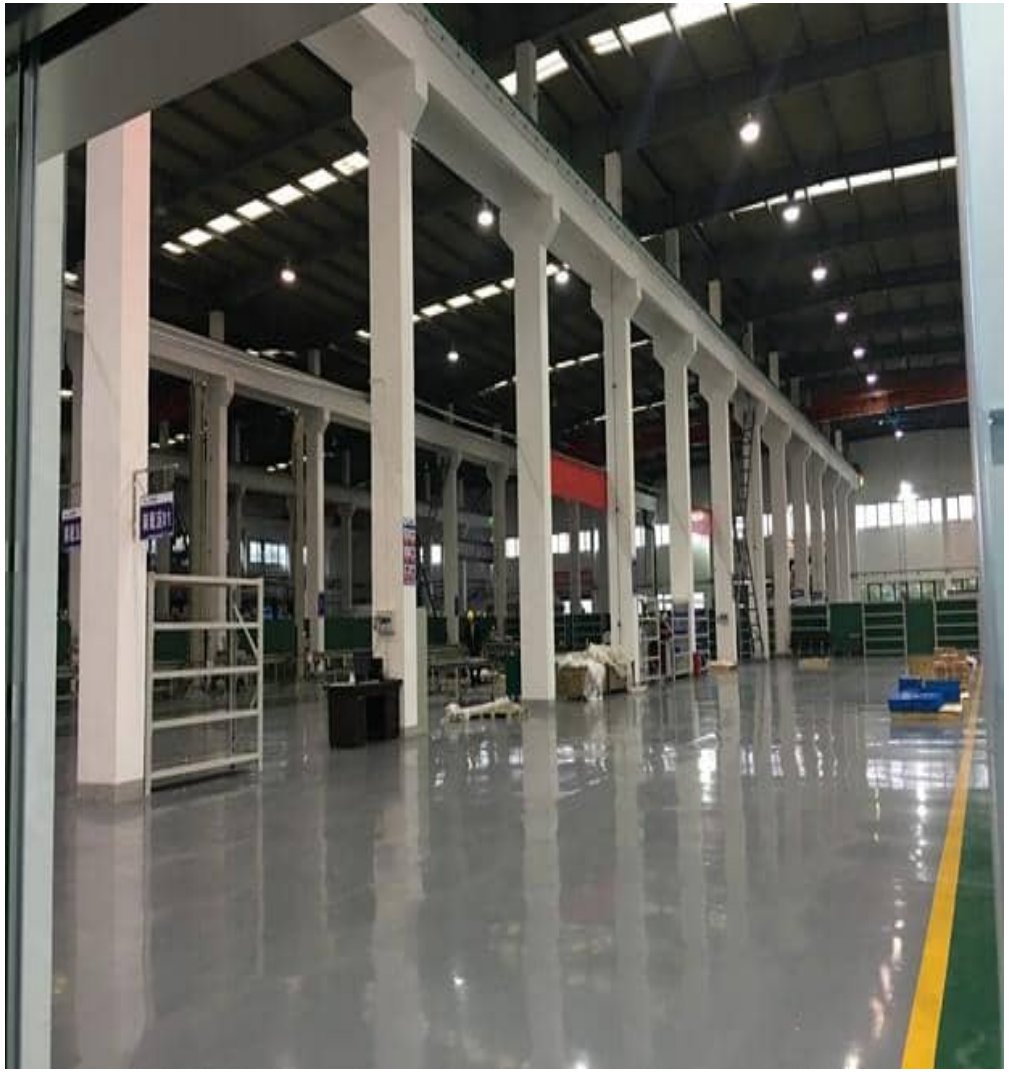


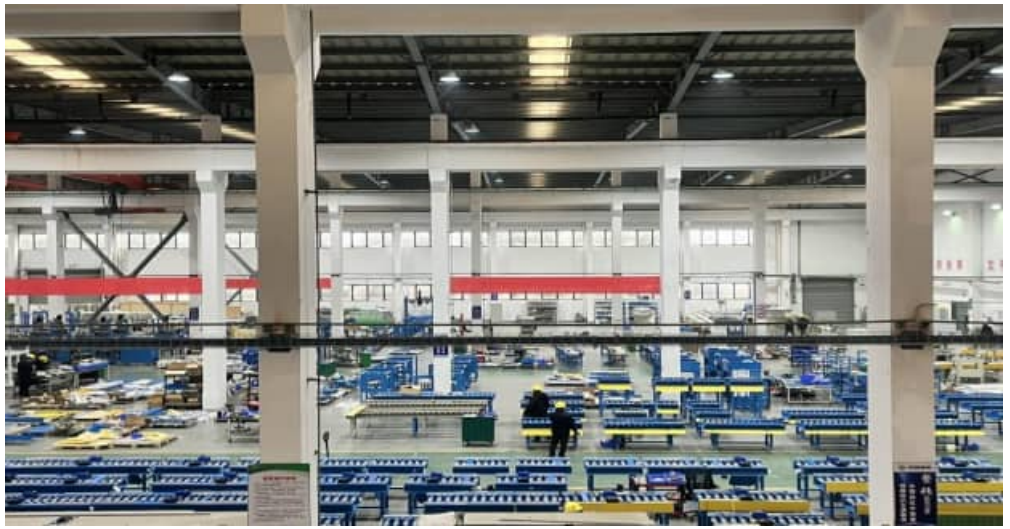
02

Product Features

- Easy to replace consumables
- Use non-metallic JIG
- Design according to customer needs possible

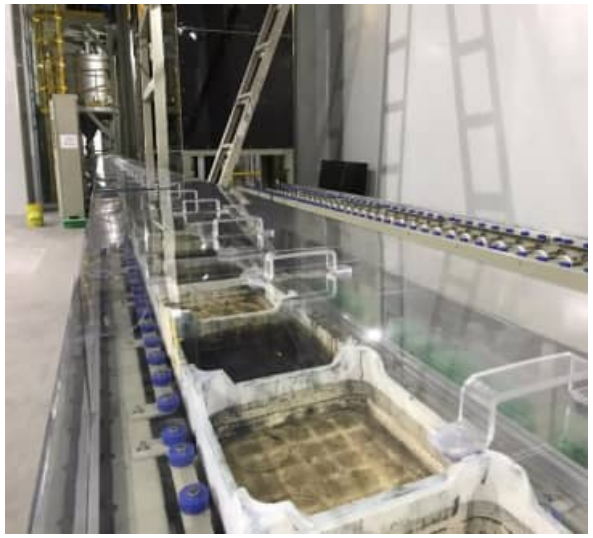
BHT Conveyor manufacturing





BHT Conveyor installation






04 CI-TECH Major facilities of secondary battery Raw material room

- References for Raw material room
- Contents of facility

References for Raw material room

References list

NO.	CLIENT	PROJECT	PRODUCT	Q.TY	MAKER	REMARK
1	LG Electronics	LGES GM JV- No.1 line in Ohio state, USA	Input facility	51	-	
2	LG Electronics	LGES GM JV- No.1 line in Ohio state, USA	Accessory of Input facility	42	-	
3	LG Electronics	LGES GM JV- No.1 line in Ohio state, USA	HOPPER	28	-	
4	LG Electronics	LGES GM JV- No.1 line in Ohio state, USA	FILTER	163	-	
5	LG Electronics	LGES GM JV- No.2~4 line in Ohio state, USA	Input facility	153	-	
6	LG Electronics	LGES GM JV- No.2~4 line in Ohio state, USA	Accessory of input facility	126	-	
7	LG Electronics	LGES GM JV- No.2~4 line in Ohio state, USA	TANK	126	-	
8	LG Electronics	LGES GM JV- No.2~4 line in Ohio state, USA	HOPPER	84	-	
9	LG Electronics	LGES GM JV- No.2~4 line in Ohio state, USA	FILTER	489	-	

References for Raw material room

References list per line

NO.	DESCRIPTION	Q.TY	MAKER	REMARK
1	**Input facility**			
1-1	Active material Input [DUMPING HOPPER (2300L) – Cathde]	6	-	Based on supplying 1 plant in Ohio state, USA
1-2	Active material Input [DUMPING HOPPER (2300L) - Anode]	8	-	Based on supplying 1 plant in Ohio state, USA
1-3	Active material check [CHECK SCALE (2300L) - Cathode]	6	-	Based on supplying 1 plant in Ohio state, USA
1-4	Active material check [CHECK SCALE (2300L) - Anode]	8	-	Based on supplying 1 plant in Ohio state, USA
1-5	Binder weighing [BINDER WEIGHING HOPPER (500L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
1-6	CMC weighing [CMC WEIGHING HOPPER (100L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
1-7	Conductive agent (CNT) [INPUT HOPPER (100L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
1-8	Conductive agent [INPUT HOPPER (100L) - Anode]	2	-	Based on supplying 1 plant in Ohio state, USA
1-9	Manual Input [MANUAL INPUT HOPPER (100L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
1-10	Manual Input [MANUAL INPUT HOPPER (100L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
1-11	Silicon weighing [SILICONE WEIGHING HOPPER (100L) - Cathode]	4	-	Based on supplying 1 plant in Ohio state, USA
	SUB TOTAL	**51**		
2	**ACCESSORY of Input facility**			
2-1	SUCTION DISCHARGE DEVICE - Cathode	6	-	Based on supplying 1 plant in Ohio state, USA
2-2	SUCTION DISCHARGE DEVICE - Anode	8	-	Based on supplying 1 plant in Ohio state, USA
2-3	TRANSFER SYSTEM (PIPING & RING BLOWER CASING) - Cathode	6	-	Based on supplying 1 plant in Ohio state, USA
2-4	TRANSFER SYSTEM (PIPING & RING BLOWER CASING) - Anode	8	-	Based on supplying 1 plant in Ohio state, USA
2-5	WALKWAY & STAIRS - Cathode	6	-	Based on supplying 1 plant in Ohio state, USA
2-6	WALKWAY & STAIRS - Anode	8	-	Based on supplying 1 plant in Ohio state, USA
	SUB TOTAL	**42**		

References for Raw material room

References list per line

NO.	DESCRIPTION	Q.TY	MAKER	REMARK
3	**TANK**			
3-1	Slurry Storage [SLURRY STORAGE TANK (2000L) - Cathode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-2	Slurry Storage [SLURRY STORAGE TANK (2000L) – Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-3	Slurry buffer [SLURRY BUFFER TANK (800L) - Cathode]	2	-	Based on supplying 1 plant in Ohio state, USA
3-4	Slurry buffer [SLURRY BUFFER TANK (800L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-5	Slurry transfer [SLURRY TRANSFER TANK (800L) - Cathode]	2	-	Based on supplying 1 plant in Ohio state, USA
3-6	Slurry transfer [SLURRY TRANSFER TANK (800L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-7	Slurry supply [SLURRY SUPPLY TANK (300L) - Cathode]	2	-	Based on supplying 1 plant in Ohio state, USA
3-8	Slurry supply [SLURRY SUPPLY TANK (300L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-9	Pre-dispersion [PRE BUFFER TANK (1500L) - Anode]	3	-	Based on supplying 1 plant in Ohio state, USA
3-10	Pre-dispersion [PRE STORAGE TANK (1800L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
3-11	Pre-dispersion [PRE STORAGE TANK (1800L) - Anode]	2	-	Based on supplying 1 plant in Ohio state, USA
3-12	Insulating liquid [INSULATING LIQUID TRANSFER TANK (1300L)]	1	-	Based on supplying 1 plant in Ohio state, USA
3-13	DI water storage [DI WATER STORAGE TANK (4000L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
3-14	NMP storage [NMP STORAGE TANK (3000L) - 양극]	3	-	Based on supplying 1 plant in Ohio state, USA
	S U B T O T A L	**42**		
4	**HOPPER**			
4-1	Binder hopper [BINDER HOPPER SCALE (2500L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
4-2	CMC hopper [CMC HOPPER SCALE (2500L) - Amode]	4	-	Based on supplying 1 plant in Ohio state, USA
4-3	Pre-dispersion [PRE-DISPERSION HOPPER SCALE (2000L) – Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
4-4	Pre-dispersion [PRE-DISPERSION HOPPER SCALE (1800L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
4-5	CNT hopper [CNT HOPPER SCALE (2000L) – Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA

References for Raw material room

References list per line

NO.	DESCRIPTION	Q.TY	MAKER	REMARK
4-6	BS Additives [BS HOPPER SCALE (300L) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
4-7	SBR Hopper [SBR HOPPER SCALE (120L) - Anode]	4	-	Based on supplying 1 plant in Ohio state, USA
4-8	SWCNT Hopper[SWCNT HOPPER SCALE (120L)]	4	-	Based on supplying 1 plant in Ohio state, USA
	SUB TOTAL	**28**		
5	**FILTER**			
5-1	MAGNET FILTER - 10,000 gauss (4.0S : 10 EA / 3.0S : 25 EA / 2.5S : 10 EA / 2.0S : 27 EA)	72	-	Based on supplying 1 plant in Ohio state, USA
5-2	MAGNET FILTER - 11,000 gauss (1.5S : 8 EA)	8	-	Based on supplying 1 plant in Ohio state, USA
5-3	ROTARY MAGNET FILTER - 13,000 gauss (8" : 3 EA)	3	-	Based on supplying 1 plant in Ohio state, USA
5-4	MESH FILTER - 2.0S (MESH #10 : 10 SETS / MESH #150 : 13 SETS)	26	-	Based on supplying 1 plant in Ohio state, USA
5-5	MESH FILTER - 2.5S (MESH #10 : 4 SETS)	4	-	Based on supplying 1 plant in Ohio state, USA
5-6	MESH FILTER - 3.0S (MESH #150 : 3 SETS)	3	-	Based on supplying 1 plant in Ohio state, USA
5-7	CDA FILTER - 1" (DUMPING HOPPER - 14 SETS & CHECK SCALE - 14 SETS)	28	-	Based on supplying 1 plant in Ohio state, USA
5-8	Powder [POWDER VENT FILTER (80A) - Cathode]	6	-	Based on supplying 1 plant in Ohio state, USA
5-9	Powder [POWDER VENT FILTER (150A) - Cathode]	3	-	Based on supplying 1 plant in Ohio state, USA
5-10	Powder [POWDER VENT FILTER (80A) - Anode]	6	-	Based on supplying 1 plant in Ohio state, USA
5-11	Powder [POWDER VENT FILTER (150A) - Catode]	4	-	Based on supplying 1 plant in Ohio state, USA
	SUB TOTAL	**163**		

Facility of Raw material room

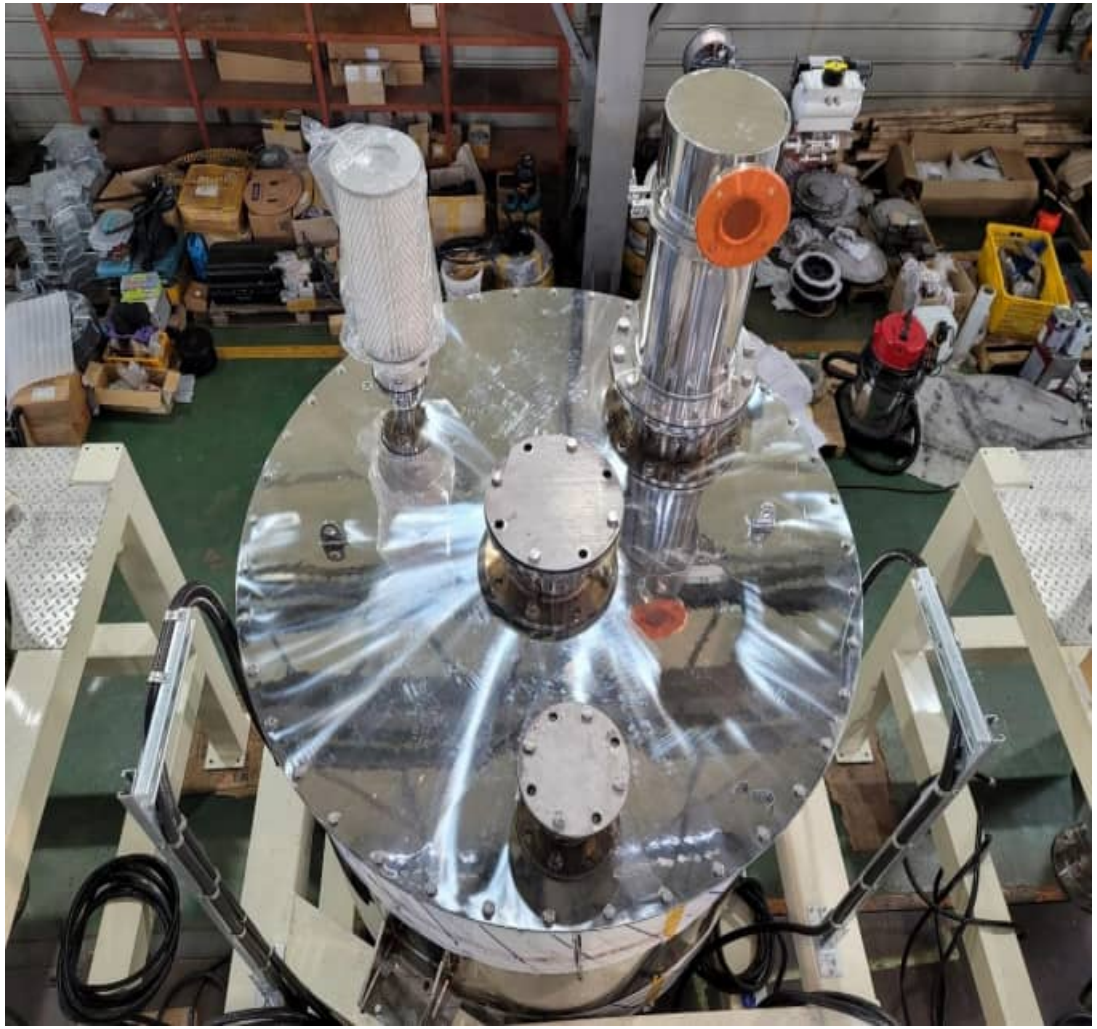
Active material weighing and Conveying unit

Facility of Raw material room

Dumping hopper for Input, Weighing and Conveying (2300L)

Facility of Raw material room

Active material weighing/ Check scale for Input (2300L)



Facility of Raw material room

Storage for liquid slurry/ Binder Hopper for supply (2500L) & CMC Hopper (2500L)

Facility of Raw material room

Storage for liquid slurry/ CNT Hopper scale for supply (2000L) &
Cathode pre-dispersion Hopper scale (2000L)

Facility of Raw material room

Storage for liquid slurry/ Anode pre-dispersion Hopper scale for supply (2000L) &
Hopper scale for BS additives (300L)

Facility of Raw material room

Storage for liquid slurry/ SBR HOPPER SCALE for supply (120L)
Storage for active material/ BINDER weighing hopper for supply (500L)

Facility of Raw material room

Storage for active material/ CMC weighing Hopper (100L) & Manual input Hopper(100L)

Facility of Raw material room

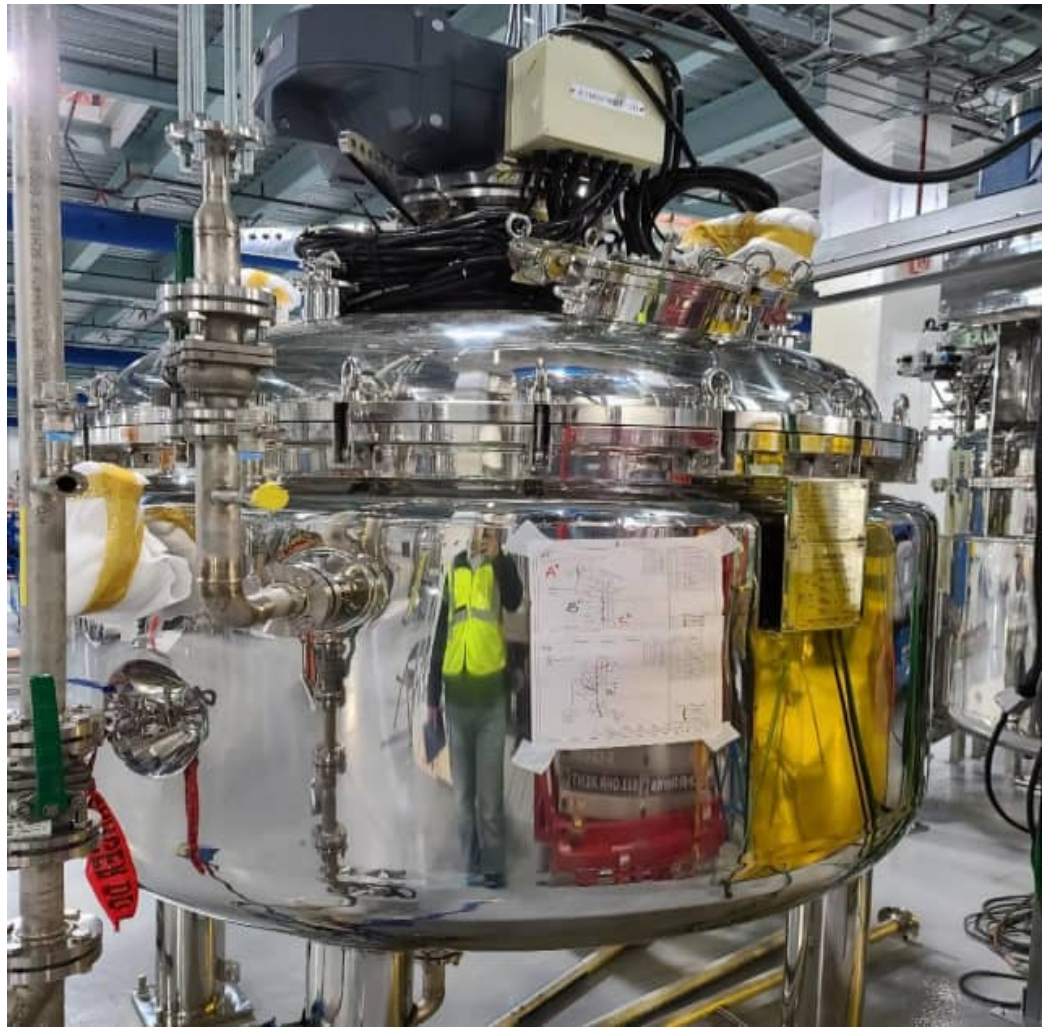
Storage for active materials / Supplying hopper for conductive material (100L)

Facility of Raw material room

Magnet Filter for liquid slurry supply line
Mesh Filter & Powder Filter for movable material supply line

Facility of Raw material room

Slurry tank (Storage,Buffer,Converying) & Pre-dispersion (Storage,Buffer)



Facility of Raw material room

DI Water Tank & NMP Tank for storage

Facility of Raw material room

3-Axis Compact Mixer

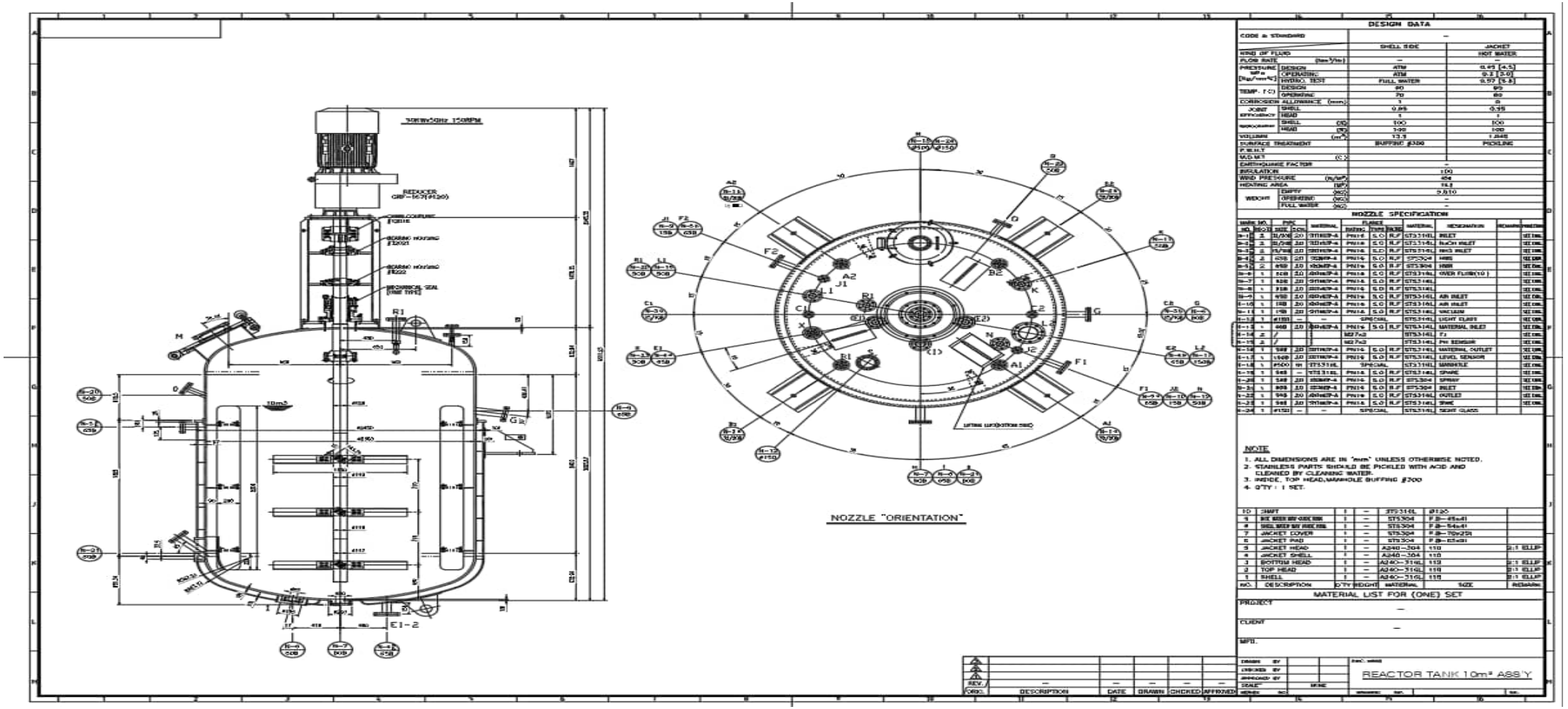
05

CI-TECH Major secondary battery precursor facility

- Secondary battery precursor facility

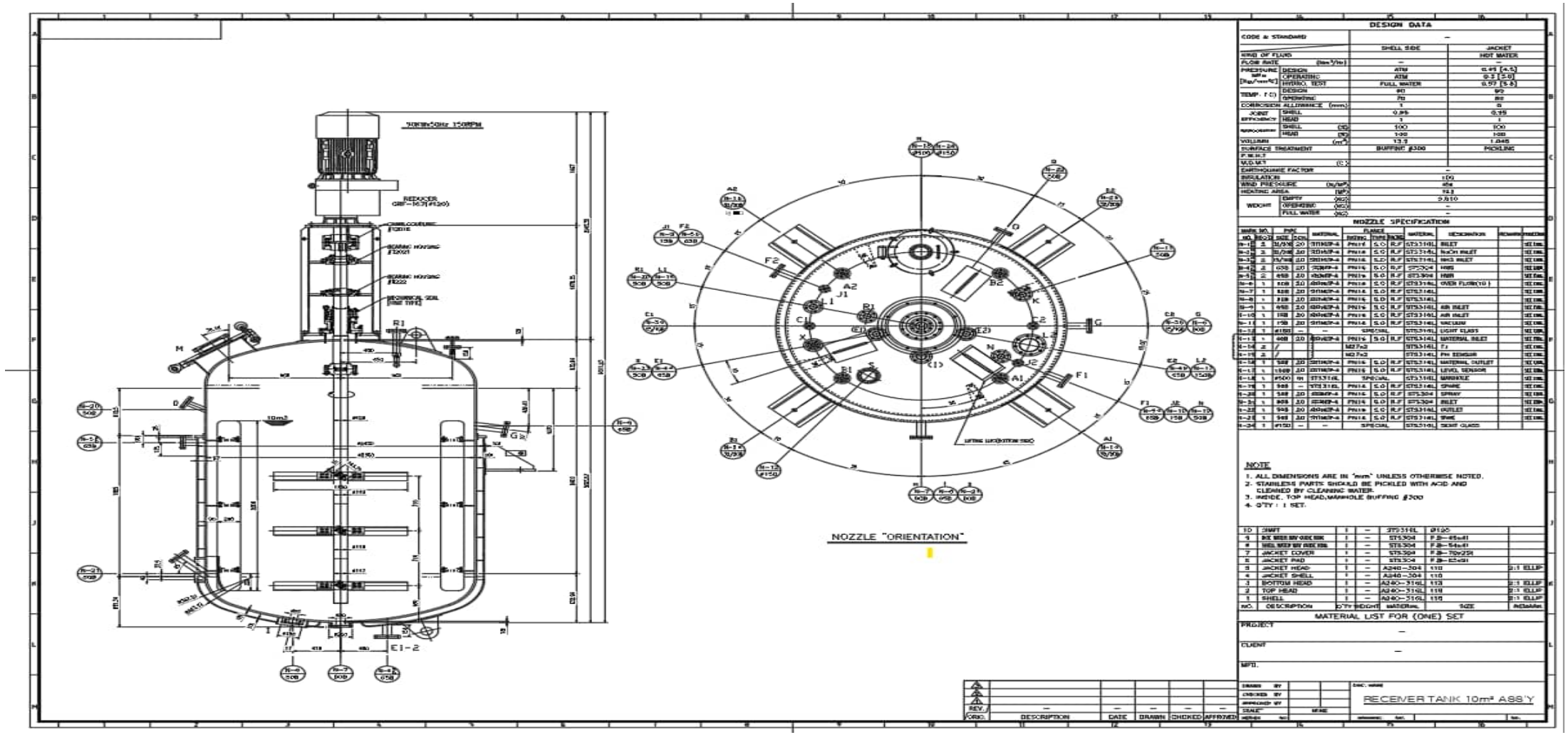
Precursor facility

REACTOR 10 m³



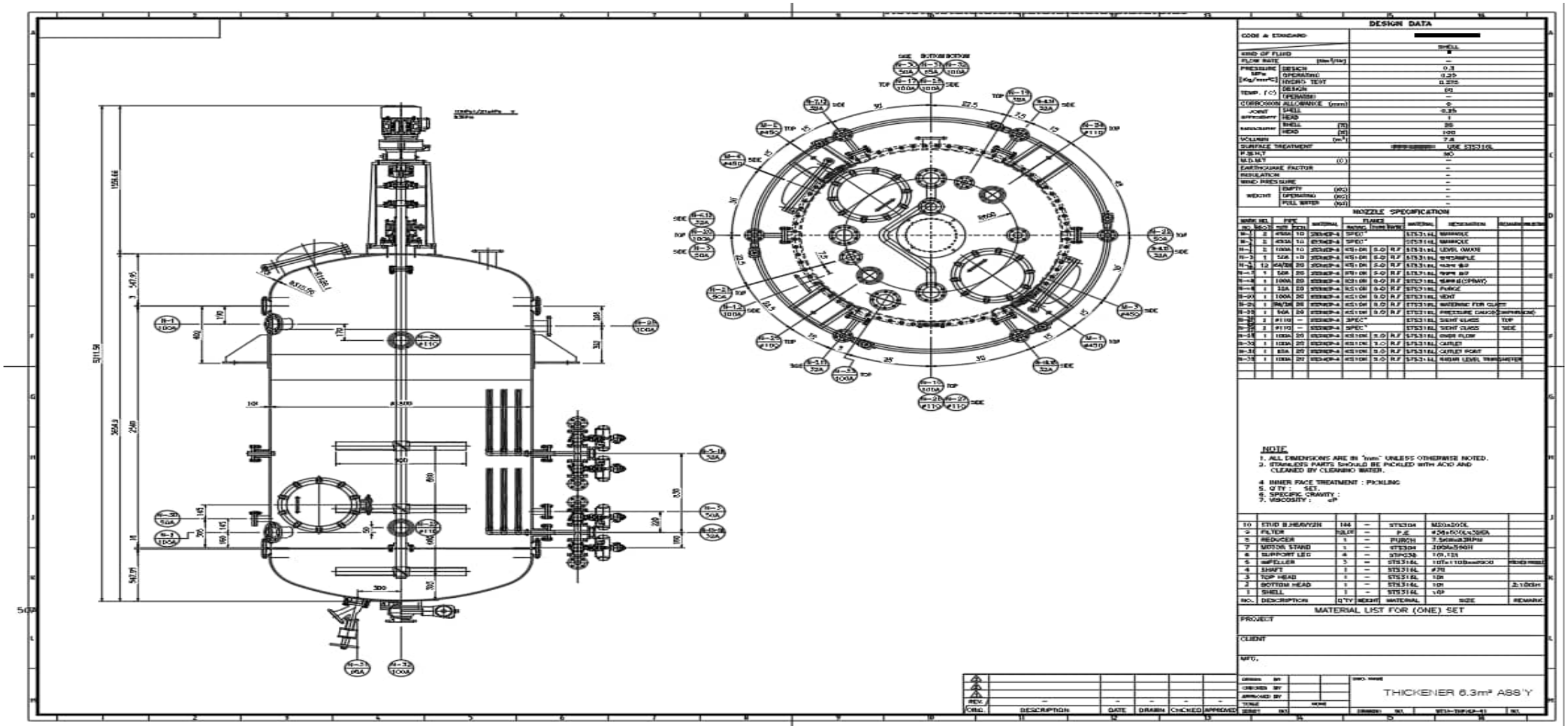
Precursor facility

RECEIVER 10 m³



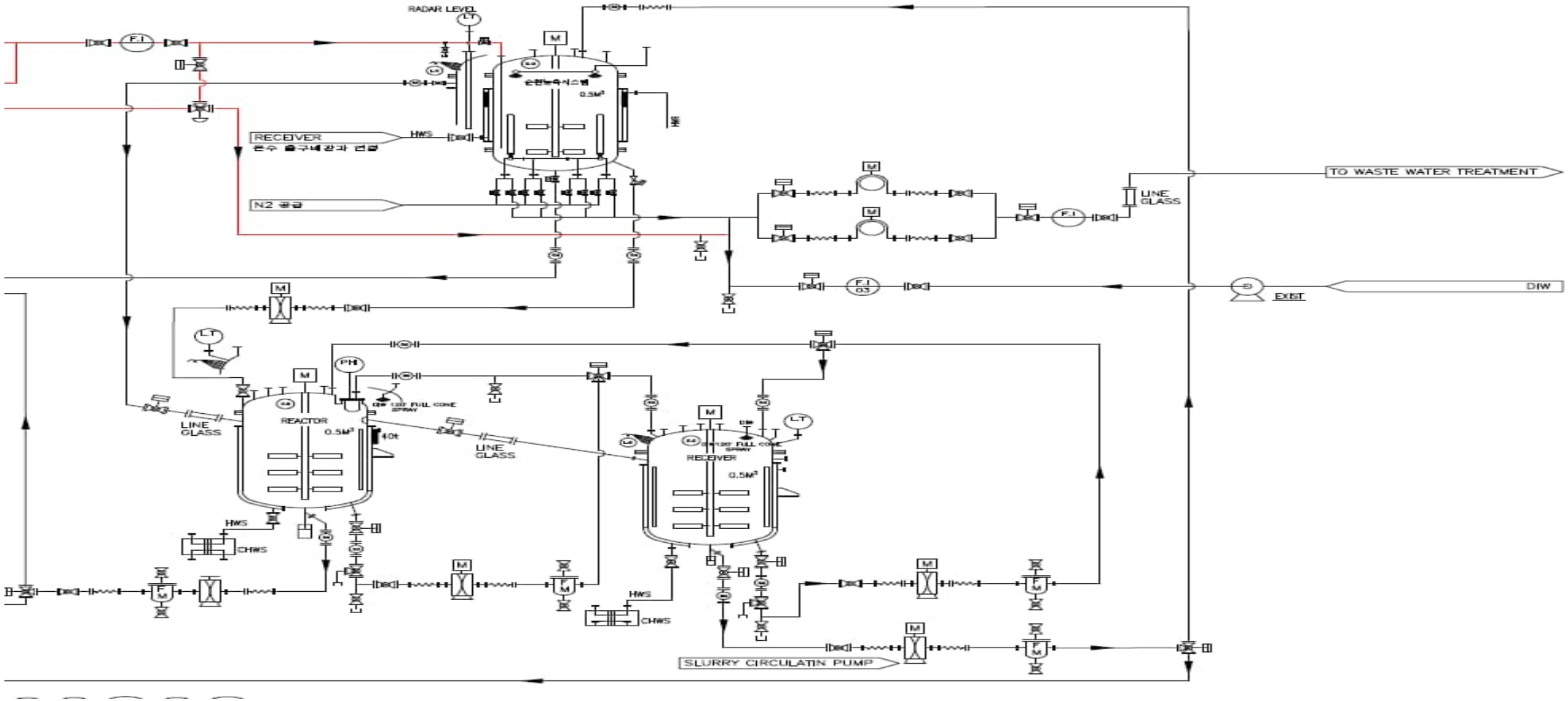
Precursor facility

THICKENER 6.3 m³



Precursor facility

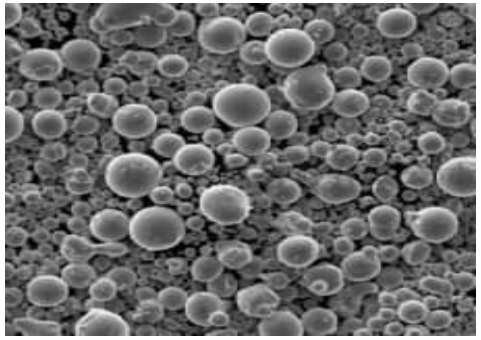
Pilot 0.5 ㎥ Piping & Instrument diagram

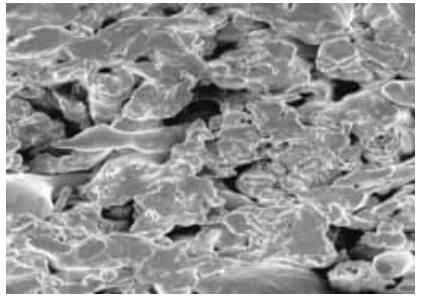


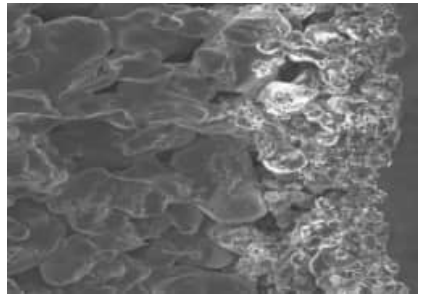
Thickener filter proposal (Powder film type → Metal wash type)

Filter Tube Cartridge

- Max. Filteration : 1 ㎛
- Material : 316L
- Flow rate : 5~7m^3
- Temperature : 350 ℃
- Availability : 0.5~1 year (Viscosity & performance are inverse)
- Efficiency : 98~100%





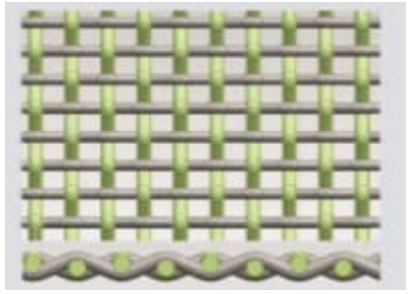


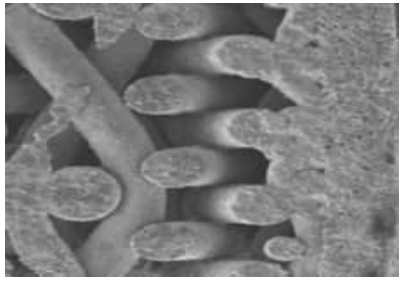
Precursor facility

Thickener filter proposal (Powder film type → Metal wash type)

Filter Tube Cartridge

- Max. Filtration: 0.3 ㎛ (Preferred : 0.5 ㎛)
- Material : 316L
- Flow rate : 10~12m^3
- Temperature : 350 ℃
- Availability : 2~3 years
- Efficiency : 0.3um – 99.8~100%





Thickener Filter Applied Specifications and Review

Filter (Based on 6.3m^3)

- **Size :** Ø38 x 600L x 32EA x 6 Sets – 192 EA
- **Q'ty :** 192EA x 2 layer = 384 EA
- **Install** : Install at equal intervals based on the inside of the wall.
  . When installing the filter by concentrating it on one side, it is unreasonable to control the shape of the precursor due to the effect of the fluid flow
  . Install at equal intervals on the wall of the concentrator

Busan plant - 32, Hwajeonsandan 5-ro 48beon-gil, Gangseo-gu, Busan, Korea

Ulsan plant - 80-67, Bancheonsaneop-ro, Eonyang-eup,Ulju-gun, Korea

(+82) 51-714-7040

(+82) 10-8511-1452

(+82) 51-971-9766

manager@ci-tech.kr
jsyoon@ci-tech.kr

www.ci-tech.kr

THANK YOU

CI-TECH Always one step ahead !