

# **KOREA TECHNOLOGY SOLUTION 2019**

**Plant Engineering**

# KOREA TECHNOLOGY SOLUTION

**Samshin provides the advanced technology of Korea  
with reasonable price.**

## Technology

We have know-how accumulated with long experience in plant engineering.  
We have strong partnerships with excellent Korean companies at each area.

## Quality

Samshin's special process management system pursues perfect construction.  
We provide 30 years of know-how in design and construction.

## Warranty

From design / construction to commissioning, We take responsibility until customer satisfy  
Local engineer performs quick AS response.

## Who we are

Samshin Co., Ltd. is a plant engineering company that adheres to high quality with accumulated technology of engineers with more than 30 years working experience.

Founded in 1988 as a company specializing in manufacturing industrial machinery, Samshin Co., Ltd. has been developing Korean plant technology for more than 30 years with excellent partners in various industries.

Samshin Co., Ltd. is ready to provide suitable and reasonable solution for various industries and needs with skilled technology & know-how. Samshin will be your best partner in the field of plant engineering.

## Company Status



### Samshin Korea

Add : 196, Yongsan-gil, Cheongha-myeon, Buk-gu, Pohang-si,  
Gyeongsangbuk-do, Republic of Korea  
Tel : +82-54-256-2229  
Area : 26,500m<sup>2</sup>



### Samshin Korea 2nd Fctory

Add : 1952, Donghae-daero, Heunghae-eup, Buk-gu,  
Pohang-si, Gyeongsangbuk-do, Republic of Korea  
Area : 10,000m<sup>2</sup>



### Samshin Research Institute

Add : 1952, Donghae-daero, Heunghae-eup, Buk-gu,  
Pohang-si, Gyeongsangbuk-do, Republic of Korea  
Tel : +82-54-262-2229  
Area : 1,500m<sup>2</sup>



### Samshin Vietnam

Add : Plot I-4B, My Xuan B1 – Tien Hung Industrial Park,  
My Xuan Ward, Phu My Town, Ba Ria-Vung Tau  
Tel : +84-02-543-922939  
Area : 10,000m<sup>2</sup>

## Business area

### HEATING PLANT

- ROTARY KILN
- DRYER

### MIXING PLANT

- MIXER

### TRANSFER SYSTEM

- FEEDER
- CONVEYOR
- AIR VIBREAKER

### REVERSE ENGINEERING

### SEPARATOR SYSTEM

- SCREEN



# SAMSHIN PRODUCT LINE-UP

ROTARY KILN

DRYER

VIBRATING FEEDER

MAGNETIC FEEDER

VIBRATING SCREEN

CONVEYOR

MIXER

REVERSE ENGINEERING

# ROTARY KILN



## Types according to heating method

Heating Method	Advantages	Refractory	Gas flow
Direct-fired	High efficiency	Installed (Protect shell from high temperature and maintain heat)	Counter current rotary kiln - Heat and gas flow as opposed to material flow
			Co-current rotary kiln - Heat and gas flow in the same direction to material flow
Indirect-fired	Low inflow of fine material and accurate temperature control	Non-installed (For heat efficiency)	Cross-Flow rotary kiln - Material flow is perpendicular to heat flow



<Direct-fired Rotary kiln>



<Indirect-fired Rotary kiln>

# ROTARY KILN

## Applications

Because rotary kilns use heat to cause a physical change or chemical reaction within the material, both direct and indirect-fired kilns can be used to carry out a variety of processes.

### — **CALCINATION**

Calcination refers to the process of heating a material to a temperature that will cause chemical dissociation(chemical separation).

This process is used frequently in the creation of inorganic materials.

### — **THERMAL DESORPTION**

Thermal desorption is also a separation process. This process uses heat to drive off a volatile component from an inorganic mineral, such as sand. The component is vaporized at the increased temperature, causing a separation without combustion. In some cases, an indirect rotary kiln would be best for this application, because the volatile chemicals may be combustible.

### — **ORGANIC COMBUSTION**

Organic combustion refers to the treatment of organic wastes with the intent of reducing mass and volume.

Organic waste is treated in the kiln, leaving behind an ash with considerably less mass and volume.

This allows for more efficient and effective deposit of waste materials into landfills.

### — **SINTERING/INDURATION**

Sintering is the process of heating a raw material to the point just before melting. This increases the strength of the material, and is commonly used in the proppant industry, where sand or ceramic materials are made stronger.

### — **HEAT SETTING**

Heat setting involves bonding a heat resistant core mineral with another, less heat resistant coating material.

Unlike an unheated coating process, here, a rotary kiln heats the coating material to just below liquefaction point, allowing it to coat the heat resistant core more evenly and more securely. This process is commonly seen in the manufacture of roofing granules, where a mineral such as granite is coated with a colored pigment, producing a product that is both durable and aesthetically pleasing.

### — **REDUCTION ROASTING**

Reduction roasting is the removal of oxygen from a component of an ore usually by using Carbon Monoxide (CO).

The CO is typically supplied by mixing a carbonaceous material such as coal or coke with the ore or by feeding it separately.

# ROTARY KILN

## Performance



**posco**

Capacity : 82ton/day  
Size : ID 2.4m x L 20m  
Rotary Kiln - 2set  
Rotary Cooler - 2set

---

Capacity : 400ton/day (Burnt Lime)  
Size : ID 3.6m x L 40m  
Preheater - 1set  
Rotary Kiln - 1set  
Vertical Cooler - 1set

---

Capacity : 500ton/day  
Preheater Capa-up 350ton -> 500ton



**HYUNDAI  
STEEL**

Capacity : 400ton/day (Burnt Lime)  
Size : ID 3.1m x L 42m  
Preheater - 1set  
Rotary Kiln - 1set  
Vertical Cooler - 1set



**Lynas**  
CORPORATION LTD

Capacity : 165ton/day  
Size : ID 3.5m x L 60m  
Rotary Kiln - 2set

# DRYER

## Grind Classifying Dryer

### Feature

- Drying, crushing and classifying in a single machine
- Fast drying speed due to increase of specific surface area
- No thermal deformation of raw materials due to instant drying
- No spurt and pollution due to negative pressure (-) operation
- Easy control of moisture and particle size
- Continuous manual / automatic operation is possible
- Compact, easy to operate and maintain

### Application

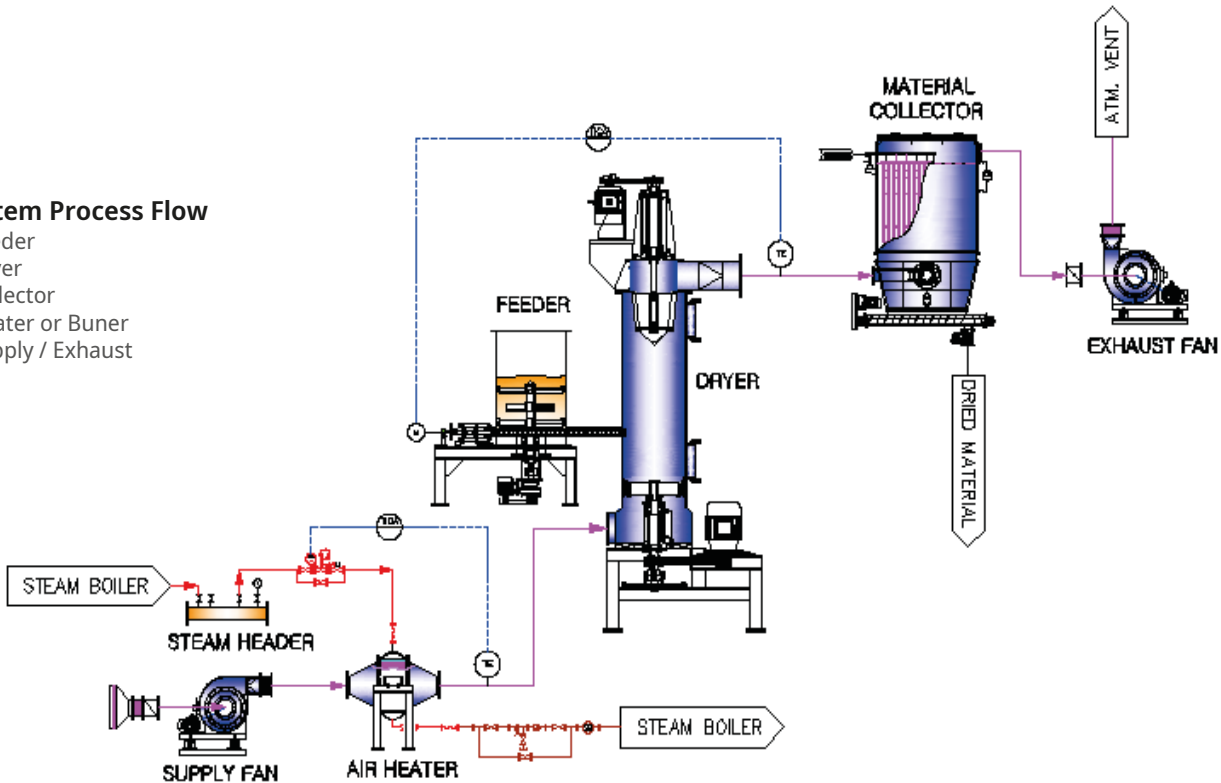
- Drying CAKE phase after filter press or centrifugal dehydrator
- Drying organic / Inorganic dyes, pigment
- Drying foodstuff, powder additive
- Drying ceramic, calcium carbonate, carbon black
- Drying material requiring uniform particle size

※ CAKE : Dehydrated sludge passed through filter



### System Process Flow

- Feeder
- Dryer
- Collector
- Heater or Buner
- Supply / Exhaust



### Principle

The dry matter is supplied through the metering feeder, and the drying air is supplied to the dryer by heating in the air supply fan and the heater.

Dry matter supplied to the dryer are crushed and pulverized by a high speed rotary mill at the bottom of the dryer to increase the specific surface area, and are instantly dried in contact with hot air to be transferred to the upper classifier together with dry air.

In the rotating classifier, the repulsive centrifugal force to control the passage of particles and the normal force of the airflow are acted. The particles with small centrifugal force pass through the classifier and are separated from dry air to be collected into the product.

Large particles that can not pass through the classifier sink to bottom and undergo regrinding / classification in the mill.

GCD dryer is a device that processes drying / grinding / classification at the same time. This is a continuous airflow dryer that can control the particle size by controlling rotation speed of the grinding / classifier.



# DRYER

## Rotary Vacuum Dryer

### Feature

- Low temperature drying by vacuum operation
- Drying and recovery of volatile organic solvents
- Efficient for drying heat-sensitive materials
- Fast drying by supplying heat to the rotating shaft
- Wide application range of powder, granule, slurry, etc.
- Safe with low temperature operation

### Application

- Drying Slurry
- Drying foods (powdered soup) with low heat resistance
- Drying compound containing organic solvent
- Solvent recovery of organic dyes / pigments
- Drying materials with phase changes at high temperatures



## Vibrating Conveyor Dryer

### Feature

- No damage to drying material of granulation
- Easy adjustment of residence time by variable vibration motor
- High drying efficiency due to high thermal capacity coefficient
- Continuous automatic operation is possible.
- Driving part is small.
- Operation and maintenance are easy

### Application

- Drying organic / inorganic compounds on FLAKE
- Drying of granulated, molded granular material
- Molded grocery drying
- Drying catalyst on granulation
- Drying molded Zeolite, Fertilizer
- Drying various granular materials with a certain size

## Fluidized Bed Dryer

### Feature

- No damage to drying material of particle
- Easy adjustment of residence time
- High drying efficiency due to high thermal capacity coefficient
- Easy quality control.
- Small installation area
- Operation and maintenance are easy.

### Application

- Drying organic / inorganic compounds on FLAKE
- Drying of granulated, molded granular material
- Molded Grocery Drying
- Drying catalyst on granulation
- Drying molded Zeolite, Fertilizer
- Drying various granular materials with a certain size

## Disc Dryer

### Feature

- Wide heat transfer surface and compact device
- Easy adjustment of residence time during operation
- High drying efficiency due to high heat transfer coefficient
- Small load on environmental facilities due to low amount of exhaust gas
- Reduced operating costs by heat source circulation
- Low risk of fire and easy operation

### Application

- Drying sludge of water treatment in plant
- Drying sewage sludge
- Drying food waste
- Drying fertilizer, feed(fish meal, concentrated by-products)
- Drying CAKE product
- Drying various dehydrated products

※ CAKE : Dehydrated sludge passed through filter



# VIBRATING FEEDER

## Feature

- Continuously transport large quantities of raw materials when inverter panel are not needed.
- Possible to manufacture according to site conditions (open type, sealed type, Liner type)
- No breakage of raw materials during transfer
- Feed amount can be adjusted (Control unbalance Weight, Inverter Control, etc.)
- Installation according to site conditions (Hanger, Support)

## Application

- Cement, aggregate, grain, medicine, etc

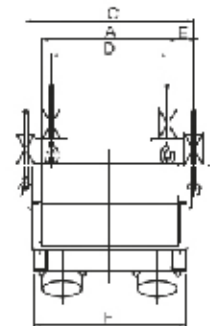
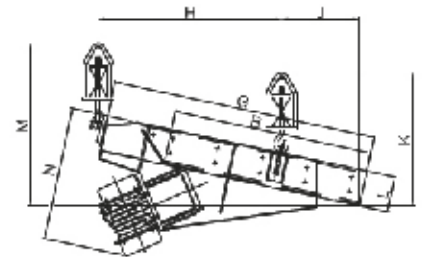


## Specification & Size

MODEL	SIZE W x L x H(mm)	Installation Angle	Vibrator (kWxPxEA)	Capacity (TON/HR)			Weight (kg)
				Iron ore (2.0)	Sand (1.6)	Coal (0.8)	
SHVF-350-0.9	350x900x140	~12°	0.2x4x2	(40)60	(30)50	(20)30	120
SHVF-450-0.9	450x900x140		0.4x4x2	(90)125	(75)115	(40)63	165
SHVF-600-1.1	600x1100x180		0.75x4x2	(140)200	(120)190	(65)100	190
SHVF-750-1.2	750x1200x210		0.75x4x2	(295)370	(235)315	(125)190	320
SHVF-900-1.5	900x1500x250		1.1x4x2	670	560	330	450
SHVF-1100-1.6	1100x1600x280		1.5x4x2	870	750	440	930
SHVF-1250-1.8	1250x1800x300		2.2x6x2	1050	980	470	1130
SHVF-1500-1.8	1500x1800x410		3.7x6x2	1200	1100	700	2080
SHVF-1800-1.8	1800x1800x480		7.5x6x2	2000	1600	1000	3180
SHVF-2100-2.1	2100x2100x500		11x6x2	3200	2600	1600	4040
SHVF-2400-2.4	2400x2400x510		11x6x2	3600	3000	2000	4540

MODEL	Dimension (mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
SHVF-350-0.9	350	900	460	240	40	440	1250	950	310	400	140	620	530	
SHVF-450-0.9	450	900	630	380	50	540	1250	950	310	400	140	750	560	
SHVF-600-1.1	600	1100	820	500	50	560	1480	1030	450	600	180	800	650	
SHVF-750-1.2	750	1200	960	650	60	700	1600	1100	470	630	210	820	690	
SHVF-900-1.5	900	1500	1200	770	60	840	2040	1460	550	760	250	1100	900	
SHVF-1100-1.6	1100	1600	1400	950	70	1000	2200	1570	600	800	280	1180	960	
SHVF-1250-1.8	1250	1800	1560	1050	80	1150	2400	1700	660	930	300	1200	1000	
SHVF-1500-1.8	1500	1800	1880	1250	90	1380	2660	1910	700	1300	410	1450	1300	
SHVF-1800-1.8	180	1800	2220	1500	100	1660	2830	2000	760	1360	480	1500	1390	
SHVF-2100-2.1	2100	2100	2560	1720	120	1920	3150	2250	840	1500	500	1740	1600	
SHVF-2400-2.4	2400	2400	2960	2100	140	2200	3450	2440	950	1560	510	1800	1680	

## Outside drawing



# VIBRATING FEEDER

## Conveyor Type

### Feature

- Conveyor type is a general vibration feeder. It can be handled adding complex processes such as drying, cooling during the vibration conveying.
- It is designed as completely vibration isolation structure, minimizes noise.  
It can be installed suitably for site conditions such as horizontal type, inclined type and hanger type
- Raw material supply can be adjusted by controlling Unbalance Weight, Inverter, etc.
- Adhesive materials can be completely handled by surface coating or lining.



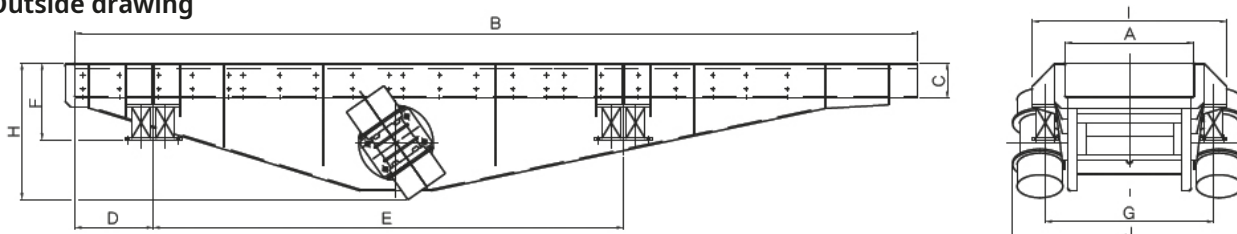
### Application

- Fine powder, granules, grains, aggregates, etc
- Food, medicine, ceramics and other industries

### Specification & Size

MODEL	Capacity (Ton/Hr)	Vibrator (kWxPxEA)	Weight (kg)	Dimension (mm)									
				A	B	C	D	E	F	G	H	I	J
SHVF-300-2.0	15	0.4x4x2	250	300	2000	150	350	1200	350	550	710	700	1100
SHVF-300-3.0	15	0.4x4x2	310	300	3000	150	350	1900	350	550	710	700	1100
SHVF-300-4.0	15	0.75x4x2	360	300	4000	150	600	2400	350	550	710	700	1100
SHVF-450-2.0	25	0.75x4x2	290	450	2000	160	350	1200	350	750	800	900	1260
SHVF-450-3.0	25	1.1x4x2	370	450	3000	160	350	1400	350	750	800	900	1260
SHVF-450-4.0	25	1.1x4x2	550	450	4000	160	600	2400	350	750	800	900	1260
SHVF-450-5.0	25	0.75x6x2	680	450	5000	160	900	2900	350	750	800	900	1300
SHVF-600-2.0	40	0.75x6x2	510	600	2000	180	350	1200	350	550	850	1050	1600
SHVF-600-3.0	40	1.1x6x2	800	600	3000	180	350	1900	500	900	850	1050	1600
SHVF-600-4.0	40	1.5x6x2	920	600	4000	180	600	2400	500	900	850	1050	1600
SHVF-600-5.0	40	1.5x6x2	1060	600	5000	180	900	2900	500	900	850	1050	1600
SHVF-750-3.0	60	1.5x6x2	860	750	3000	180	350	1900	500	1050	990	1250	1780
SHVF-750-4.0	60	1.5x8x2	1120	750	4000	180	600	2400	500	1050	1030	1250	1780
SHVF-750-5.0	60	1.5x8x2	1250	750	5000	180	900	2900	500	1050	1030	1250	1780
SHVF-750-6.0	60	2.2x8x2	1530	750	6000	180	1250	3200	500	1050	1100	1250	1840
SHVF-900-3.0	80	1.5x8x2	1050	900	3000	200	350	1900	500	1200	1030	1400	1840
SHVF-900-4.0	80	1.5x8x2	1200	900	4000	200	600	2400	500	1200	1120	1400	1900
SHVF-900-5.0	80	2.2x8x2	1590	900	5000	200	900	2900	500	1200	1100	1400	1840
SHVF-900-6.0	80	2.2x8x2	1770	900	6000	200	1250	3200	500	1200	1100	1400	1840
SHVF-1200-4.0	120	2.2x8x2	1560	1200	4000	200	600	2400	580	1800	1100	1800	2380
SHVF-1200-5.0	120	3.7x8x2	1900	1200	5000	200	900	2900	580	1800	1120	1800	2380
SHVF-1200-6.0	120	5.5x8x2	2340	1200	6000	200	1250	3200	580	1800	1150	1800	2380

### Outside drawing



# MAGNETIC FEEDER

## Inclined Magnetic Feeder

### Feature

- It is easy to adjust the feed amount by using electronic vibration transportation.
- START / STOP operation is immediately applied so that it is suitable for precision weighing.
- Management is comfortable because it does not require lubrication and maintenance

### Application

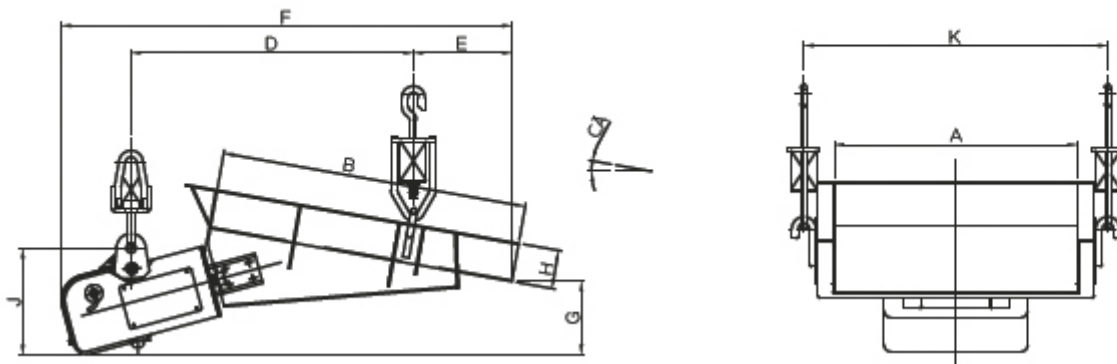
- Mainly used for metered supply and automatic weighing applications, it is used for general industrial sites such as food, medicine, chemicals, metals and mining.



### Specification

MODEL	Capacity (TON/HR)		TROUGH (WxL)	Voltage (V)	Ampere (A)	Frequency (Hz)	Frequency (rev/min)	Installation Angle	Weight (kg)
	Sand	Coal							
SHMF-10	10	-	200x610	220	1.25	50/60	3000/3600	10°	40
SHMF-35	35	18	350x700		2.5				120
SHMF-50	50	26	450x760		7				230
SHMF-100	100	52	650x900		10				560

### Outside drawing & Size



MODEL	Dimension (mm)									
	A	B	C	D	E	F	G	H	J	K
SHMF-10	200	610	10°	585	140	880	145	80	275	282
SHMF-35	350	700		750	190	1130	185	120	320	446
SHMF-50	450	760		940	225	1370	245	140	450	546
SHMF-100	650	900		1040	320	1705	325	160	550	810

# MAGNETIC FEEDER

## Horizontal Magnetic Feeder

### Feature

- It is a vibrating feeder using electromagnetic force, which allows free control of the product feed amount by the controller and no malfunction of the device during use.
- Trough over 2 meter is possible depending on site conditions



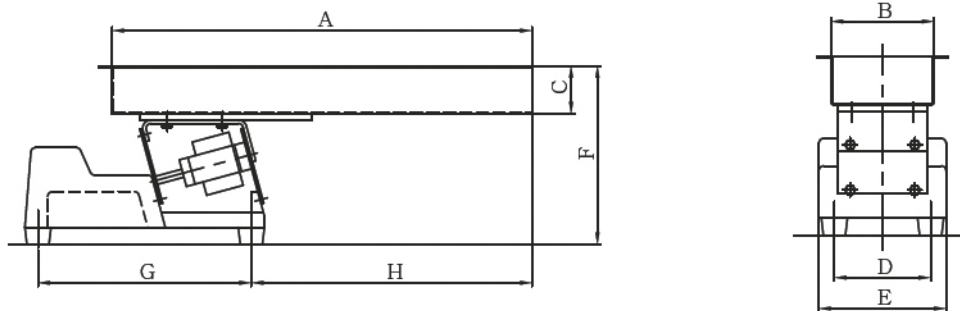
### Application

- Mainly used for metered supply, precise weighing, product transfer and discharge

### Specification

MODEL	Capacity (Sand, TON/HR)	Voltage (V)	Ampere (A)	Frequency (Hz)	Frequency (rev/min)	Weight (kg)
SHF-01	0.5	220	0.8	50/60	3000/3600	6
SHF-02	2		1.0			14
SHF-03	4		1.25			22
SHF-04	6		2.5			30
SHF-04S	8		2.8			32
SHF-05	35	6.5	280			

### Outside drawing & Size



MODEL	Dimension (mm)								
	A	B	C	D	E	F	G	H	
SHF-01	310	60	30	85	118	195	180	395	
SHF-02	500	100	50	100	135	230	270	610	
SHF-03	550	120	60	120	135	240	270	650	
SHF-04	610	150	70	125/140	185	260	310	740	
SHF-04S	630	180	75	125/140	185	265	310	760	
SHF-05	1250	400	130	230	300	490	530	1100	

# CONVEYOR

## Bucket Elevator

### Feature

- It can be installed in the minimum space
- It has less restriction of height
- It can be driven with relatively less power
- It is produced by the enclosed structure so that it can prevent dust flying and odor scattering

### Application

- It is mainly used for vertical transfer when loading the material into SILO.



## Screw Conveyor

### Feature

- It is influenced less by the pressure difference of inlet, outlet and because it is transported in proportion to the number of rotations, the adjustment of capacity is easy
- If the direction of the screw is changed, the location of outlet parts can be changed
- It can obtain the effects of the transportation, mixture and compression at the same time

### Application

- Ideal for transporting sticky materials with fluidity and viscosity
- Used to transport bulk materials in many industries, including cement, chemical, food, mining and wastewater treatment industries



## Flow Conveyor

### Feature

- It is produced by the completely sealed structure so that it can prevent dust flying and odor scattering
- Excellent durability by High-strength chain of SCM440 material
- it is available to design with various shapes and sizes depending on capacity, material, length.
- Good transfer rate due to dust transfer in closed casing

### Application

- Suitable for transporting large and small lumps of material such as coal, coke and combustion waste
- Mainly transporting for feed, dust and cement
- Applicable to horizontal or slight slopes



## Apron Conveyor

### Feature

- Designed for horizontal and inclined conveying
- Used to move from one stage of production to another
- Easy to convey large and heavy materials
- Ideal for special requirements, such as transporting materials at high temperatures

### Application

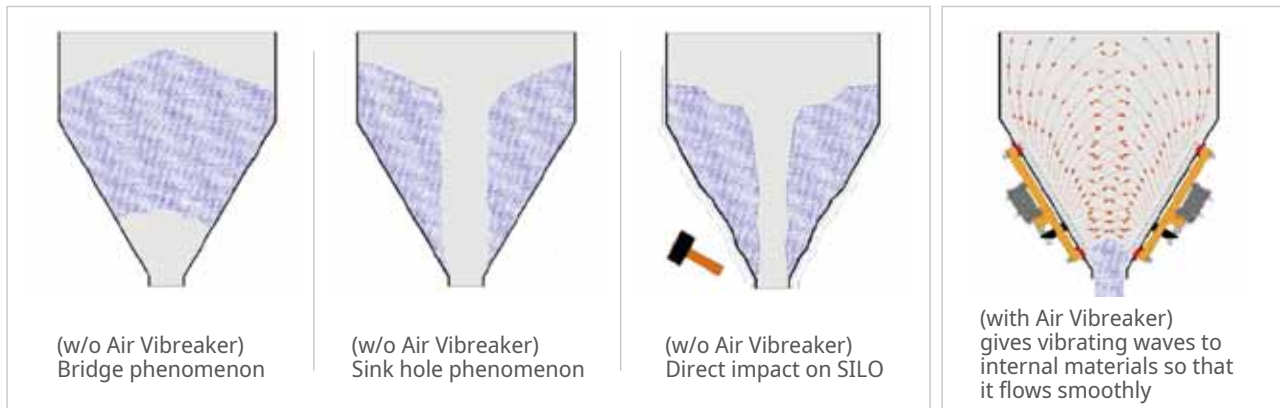
- Used in manufacturing, agriculture and chemical industry
- Transportation of high temperature and rough materials such as cement, glass, heat treated material
- Used when is needed durability for conveying hard material



# AIR VIBREAKER

## Principle

AIR VIBREAKER is a product that is designed to relieve bridge and sinkhole phenomena that appear in HOPPER, SILO, CYCLONE, and others. It is a groundbreaking product that vibrates the material inside the HOPPER to make flow of material well, rather than directly dealing a blow to HOPPER such as the existing AIR KNOCKER and MAG HAMMER



## Feature

- Internal structure is simple and semi-permanent
- Easy installation and handling of the device.
- No damage or deformation since HOPPER and SILO are not directly hit
- There is no risk of dust explosion by using AIR rather than electricity
- Vibration wavelength of the internal vibration plate can be adjusted by controlling compressed air

## Operating Method

- It is possible to operate continuously by keeping on supplying compressed air when raw material is discharged from HOPPER or SILO.
- It is possible to operate only when needed by intermittent supplying compressed air using SOLENOID VALVE and TIMER.
- Control panel can be used for automation.
- ON / OFF SWITCH type or MANUAL VALVE type is available.

## Design Consideration

- Air vibreaker can be selected depending on the angle of repose about HOPPER. It can be installed up to 2 or 3 units by considering diameter of HOPPER and SILO.

# VIBRATING SCREEN

## Feature

- It is a general oscillating screen for separation raw materials during the vibrating transfer
- Detachable design for easy internal cleaning
- Noise is minimized due to the complete vibration isolation structure
- Various installation such as horizontal type, inclined type, hanger type, depending on site condition
- Various applications such as wire mesh and **perforation** depending on the state, shape and size of raw material
- Applied equipment to prevent clogging of mesh depending on raw materials

## Application

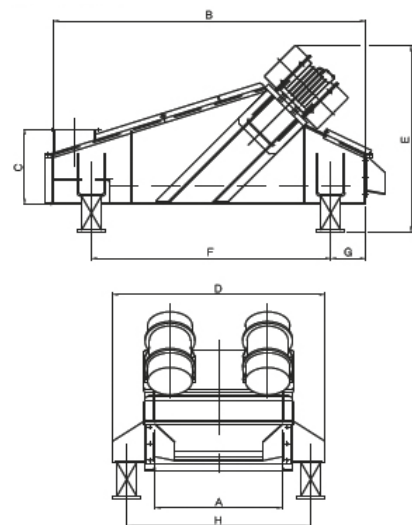
- Applicable in various material such as fine powder, granule, grain, aggregate
- Applied to the separation of powder and particle (sand gravel, crushed material, etc.)
- Applied in across industrial such as food, chemical, ceramic, etc



Upper vibratory size

## Outside drawing & Size (Upper vibratory size)

MODEL	Dimension (mm)							
	A	B	C	D	E	F	G	H
SHVS-450-1.2	450	1200	350	950	700	780	220	780
SHVS-600-1.5	600	1500	400	1180	800	1000	250	1000
SHVS-750-1.5	750	1500	400	1280	930	1050	250	1100
SHVS-900-1.8	900	1800	480	1450	1100	1350	300	1250
SHVS-900-2.4	900	2400	480	1450	1200	1800	320	1250
SHVS-1200-2.4	1200	2400	480	1840	1320	1800	320	1600
SHVS-1200-3.0	1200	3000	530	1840	1370	2300	350	1600
SHVS-1500-3.0	1500	3000	530	2140	1460	2300	350	1900
SHVS-1500-3.6	1500	3600	530	2140	1500	2700	400	1900
SHVS-1500-4.8	1500	4800	580	2240	1680	3900	400	2000
SHVS-1800-4.8	1800	4800	580	2580	1700	3900	450	2300



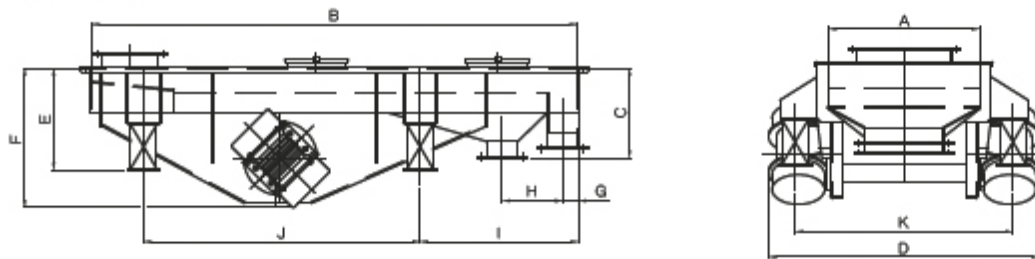


# VIBRATING SCREEN



Lower vibratory size

## Outside drawing & Size (Lower vibratory size)



MODEL	Dimension (mm)										
	A	B	C	D	E	F	G	H	I	J	K
SHVS-450-1.2	450	1200	300	800	410	620	50	200	450	820	640
SHVS-600-1.5	600	1500	300	960	450	680	50	200	500	1100	800
SHVS-750-1.5	750	1500	300	1150	450	780	70	200	500	1080	950
SHVS-900-1.8	900	1800	380	1260	530	1110	70	200	500	1480	1100
SHVS-900-2.4	900	2400	380	1260	530	1110	70	200	540	1950	1100
SHVS-1200-2.4	1200	2400	420	1620	570	1250	100	200	540	1950	1400
SHVS-1200-3.0	1200	3000	420	1620	570	1250	100	200	750	2150	1400
SHVS-1500-3.0	1500	3000	420	1700	600	1350	110	200	750	2150	1700
SHVS-1500-3.6	1500	3600	420	1700	600	1350	110	200	800	2650	1700
SHVS-1500-4.8	1500	4800	420	2050	650	1550	120	260	1300	3400	1800
SHVS-1800-4.8	1800	4800	420	2050	700	1650	120	260	1300	3400	2100

# VIBRATING SCREEN

## S-Type

### Feature

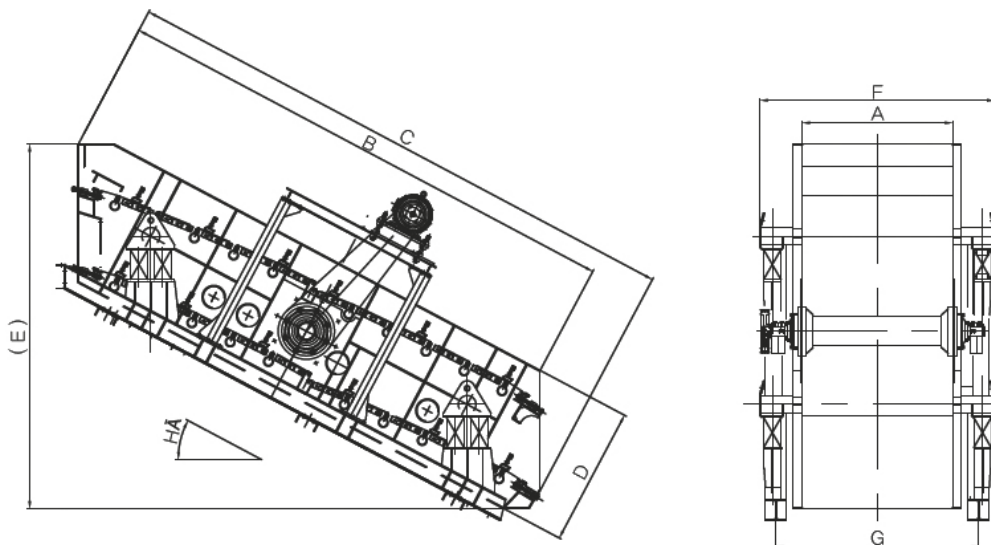
- Low energy consumption and noise compared to screen area
- Screen Mesh is split type so that it is easy to replacement and maintenance.
- Flow status of raw materials can be checked during operation and relatively large raw material separation is possible.
- Machine is stable when starting and stopping.
- Ensures a complete sealed design even in field conditions where a lot of dust

### Application

- Raw material handling system such as Cement, Aggregate, Limestone, Coal, Iron Ore
- Various applications such as primary crushed raw material or fine particle separation



### Outside drawing & Size



MODEL	Dimension (mm)								Motor (kW)
	A	B	C	D	E	F	G	H	
SHVS-900-2.0	900	2000	2440	1000	2500	1380	1130	10~20°	11
SHVS-1200-4.8	1200	4800	5350	1300	3400	1900	1600	15~20°	15
SHVS-1500-4.8	1500	4800	5350	1300	3400	1980	1680	15~20°	18.5
SHVS-1800-5.5	1800	5500	6150	1550	3700	2600	2240	15~20°	22

# VIBRATING SCREEN

## Exciter

### Feature

- Machine is stable when starting and stopping.
- Large, high-load raw materials can be screened for large-capacity using the split application of the Exciter Drive.
- Durable structure without trouble
- Exciter's vibratory force can be changed operation condition freely.
- Excellent performance is guaranteed even in condition of dusty and rainy
- 2~3-stage screen and 1~2 drive connection are available depending on the application condition.

### Application

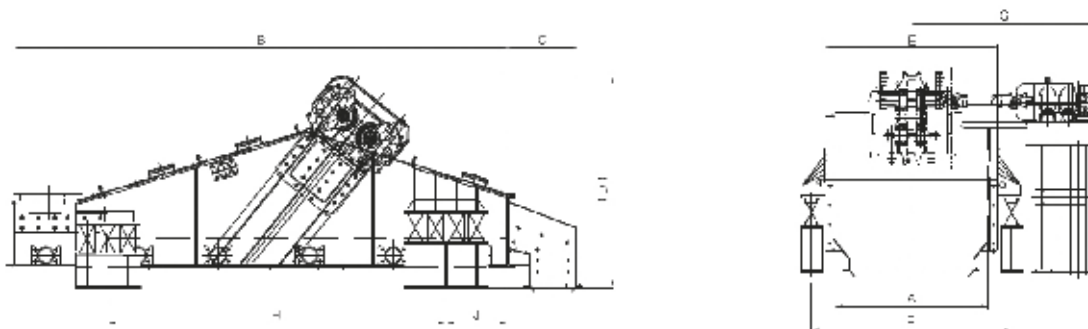
- Raw material handling system such as Cement, Aggregate, Limestone, Coal, Iron Ore



### Specification & Size

MODEL	Square (m <sup>2</sup> )	Exciter Drive	Motor (kW)	Frequency (VPM)	Weight (kg)	Dimension (mm)						
						A	B	C	D	E	F	G
SHES-1200-3.0	3	SHEX-200	7.5~11	800~1200	2700	1200	3000	700	1700	1500	1800	1800
SHES-1400-3.6	4.6	SHEX-200	7.5~11	800~1200	3000	1400	3600	700	1850	1750	2050	2000
SHES-1600-4.8	6.2	SHEX-200	11~15	800~1200	3700	1600	4800	800	2100	1900	2200	2100
SHES-1800-5.4	7.8	SHEX-400	11~15	800~1200	4600	1800	5400	800	2180	2180	2500	2250
SHES-1800-6.0	8.6	SHEX-400	15~22	700~1000	4700	1800	6000	800	2180	2180	2500	2250
SHES-2100-6.0	9.8	SHEX-600	15~22	700~1000	5700	2100	6000	800	2300	2500	2950	2400
SHES-2400-7.0	13.1	SHEX-600	15~37	700~1000	7000	2400	7000	800	2450	2700	3350	2700
SHES-2700-7.0	14.4	SHEX-600	15~37	700~1000	8000	2700	7000	900	2500	3300	3800	2880

### Outside drawing



# MIXER

## Non-Gravity Mixer

### Feature

#### The Fluidized Zone Mixing

The fluidized layer area is formed inside the mixing chamber and rapid mixing is carried out in a zero gravity state regardless of the material's particle size, specific gravity, shape.

#### Homogeneous Mixing

The dynamic structure of the paddles ensures that the raw materials are distributed and moved radially, so that even minor additives with a mass ratio of about 1: 100,000 are uniformly mixed.

#### Gentle Mixing

Since the rotating shaft is low speed, there is no impact and shear force on the raw material. Therefore mixing is performed without damaging the raw material.

#### Short Mixing Time

In the case of powder/particle mixing, the mixing time is extremely short and is mixed within 1 minute or within a few seconds.

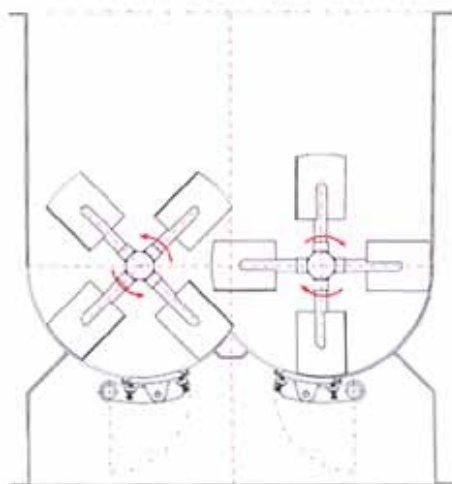
#### Economical mixing

Mixing in a short time reduces operating costs, maximizes productivity, and enables mass production with small scale equipment. Therefore, initial equipment and operation maintenance cost are reasonable

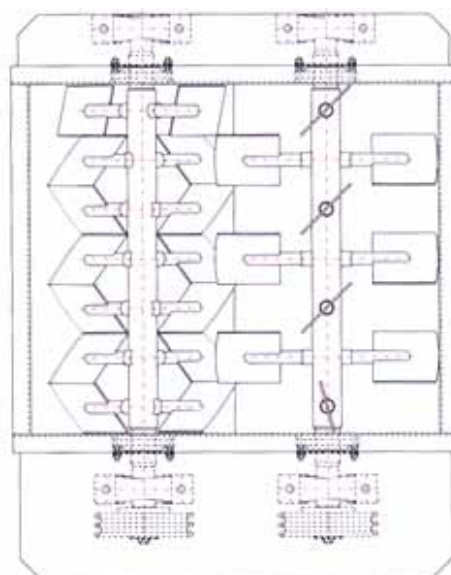


### Application

It is mainly used when mixing molasses feed and cereal products, and is widely used in food, grain, feed, chemical, castings, ceramics, dyes and pollution prevention industries. It can be used for mixing powder + liquid, watery dough + dry powder, high viscosity, and semi-liquid state. Heavy & light weight production, Pug mill can be also applied.



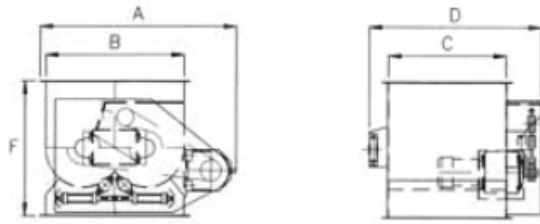
FRONT VIEW



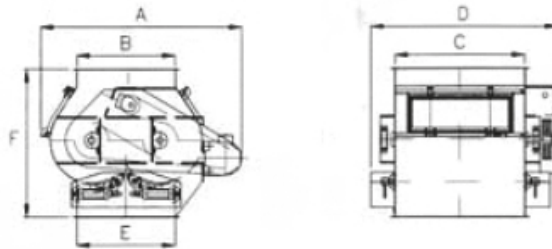
TOP VIEW

# MIXER

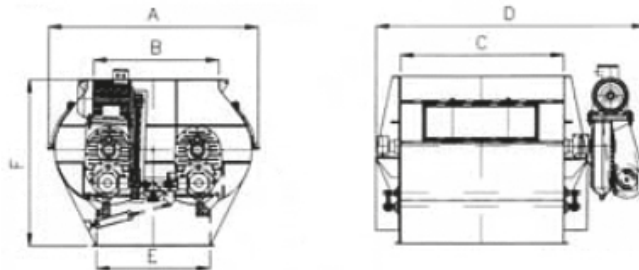
## Specification



F-6 ~ F-500



F-750 ~ F-1500



F-2000 ~ F-8000

MODEL	Batch Size	A	B	C	D	E	F (STD)	F (HIGH)	Weight (kg)
F-20	20	660	470	400	900	470	485	655	250
F-60	60	960	680	570	930	680	810	810	280
F-120	120	1110	840	720	1140	840	810	930	450
F-200	200	1310	1000	850	1300	1000	950	1150	800
F-350	350	1630/1800	1250	1000	1490/1685	1250	1100	1300	1150
F-500	500	1805/1850	1360	1160/1640	1630	1360	1180	1380	1500
F-750	750	2100/2150	1000	1320	1915	1000	1480	1680	2800
F-1000	1000	2200/2300	1250	1450	1980/2180	1110	1560	1760	4200
F-1500	1500	2530	1260	1675	2350	1150	1725	2050	4500
F-2000	2000	2930	1500	1870	2580	1450	2040	2300	6000
F-2500	2500	2500	1620	1980	3350	1550	2100	2420	7000
F-3600	3600	2900	1750	2320	3850	1600	2500	2500	8000
F-5000	5000	3150	2000	2500	4100	2000	2500	2500	10500
F-6000	6000	3350	3250	2700	4200	2250	2500	2500	12000
F-8000	8000	3730	3540	3010	4550	2450	2500	2500	13000

# MIXER

## Ribbon Mixer

### Feature

- Uniform and stable mixing
- Less noise and vibration
- Stable, easy to operation, maintenance
- No overflow due to overload

### Application

- RIBBON shaped revolving body is installed in the mixing chamber, which is relatively inexpensive and most commonly used type. It is widely used in the chemical, food, medicine, etc.



## Plough Mixer

### Feature

- Short mixing time
- Excellent mixing of raw materials with a wide difference of particle size and specific gravity
- Excellent effect in adding small amounts of additives when mixing powders
- Almost no lumping of raw materials when using high speed chopper
- The material that needs to be mixed and reacted is very suitable by a massage effect
- Excellent crushing and mixing with high speed chipper function

### Application

- It is mainly used in chemicals, foods, medicines such as dry powder, wet sludge mixing, wet granulation. It is also used to make abrasives such as brake linings.
- It is suitable for adhesive or deadlock additive mixture, mixing powders + liquids, powders + trace additives and complex processing

# REVERSE ENGINEERING

## Samshin's Reverse Engineering

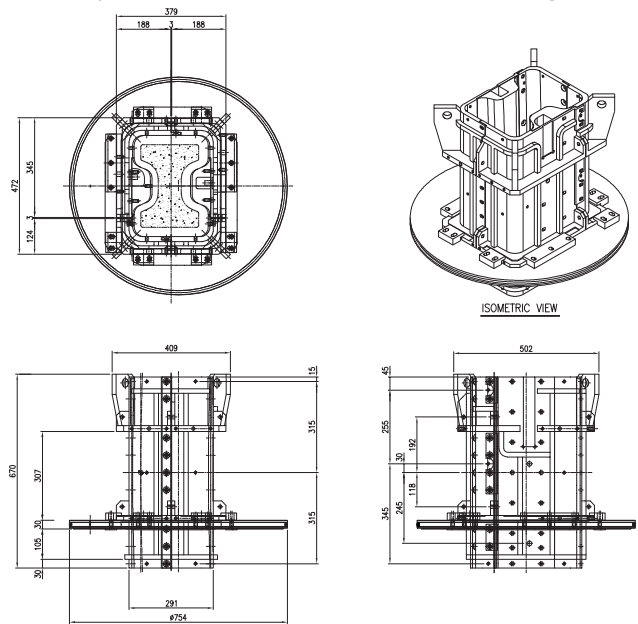
- Reverse engineering through long time know-how of industrial machine manufacturing
- High quality reverse engineering through complete system analysis
- Reduce costs and time through reverse engineering of products already proven in practice.

## Reverse Engineering manufacturing solution

(Example : Mould Water Jacket)

### 1 Part Sketch and Drawing design

Design by sketching the actual item used in site. Consideration should be given to the deformation caused by the use of existing products. Furthermore, improvements such as problems in use shall be reflected in the design.



### 2 Fabrication

The mould water jacket is fabricated by cutting steel sheet because the unit price is high and the surface of the part that cannot be machining is rough in appearance when manufacturing casting. Samshin presents the following management solutions in fabrication.



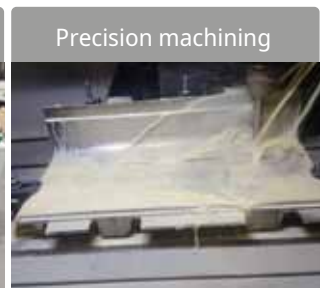
Waterjet cutting



Correction



Stress relief



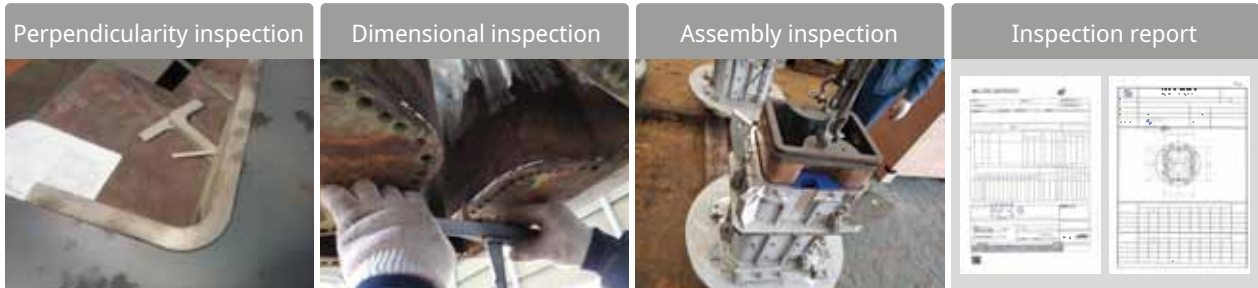
Precision machining

- ▶ Waterjet cutting: mould water jacket is made of STAINLESS more than 30T. Waterjet cutting is applied because cutting surface is uneven when cutting gas and laser.
- ▶ Correction : In order to prevent welding deformation caused by rib reinforcement welding on the outside, welding is performed after fixing the support. At the end, correction is performed after welding
- ▶ Stress relief: Residual stress reduction technology (VSR : Vibratory Stress Relief) is applied to reduce the partially existed residual stress and improve quality and life.
- ▶ Precision Machining: The ultra-precise machining is performed with the latest machinery, and the error range is  $\pm 0$

# REVERSE ENGINEERING

## 3 Inspection

Quality control checks are carried out when mold water jacket is fabricated. Samshin presents the following management solutions.



- ▶ Perpendicularity inspection: Precision bending is done by hydraulic bending, and jig for self-gauge is manufactured to check right angle.
- ▶ Dimensional inspection: Verify that the product is consistent with the dimensions of the drawing and perform an overall dimensional inspection.
- ▶ Assembly inspection: Check the 3.5mm gap between the mold and the water jacket housing by own make gap gauge. and make sure that the waterway is assembled correctly.
- ▶ Inspection Report: Issue necessary inspection report such as Mill Report, Dimensional Inspection Report, Visual Inspection Report.

## 4 Painting and Packaging

Just as important as making a product is to clean the finished product, pack it well, and deliver it to the customer. Samshin offers the following management solutions for the painting and packaging process.



- ▶ Acid cleaning: mould water jacket is made of stainless steel, and no painting is required, but metal oxide on the surface is removed by Acid cleaning. This process, which removes the welding soot and surface stains, allows you to check again for material defects.
- ▶ Packaging: Internal shock absorber is used to prevent damage of the product. Product is wrapped with rustproof vinyl to prevent the ingress of moisture.
- ▶ Boxing: Sealed wooden box is made to prevent moisture, dust, shock and theft from outside.
- Heat Treatment Result: Using heat-treated wood at the pallet is possible to quickly pass through the agricultural and livestock quarantine inspection.



# REVERSE ENGINEERING

---

## 5 Installation

In order to make the most of the right product, it is important to install it properly. Depending on how the product is installed on site, it is the first step in extending the life of the equipment and reducing downtime due to maintenance. Samshin offers the following management solutions during the installation process:

### Precise assembly

If the assembly of the water jacket and the oscillator connected is not correct, the oscillation mark generated when the product comes out. As this affects the internal quality of the product, accurate assembly of the surrounding equipment and the water jacket is essential.

### Coolant temperature management and site-specific coolant treatment

The proper temperature change of cooling water is 6 °C ~ 8 °C. Inaccurate temperature control will result in poor cooling and uneven product quality. Cooling water that has passed through hot molten metal up to 1000 °C is treated and reused in two ways. The first is an open (direct) cooling method in which the coolant that has passed through the waste water is mixed with other unused cold coolant, filtered through a filter, and reused. The second method is indirect cooling, in which the coolant pipe is indirectly absorbed heat by placing the coolant pipe alongside other pipes with relatively cold liquid.

### Field Engineer

If the manufacturer's technician installs it by hand, he can quickly determine what to look for and what errors. It can also provide equipment maintenance information to field maintenance workers. Many errors can be reduced, if field technicians identify and supervise installation work.

Plant Engineering Company



E-mail : [info@samshineng.com](mailto:info@samshineng.com)  
Tel : +82-54-262-2229  
[www.samshineng.com](http://www.samshineng.com)