# EPS Machine

# Mould A Green Life

Offering Turn-key EPS Project.







Hangzhou Epsole Technologies Co.,Ltd.is a private-owned enterprise located in Hangzhou, China.With over 10 years experience,the company is famed for its profession in R&D, manufacturing and sales of EPS machinery,EPS Accessories,EPS raw materials and EPS moulds,etc.

Epsole has been focusing on the cooperation with customers, supply of technical information, sharing of intelligence and installation and working effciency so as to improve the company's competitiveness and realize mutual benefits, Epsole is sincerely looking forward to cooperate with all customers that have interests in our products and technical services. We are confident to provide high quality services for customers from all over world.

INNOVATION

ENVIRONMENTAL PROTECTION

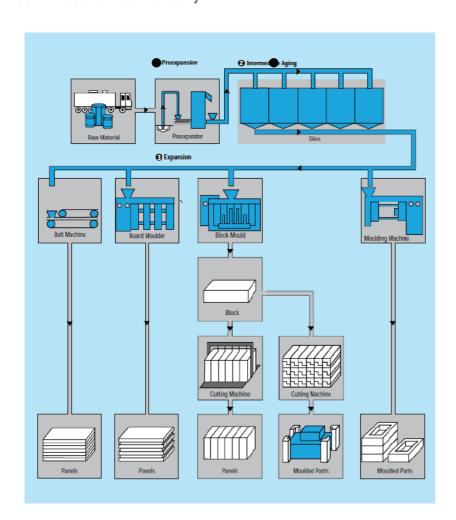
EFFICIENT ENERGY-SAVING



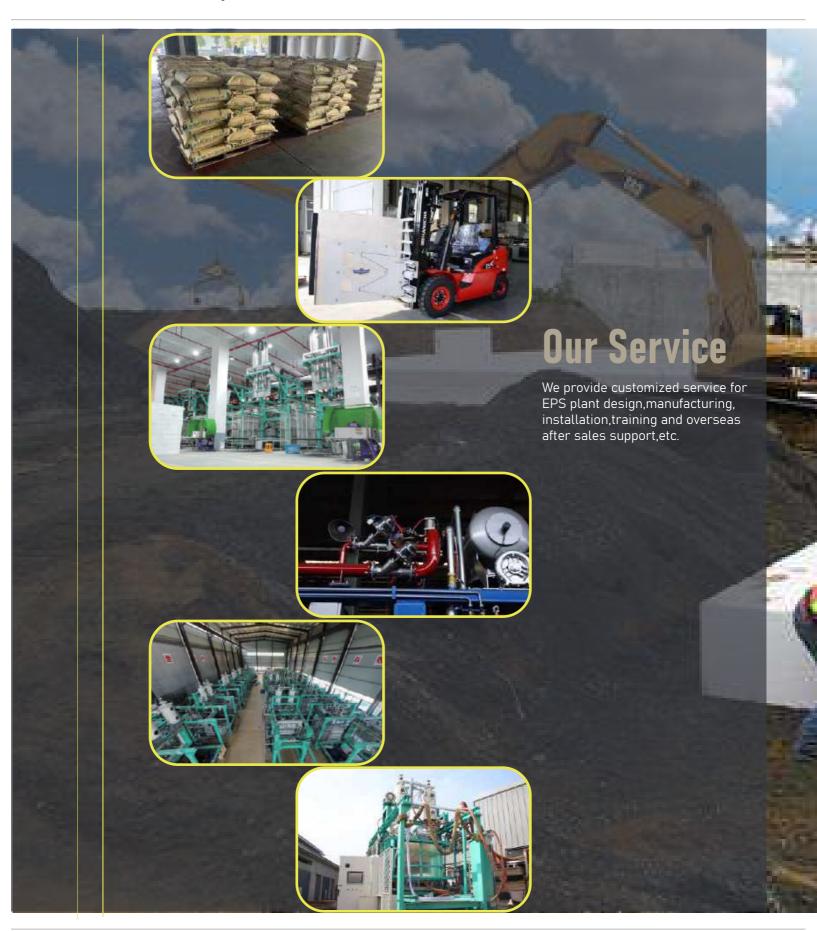


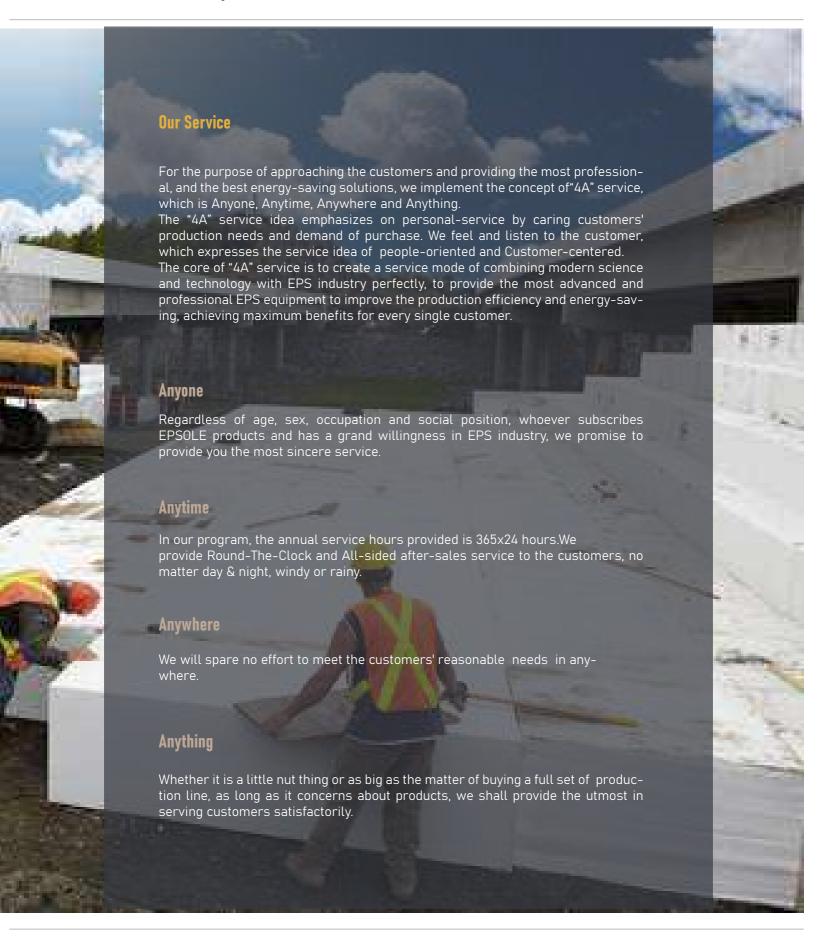
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# **Manufacturing Process**







EPS(Expandable Polystyrene)Raw material

Pre-expander

Strorage of pre-expander material



Shape moulding machine



**EPS** mould

Electrical parts package



Block moulding machine



Vertical

### Apply to:

- Agricutural and fish box

- ICF construction parts
- Decoration parts
- Other special application such as helmet,model...,etc

#### Apply to:

- Construction parts for decoration
  Electrical parts package
- ICF construction parts
- Decoration parts











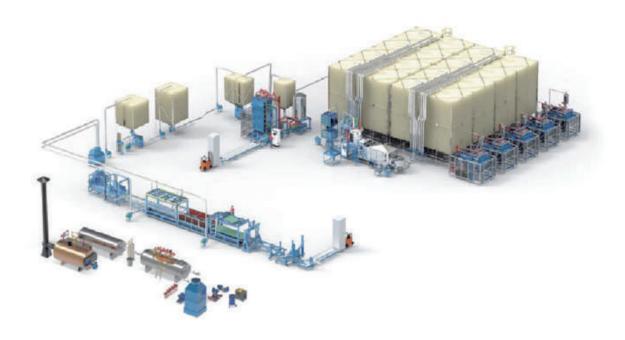












### **EPS Recycling System**













ltem	Туре						
item		ESPC-70	ESPC-90	ESPC-120			
	Diameter Volume Useable Volume	700mm 0.6m3 0.4m3	900mm 1.2m3 0.8m3	120mm 2.2m3 1.5 m3			
Steam	Entry Consumption Pressure	DN20 80-100kg/h 0.6-0.8MPa	DN40 100-150kg/h 0.6-0.8MPa	DN40 150-200kg/h 0.6-0.8MPa			
Compressed Air	Entry Pressure	DN15 0.6-0.8MPa	DN20 0.6-0.8MPa	DN20 0.6-0.8MPa			
Drainage	Condensate	20mm	20mm	20mm			
Productive Capacity	15 g/l 20 g/l 25 g/l 30g/l	100kg/h 120kg/h 150kg/h 200kg/h	150kg/h 200kg/h 250kg/h 300kg/h	250kg/h 300kg/h 410kg/h 500kg/h			
Material Conveying Line		150mm	150mm	150mm			
Power		8.93KW	9.73KW	13.33KW			
Density	First expansion Second expansion	12-30 g/l 8-11 g/l	12-30g/1 8-11 g/l	14-30 g/1 8-13 g/l			
	(LxWxH)	4700×2660×2600(mm)	4700×2930×3200(mm)	4905×4655×3250(mm)			
Weight		1300kg	1500kg	1800kg			
		5000mm	5000mm	5000mm			
Note:Machines are highly co	ustomized according to cu	stomer's requirement.					









lk s m		Туре							
Item		ESPE	3-50	ESP	B-110	ESPE	3-150	ESPB-160	
	Diameter Volume Useable Volume	500mm 0.14m³ 0.1 m³		1100mm 1.4m ³ 0.9m ³		1500mm 4.5m³ 3.2m³		5.4	Dmm 4m 5 m³
Steam	Entry Consumption Pressure	DN25 0.5-0.7kg/cycle 0.6-0.8MPa		DN50 8-11kg/ cycle 0.6-0.8MPa		DN 50 15-18kg/ cycle 0.6-0.8MPa		18-20	N100 kg/cycle .8MPa
Compressed Air	Entry Consumption Pressure	DN20 0.2-0.3m³/cycle 0.6-0.8MPa		DN25 0.5-0.6m³/cycLe 0.6-0.8MPa		DN40 0.5-0.6 m³/cycle 0.6-0.8MPa		0.5-0.8	DN40 m³/cycle D.8MPa
Drainage	Drainage Port Condensate	DN80 DN20		DN80 DN80		DN100 DN40			1150 N50
Productive Capacity		12g/l 18 g/l 25 g/l 32g/l 50g/l	80kg/h 120kg/h 125kg/h 220kg/h 280kg/h	12g/1 15g/ 20g/l 30g/1	240kg/h 320kg/h 430kg/h 600kg/h	12g/l 15g/1 20g/l 30g/l	600kg/h 900kg/h 1200kg/h 1500kg/h	12g/l 15g/l 18g/l 25g/l Second ( 8g/l 10 g/l	1400kg/h 1800kg/h 2300kg/h 2800kg/h expansion 800kg/h 1000kg/h
Material Conveying Line		150r	mm	150mm		250mm		250	)mm
		9.51	KW	16.1 KW		24.85KW		3 .!	5KW
Density		12-14	0g/1	12-30g/I		12-30g/I		12-	30g/I
Density Toleranoe		<b>≤±2%</b>		≤±2%		≤5%		€	±5%
Overall Dimension	(LxWxH)	3000×3800×3800(mm)		5600×300	×4530(mm)	6500×4150×5400(mm)		8600×3500	1×5800(mm)
Weight		1500	Okg	350	00kg	500	0kg	800	00kg
Room Height Required	biubbi siistausiissal sa	5000	)mm	500	0mm	6000	)mm	700	0mm







### **Functions & Features**

- Structure:
- Welded by strong intensity square pipe and treated by drawing temper to prevent panels deformation With sand blasting treatment, corrosion resistance, life can be improved remarkably.
  - Electronic control:
- Adopting Mitsubishi PLC and Schneider touch screen, fully automatic on mould closing, filling, heating, cooling and off-mould. All electrical components are from well known brands, which make sure high efficiency and stability of machines



ltem	Unit	ESS 810A/B	ESS1012AB	ESS1214A/B	ESS1416A/B	ESS1820A/B
Mould Dimension	mm	1000×800	1200×1000	1400×1200	1600×1400	2000×1800
Max Product Dimension	mm	800×600××350	1000×800×350	1200×1000×350	1400×1100×350	1800×1600×350
Stroke	mm	220-1470	220-1470	220-1470	220-1470	220-1470
Steam Entry	mm	80	80	80	80	80
Steam Consumption	kg/cycle	6	7	8	9	11
Water Entry	mm	80	80	80	80	80
Cooling Water Consumption	kg/cycle	40-120	45-138	50-150	55-180	90-210
Compressed Air Entry	mm	25	40	40	40	50
Compressed Air Consumption	m³/cycle	1.2	1.5	1.8	2	2.5
Vacuum Pump Capacity	m³/h	165	165	230	280	280
Power	KW	10.6	10.6	14.1	16.5	20
Overall Dimension	mm	4800×1850×2970(mm)	4800×2050×3170(mm)	4970×2250×3370(mm)	4970×2440×3430(mm)	5100×2900×4030(mm)
Machine Weight	kg	4200	4800	5500	5800	7000
Cycle Time	s	60-90	60-100	60-150	100-180	100-180



- Adopts famous brands hydraulic components, differential pressure system, design, which can achieve high speed, low noise operation. The fastest mold opening and closing speed reaches 350mm/sec, achieving high speed and efficient stable operation;
- Two-points mold opening and closing, and the latest mechanism technology of mold clamping, can stabilize mold clamping pressure without leakage during production, and effectively reduce energy consumption.
- Improved pipe &valve design to minimize energy wastage while increasing reaction speed;
- The design of cooling water pipe line fastens the speed of water cooling -the ring design of copper pipe inside mould cavities increases the contact surface, resulting in more efficient cooling and smooth product surface.
  - Application of electric digital proportional valve:adopt imported electric digital proportional valve with linear position sensor to efficiently and accurately control the proportion of opening scale of the angle seat valve, and the combination with the digital pressure sensor enables the mold cavity pressure to be linearly stable, which changes the analog control of door open
- and close of traditional equipment. Imported brands of valve guarantees the stable quality of products, effectively saving steam, air, and other energy consumption;
- The bypass line of the latest heating system of EPS molding machine can effectively reduce the molding time and steam energy consumption.



- Adopts Siemens intelligent control system and User-friendly Windows embedded system operation interface resultin simple & convenient &intelligent operation;
- The control method combined of Imported electric proportional valve, linear position sensor and pressure sensor --perfectly matches the control system, enabling material feeding, heating, blowing, and water cooling, etc. to be more accurate, stable, reliable and efficient;
- The latest production molding technology results in convenient and efficient operation, the production efficiency is thus improved.



Model			ESS0813PP	ESS1214PP	ESS1318PP
Data u			233001011		233,01011
Ov	rerall	mm	5363*2710*4752	5363*3310*4852	5363*3710*4952
Mou			800*1300	1200*1400	1300*1800
Prod	uct high	mm	350	350	350
			1200	1200	1200
Rod	Diameter	mm	60	80	100
Nou	Quantity	pcs	4	4	4
		pcs	2	2	2
Hannan	Capacity	L	145	145	145
Hopper Quantity		pcs	1	2	2
			100	100	100
	Pressure		8	8	8
			4~5	4~5	4~5
	Main inlet	DN	80	80	80
Cooling	pressure	bar	4	4	4
	Consumption	kg	0~6.28	0~6.28	0~6.28
			100	100	100
	Drainage		100	100	100
	Inlet	DN	50	50	50
Air	Pressure	bar	6	6	6
	Consumption	m³	0.3~0.6	0.3~0.6	0.3~0.6
			7.5	7.5	7.5
Hydraulic	Capacity		400	400	400

Note: Machines are highly customized according to cusomer's equipment.





- Stainless steel steam chamber equipped on machine: Save mold frame cost, steaming from 3 sides (top & two flanks), fast fusion (especially good for package product as of better cross steaming)and rapid cooling.
- Hydraulic lock system: Adopts new hydraulic-mechanical lock system;
- One key to change the mould, open framework design, advanced auto rod guide and fix system. Greatly reduces machine stop period, truly realizes SMED. Mould change time<5min;
  - Robotic ar products feeding & picking system:
- I.Pre-prepare transfer materials for multi-layers steaming (Eg:Structure products & under floor board with HIPS film coating, or plastic inserts for ICF) II. Collect& stack products
- Adopts famous brands hydraulic components, differential pressure system design, which can achieve high speed, low noise operation. The fastest mold opening and closing speed reaches 350mm/sec, achieving high speed and efficient stable operation;
- Two-points mold opening and closing, and the latest mechanism technology of mold damping, can stabilize mold clamping pressure without leakage during production, and effectively reduce energy consumption.
- Improved pipe & valve design to minimize energy wastage while increasing reaction speed;





- Stainless steel steam chamber equipped on machine: Save mold frame cost, steaming from 3 sides (top & two flanks), fast fusion(especially good for package product as of better cross steaming) and rapid cooling.
- Hydraulic lock system:Adopts new hydraulic-mechanicallock system;
- Fast mould change, open framework design, advanced auto rod guide and fix system. Greatly reduces machine stop period, truly realizes QDCS. Mould change time 20-30min;
- The design of cooling water pipe line fastens the speed of water cooling -the ring design of copper pipe inside mould cavities increases the contact surface, resulting in more efficient cooling and smooth product surface.
- Application of electric digital proportional valve:adoptimported electric digital proportional valve with linear position sensor to efficiently and accurately control the proportion of opening scale of the angle seat valve, and the combination with the digital pressure sensor enables the mold cavity pressure to be linearly stable, which changes the analog control of door open and close of traditional equipment. Imported brands of valve guarantees the stable
- Quality of products, effectively saving steam, air, and other energy consumption;
- The bypass line of the latest heating system of EPS molding machine can effectively reduce the molding time and steam energy consumption.







- SIMENS PLC&Customized 15"Industrial Touch Screen (Wifi support & Romote Control)
- Intelligent Big Data Management & Control System: Remote monitoring machine status, fault feedback, remote maintenance;
- Germany GEMU valve system & Single Valve Locator Digital Proportional Control.
- Efficient steaming: Multiple PID valve pipe system monitoring steaming:1~2 bar big steaming by two steaming pipes, 2~2.5 bar by PID digital model locator valve to monitor steaming =>fast &accurate steam.
- Precisely matched Germany BOSCH hydraulic system; SIMENS motor provides stable and long service life; Cruise speed 350mm/s
- Anti-rust processing: Welding -->Heat treatment --> Ball blasting --> Twice anti rust painting --> Thermal zinc coating --> Color painting (American DUPONT heavy anti-rust paint)
- Efficient vacuum: SIMENS vacuum pump, advanced water & air cooling system; Stainless filling materials inside vacuum tank greatly improves vacuum speed. Product rate of water < 5%
- Equal lock strips ensure no steam leaking in long period, improving heat efficiency.
- Pressurized(2~4 bar)hopper filling system, patent owned,0 leakage, min.filling time and max.filling volume.
- Double Venturi hoppers design, faster and cleaner feeding.
- Multi-security system
- Product cycle time:30-60s
- Central vacuum system to save 50% energy consumption

- Adopts Siemens intelligent control system and User-friendly Windows embedded system operation interface result in simple & convenient&intelligent operation;
- The control method combined of imported electric proportional valve, linear position sensor and pressure sensor---- perfectly matches the control system, enabling material feeding, heating, blowing, and water cooling, etc. to be more accurate, stable, relible and efficient;
- The latest production mooding technology resuls in convenient and efficient operation, the production efficency is thus improved.

			SMED (Single MinuteExchange ofDie)			
	<b>Machine Ty</b>	pe	QDCS(0	Quick Die Change S	ystem)	
	•			Energy Saving		
				ESS1214S/Q/E	ESS1417S/Q/E	ESS1618S/Q/E
Out	er Diameter		mm	5363x3310x4852	5363x3610x5152	5363x3710x5352
M				1200x1400	1400x1700	1600x1800
Max.F	Product Height		mm	350	350	350
				1200	1200	1200
Guide Pillar	Outer Dian	neter		80	80	100
Guiue Fillai	Qty		pcs	4	4	4
				125	150	150
Turautic Gytinuer				1200	1200	1200
			bar	29437	42390	42390
Material Hopper	Volume		L	145	145	145
матенат поррен	Qty	Qty		2	2	2
				100	100	100
			D	65x2	50×4	50x4
				2.5	2.5	2.5
			Kg/cycle	6	7.5	9
	Inlet		DN	80	80	80
Cooling Water	Mould Ir	let	DN	50	50	50
Cooling Water	Pressu	re	bar	4	4	4
	Consump	tion	Kg/cycle	40	40-120	60-160
				100	100	100
Vacuum			L	100	100	100
	Low Pressure	Inlet	DN	65	65	65
	Low Pressure Pressure		bar	4	4	4
Compressed Air	High Pressure	Inlet	DN	50	50	50
- John pressed All	, and the second	Pressure	bar	5	5	5
				7.5	11	11
	Volum	е		400	400	400



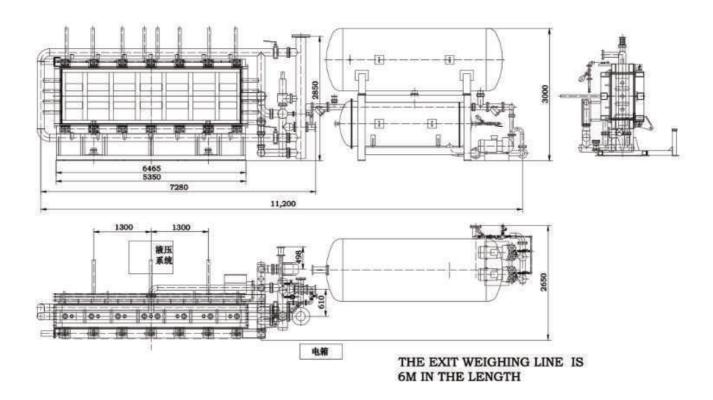






Item		ESB200V	ESB200A	ESB400V	ESB400A	ESB600V	ESB600A
Mould Cavity Size		2040×1240	2040×1240	4100×1240×	4080×1240×	6100x1240x	6100x1240x
		x1030(mm)	×630(mm)	1030(mm)	630(mm)	1030(mm)	630(mm)
		2000×1200	2000×1200×	4000×1200×	4000x1200x	6000×1200×	6000x1200x
DIOCK SIZE		×1000(mm)	600(mm)	1000(mm)	600(mm)	1000(mm)	600(mm)
	Entry	DN100	DN100	DN150	DN125	DN150	DN150
Steam	Consumption	30∼50kg/cycle	20~30kg/cycle	60∼90kg/cycle	45∼55kg/cycle	100 $\sim$ 130kg/cycle	60∼70kg/cycle
	Pressure	0.8Mpa	0.8Mpa	0.8Mpa	0.8Mpa	0.8Mpa	0.8Mpa
	Entry	DN40	DN40	DN40	DN40	DN200	DN40
	Consumption	1.5-2m³/cycle	1-1.5m³/cycle	2-2.5m³/cycle	1.8-2m³/cycle	120~170m³/cycle	120~170m³/cycle
	Pressure	0.6Mpa	0.6Mpa	0.6Mpa	0.6Mpa	0.6Mpa	0.6Mpa
	Entry	DN40		DN40		DN40	
Cooling Water	Consumption	0.2-0.4m³/cycle		0.6-0.8m/cycle		2.5-3m³/cycle	
	Pressure	04-0.6Mpa		0.4-0.6Mpa		0.4-0.6Mpa	
	Vacuum drain	125mm		125mm		125mm	
	Steam vent	150mm	125mm	200mm	200mm	250mm	200mm
	Condensate	100mm	125mm	100mm	150mm	100mm	150mm
	Blower outlet	125mm		150mm		150mm	
Throughput	15kg/m³	5min/cycle	5-12min/cycle	7min/cycle	7-18min/cycle	8min/cycle	8-18min/cycle
		20.5-24.5KW	9.5min/cycle	24.5-35.5KW	13KW	24.5-35.5KW	13KW
0 11 15:	4 14 10	5700×4000×	4000×2150×	11000×4500	6040×2270x	12600×3960x	8100x2500x
Overall Dimension	(LxWxH)	2850(mm)	2120(mm)	×3000(mmi	2250(mm)	2906(mm)	3100(mm)
Weight		6000 kg	4200 kg	12000 kg	8500 kg	15000 kg	9500 kg
Room Height Required		6000mm	6000mm	6000mm	6000mm	6000mm	6000mm

### Machine Layout:



#### Machine structure:

#### Machine structure:

- a.The machine mold are welded by strong rectangle tube and steel plate which make high strength to keep more safety of the
- b. All block mold frames are heat-treated to release the welding stress, so that the frames would not be deformed.
- c. After heating treatment, all mold frames are processed by sand blasting treatment to keep the rust away, then under coat and finishing coat are greatly improved with anticorrosion performance and long life.
- d. Adopts three Germany gauges and safety valve for multi-safety protection. The machine will be tested by water pressure and steam ,ensure the machine more stable and safe.

#### Steam System:

Three ball valves, comparing one big steam valve control system, saves 20% steam, with ISO-standard butterfly valves, greatly improve stability and long life.

#### Control System:

- a. Adopts PLC (Mitsubishi) and touch screen (Schneider) for easy operation.
- b. Equipped material level sensor to control the filling. The foam pressure sensor is optional and the whole procedure for filling, heating, cooling will be controlled automatically by PLC.



# **Automatic Central Vacuum System**

### ➡ High Performance Vacuum Assisted Cooling Systems

This is a cooling system that uses water vapor exchange to condense steam hydrate. It has a large, central vacuum condenser with multiple partitions that efficiently reduces gas temperatures to below 40 degrees Celsius. The cooling water supply system is controlled by two groups, with level switches controlling start and stop actions.

The temperature detection device adjusts water supply to match vapour supply temperature, resulting in energy savings.

### Control System

The system uses a Siemens PLC and industrial touch screen for multi-function control software. The touch screen displays real-time equipment performance and adjusts startup processes and supply conditions as needed. The system also has fault alarms and operation protection functions, as well as a computer centralized management interface.

#### Buffer Modules

A vacuum buffer tank stabilizes the system and compensates for pressure drops during supply shortages.

### Drainge Modules

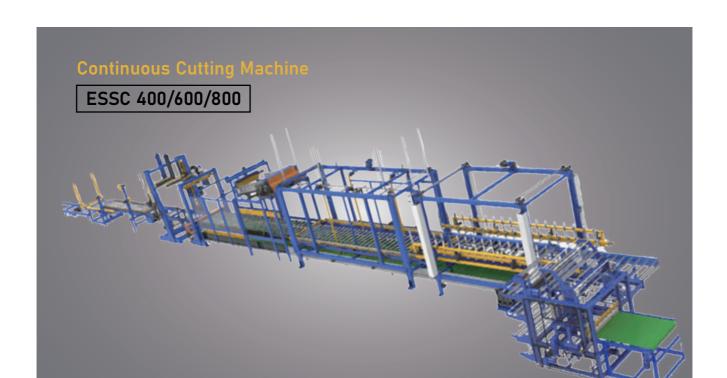
Collect water vapor mixture through large-diameter pipe to reduce back pressure, and discharge water using a large diameter pump in a vacuum environment.











## TECHNICAL DATA



Vibratio	on cutting n	nachine	Mode	ESCC-6000		
Original block	size to be	cut	mm	(6060*1250*630)		
Contour meas	surement(L	*W*H)	mm	23000*6800*3200		
Finished authins		igth	mm	2440		
Finished cutting size			mm	1000-1250		
		ght	mm	500-1260		
	horiz	ontal	mm	≥10		
Cutting size	vertical		mm	≥200		
	Piece cut		mm	≥300		
Cutting	speed		m/min	0.3-1.5		
Cutting hot-v	vire diamet	er	mm	0.4-0.6		
Power	voltage		V/Hz			
Original block co	avovor	Drive	kw	0.75,0.55,0.37,1.1		
Original block col	iveyoi	Speed	Ratio	1/50		
	g and		kw	1.5		
peeling cutti	peeling cutting Spe		Ratio	1/7.5		
l anath cuttir	, a	Drive	kw	4		
Length cuttir	Length cutting		Ratio	1/3		
Note:Machines are highly customized according to customer's requirement.						







### **Functions & Features**

The machine has strong frame, voltage adjustment device, big transformer and frequency control of motor speed, which makes multi-wire cutting and speed control available.



ltem	ESS200C	ESS400C	ESS600C	ESS800C				
Max cutting block size	2000x1300×1300mm	4000x1300x1300mm	6000x1300×1300mm	8000x1300x1300mm				
Connected Load	22.3KW	22.3KW	22.3KW	22.3KW				
	4400×2600×3250mm	6400x2600x3250mm	8400×2600×3250mm	10400×2600×3250mm				
Weight	1300kg	2000kg	2800kg	3200kg				
Nata-Machine and highly contemined according to systematic groups								







# TECHNICAL DATA



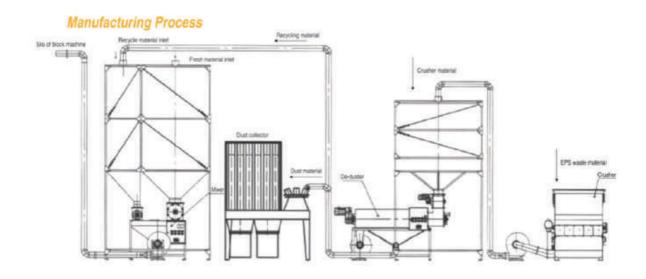
Item		Unit	ESCNC200SL	ESCNC300SL	ESCNC400SL
Max cutting	Max cutting block size mm		2000x1500x(1250-1500)	3000x1500x(1250-1500)	4000×1500×(1250-1500)
Cutting wire		mm	φ0.4G20Ni80	φ0.4G20Ni80	φ0.4G20Ni80
		N.m	18	18	18
Power		kW	5	5	3
		M/min	0-4	0-4	0-4
Cutting	Capacity	KVA	3	3	3
Transformer Voltage V		V	0-70(adjustable)	0-70(adjustable)	0-70(adjustable)
Overall dimension		mm	3500×2500×3600	4500×2500×2600	5500×2500×2600
Weight		Kg	500	650	750
Note: Machin	e are highly	customize	d according to customer's	requirement.	





#### **Functions & Features**

EPS recycling system consists of crusher, de-duster and mixer. The crusher grinds wasted EPS material into granules, then de-duster removes the dusts, accordingly the mixer mixes recycling material and virgin material in certain proportion and feed for moulding machines.











### ■ Main Features:

Features: Compact structure of the whole machine, which will occupy less space. High production capacity, energysaving, environmental protection and recycling in time.

Use: EPS scraps change into PS materials after melting, extrusion, and cooling process, this PS is used in a variety of plastic products and XPS blocks.



ltem	Screw dia. (mm)	Long da.ratio	Output(kg/h)	Screw rotate speed(r/pm)	Power connection(kw)
FPU-160-90	160 、 90	4:1~8:1	50~70	560/65	29
FPU-185-105	185 、105	4:1~8:1	100~150	560/65	45

Note:Machines are highly customized according to customer's requirement.



# **Auxiliary Equipment**

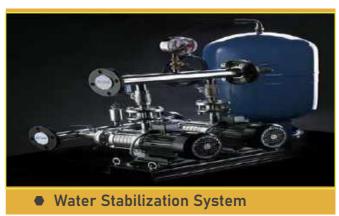
















SUTUAN



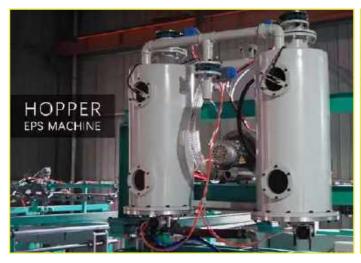
# **EPS** accessories















# Tour in Customers' Factory

























# Excellent Professional Solution

- Service Hotline: +86-571-81110031
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