

COMPLETE EPS PRODUCTION LINE WITH INSERT-MOULDING CAPABILITY, STEAM GENERATION & WATER COOLING – FANGYUAN / ICI SIXEN – 2018

DESCRIPTION

Complete installed EPS production line suitable for the production of a wide range of moulded EPS components.

The installation includes:

- EPS batch pre-expansion
- EPS ageing and storage
- automatic EPS shape moulding
- specialised EPS moulding for products with inserts / in-mould applications
- vacuum systems
- cooling-water system
- water filtration
- steam generation and associated auxiliaries

The line includes two different Fangyuan shape moulding machines:

- SPZ6M, specifically designed for products requiring inserts and in-mould applications;
- SPZ80K, conventional automatic EPS shape moulding machine with vacuum.

The equipment was installed in Romania in 2018.

Detailed total production / operating data for the main machines is reported below.

The complete installation is currently installed and can be inspected before dismantling.

Location:

Romania, European Union

----- 1. FANGYUAN SPJ90A EPS BATCH PRE-EXPANDER -----

Complete EPS batch pre-expansion system including:

- main expansion chamber
- screw conveyor
- fluidised-bed dryer
- density-control system

MAIN TECHNICAL SPECIFICATIONS

Expansion chamber:

Ø 900 mm

Density range:

12–90 g/l

Approximate production capacity:

12 g/l: 240 kg/h

18 g/l: 350 kg/h

25 g/l: 480 kg/h

30 g/l: 590 kg/h

50 g/l: 720 kg/h

Steam consumption:

approximately 2–4 kg/cycle

Steam pressure:

0.6–0.8 MPa

Compressed-air consumption:

approximately 0.3–0.4 m³/cycle

Compressed-air pressure:

0.6–0.8 MPa

Connected electrical load:

16.75 kW

Typical cycle time:

approximately 60–70 seconds

MAIN CHARACTERISTICS

- PLC control
- density measurement/control system
- PCC density auto-adjustment system
- stainless-steel drying chamber and main process components
- suitable for white and grey EPS
- high-flow steam-entry system
- large discharge gate
- discharge-air blower

TOTAL PRODUCTION SINCE INSTALLATION

Total EPS processed:
approximately 16,000 kg

Approximate total production cycles:
approximately 800 cycles

Typical historical batch quantity:
approximately 20 kg

The pre-expander has therefore processed only approximately 16 tonnes of EPS since installation.

**2. FANGYUAN SPZ6M AUTOMATIC SHAPE MOULDING MACHINE
WITH VACUUM – INSERT / IN-MOULD APPLICATIONS**

Automatic EPS shape moulding machine specifically configured for products requiring inserts and in-mould applications.

The machine features a moving twin-mould configuration. While production is taking place on one mould side, inserts or other components can be prepared on the opposite mould side.

This configuration makes the machine particularly suitable for EPS components incorporating external shells, inserts or other in-mould components.

MAIN TECHNICAL SPECIFICATIONS

Moulding positions:
up to 6 individual mould positions per cycle, depending on mould configuration

Moulding area:
720 × 1,270 mm

Maximum individual mould area:

330 × 250 mm with 6 positions

525 × 250 mm with 4 positions

Maximum mould depth:
180 mm

Stroke:
0–1,000 mm

Typical cycle time:
approximately 100–150 seconds, depending on product and process parameters

Steam consumption:
approximately 8–10 tonnes of steam per tonne of EPS material

Compressed-air consumption:
approximately 1.2 m³/cycle

Cooling-water consumption:
approximately 45–138 kg/cycle

Connected electrical load:
13.5 kW

Machine weight:
approximately 6,000 kg

Overall dimensions:
approximately 5,000 × 5,100 × 3,700 mm

MAIN CHARACTERISTICS

- twin steam chamber
- moving twin-mould system
- vacuum system
- in-mould technology
- suitable for products incorporating inserts
- manual core movement
- Schneider touch screen
- Mitsubishi PLC

TOTAL USE SINCE INSTALLATION

Total operating time:
approximately 350 working hours

The machine has therefore seen extremely limited operating use since installation.

3. FANGYUAN SPZ80K AUTOMATIC EPS SHAPE MOULDING

MACHINE WITH VACUUM

Conventional automatic EPS shape moulding machine with integrated steam chamber and vacuum system.

MAIN TECHNICAL SPECIFICATIONS

Moulding area:

840 × 720 mm

Maximum individual mould area:

330 × 250 mm

Mould positions:

up to 4 individual mould positions

Steam pressure:

6–8 bar

Steam consumption:

approximately 6 kg/cycle

Compressed-air pressure:

6 bar

Compressed-air consumption:

approximately 1.2 m³/cycle

Cooling-water consumption:

approximately 40–120 kg/cycle

Connected electrical load:

10.6 kW

Typical cycle time:

approximately 90 seconds, depending on product and process parameters

Overall dimensions:

approximately 4,500 × 1,640 × 2,700 mm

Machine weight:

approximately 4,000 kg

MAIN CHARACTERISTICS

- integrated steam chamber
- individual mould plates
- vacuum system
- compressed-air blow demoulding system
- no mechanical ejectors required

TOTAL USE SINCE INSTALLATION

Total machine cycles:
approximately 53,300 cycles

4. EPS AGEING / STORAGE SILO SYSTEM

6 × Fangyuan semi-automatic EPS silos

Capacity:
approximately 25 m³ each

Total installed capacity:
approximately 150 m³

Approximate dimensions of each silo:
2.5 × 2.5 × 5.5 m

CONSTRUCTION

- profile-steel structure
- galvanised components
- nylon-net silo body
- pneumatic cylinder control for filling hopper

The silos form part of the installed EPS material-handling and ageing system.

5. COOLING-WATER SYSTEM

Complete Fangyuan cooling-water installation serving the EPS moulding equipment.

COOLING TOWER

Nominal capacity:
approximately 100 m³/h

Electrical power:
approximately 4 kW

Electrical supply:
380 V / 50 Hz

Maximum inlet-water temperature:
approximately 70°C

SYSTEM INCLUDES

- cooling tower
- 1 low-pressure water pump
- 2 high-pressure water pumps
- water circulation equipment
- associated valves and process accessories

WATER FILTRATION SYSTEM

Fangyuan automatic water-filter system

Pipe size:
DN150

Maximum pressure:
1.6 MPa

Nominal capacity:
100 m³/h

Filtration accuracy:
100 micron

Construction:
304 stainless steel

Motor:
0.75 kW

Control box:

included

6. STEAM GENERATION SYSTEM

A complete European steam-generation system is potentially available as part of the installation.

The existing system was designed to supply the complete EPS production line.

MAIN EQUIPMENT INCLUDES

- ICI SIXEN500 steam generator
- nominal steam production: 500 kg/h
- design pressure: 12 bar
- Riello natural-gas burner
- automatic blowdown system
- TDS / conductivity control
- feed-water system
- atmospheric deaerator
- Duplex water-softening system
- chemical water-treatment / dosing equipment
- feed-water pumps
- steam distribution manifold
- automation and safety controls
- 3,000 litre PED pressure vessel / steam receiver, 12 bar
- associated valves, instrumentation and accessories

The exact scope of the steam-generation system included in the final sale can be agreed with the buyer.

Some steam-system components may therefore be excluded depending on the final agreed configuration.

Preference will be given to a complete-line transaction.

EQUIPMENT AVAILABLE AS A COMPLETE PACKAGE

The proposed package can include:

- 1 × Fangyuan SPJ90A EPS batch pre-expander

- 1 × Fangyuan SPZ6M automatic EPS shape moulding machine with vacuum for insert / in-mould applications
- 1 × Fangyuan SPZ80K automatic EPS shape moulding machine with vacuum
- 6 × Fangyuan EPS ageing/storage silos, approximately 25 m³ each
- 100 m³/h cooling-water tower
- low-pressure and high-pressure water pumps
- Fangyuan DN150 water-filtration system
- relevant process tanks and auxiliary equipment
- available original technical documentation and manuals
- removable process piping, valves and electrical accessories, where practical and agreed before dismantling
- European 500 kg/h steam-generation system, subject to final agreed scope

NOT INCLUDED / AVAILABLE SEPARATELY

The following equipment is not included in the standard package unless specifically agreed:

- thermoforming equipment
- compressed-air generation system

An Ingersoll Rand industrial compressed-air installation may be available separately.

Factory building infrastructure and permanently installed building utilities are not included.

Dismantling, loading, transport, installation and commissioning at the buyer's site are not included unless separately agreed.

CONDITION AND AVAILABILITY

Year of installation:
2018

Location:
Romania, European Union

Current status:
Installed

TOTAL PRODUCTION / USE SINCE INSTALLATION

SPJ90A batch pre-expander:

- approximately 16,000 kg of EPS processed
- approximately 800 production cycles
- historical batch quantity approximately 20 kg

SPZ6M insert / in-mould shape moulding machine:

- approximately 350 total operating hours

SPZ80K automatic EPS shape moulding machine:

- approximately 53,300 total machine cycles

INSPECTION

The equipment is currently installed and can be inspected before dismantling.

Inspection by appointment:

Available

Photos:

Available

Videos:

Available

Technical documentation:

Available for the main equipment

Preferred sale:

Complete installation to one buyer

Individual equipment sales:

May be considered depending on offers

Additional photographs, videos, technical documents and detailed information are available on request.

Estimated equivalent replacement cost today: approximately EUR 330,000–380,000

175.000 Eur