

BEIER MACHINERY CO., LTD

HDPE Pipe Production Line (G2)



(All of the pictures are only for reference)

The intersection between North 2nd Ring Road and City Avenue, Economic Development Zone, Zhangjiagang city, Jiangsu Province, China 215600

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Thank you very much for your inquiry. We are pleased to offer you the following based on our enclosed general terms and conditions of delivery and sale.

1. Project evaluation: A high speed extrusion line for production of HDPE pipe from 1” through 4”.

1.1. General information:

Raw material & formulation	HDPE materials		
Melt capacity	450-500kg/h (990-1100 lbs/hr) Depending upon the pipe dimension and the material grade		
Central height:	1000mm		
Number of color stripes TBD	2 lines <input type="checkbox"/>	4 lines <input type="checkbox"/>	6 lines <input type="checkbox"/>
Machine color	Standard color: RAL7016 (Anthracite grey)  RAL9002 (Grey white) 		
Pictures of the final product			

1.2 Pipe specifications and sizes: SDR 11, 160 psi for HDPE conduit

No.	O.D.	Minimum Wall	Average I.D.
1	1”	0.12”	1.06”
2	1 1/4”	0.151”	1.34”
3	2”	0.216”	1.91”
4	4”	0.49”	3.63”

1.3 Main commercial terms

Project	HDPE pipe production line 1” through 4”
Payment terms	50% down payment by W/T 50% by W/T before delivery and after inspection and trial run
Delivery time	90 days from the date of receiving the down payment and a technically clarified purchase order.
Packaging	Wood pallet covered by plastic film/wooden crates
Warranty period	13 months from the date of the bill of lading

1.4 Machinery

No.	Name	Qty.	Price
1	Vacuum loader 500kg/h	2 sets	
2	BRD60/38 single screw extruder	1 set	
	PLC control system (Siemens)		
3	JC Times Screen Changer	1 set	
4	Die head & disk calibration sleeve	1 set	
5	SJ25 Color Stripe Co-extruder	1 set	
6	BR-VT160/2/9 Two Chamber Vacuum Calibration Tank	1 set	
	Sealing surfaces including seal board and silicon rubber		
	Nylon roller Supports		
7	BR-SB160/9 Spray Cooling Tank	2 sets	
	Sealing surfaces including seal board and silicon rubber		
8	BR-HC160/3 Three Caterpillars haul-off	1 set	
9	BR-CF160 Chipless cutter/saw	1 set	
10	BR-TB160/9 Tilt table	1 set	
Total EX Works INCOTERMS 2000			
Inland transportation cost to Shanghai port (4×40'GP)			
Packaging cost			
Total FOB Shanghai port, China in U.S. funds			

Remarks:

- 1) All of the electrical components are UL approved
 - 2) All of the motors are UL approved.
 - 3) All of the equipment is properly guarded and the electrical cabinets come with through the door, lockable electrical safety interconnects, etc.
 - 4) A coiler will be quoted once the finished coil requirements are determined.
 - 5) Beier Machinery will set-up the complete pipe line for testing, before shipment to the customer.
- All costs relating to the test materials and compounds are the responsibility of the customer.

2.1 Technical specifications

1. Vacuum loader: For filling the extruder material hopper with HDPE pellets

Capacity:500kg/h
 Motor power: 1.5kW
 Pipe diameter: Φ 50
 Hopper : Stainless steel
 Maximum air volume: 2 M³/min



2. BRD60/38 single screw extruder: Advanced high throughput, energy efficient design



Screw :

Diameter of the screw: Φ60mm;
 L/D ratio: 38/1
 Material of the screw: 38CrMoA1A;
 Surface treatment: Nitrided to a thickness of: 0.4~0.7mm, Polished

Barrel:

Material of the Barrel: 38CrMoA1A;
 Inner processing: Nitrided to a thickness of: 0.4 ~ 0.7mm;
 Heating zones: 5
 Heating mode: Ceramic heaters with stainless steel covers
 Heating power: 3.5kW x5
 Cooling method: High capacity air cooling
 Blowers: 0.37kW x

Drive motor:

Motor power: 110kW
 Type of motor: AC
 Brand: Siemens-Beide

Gear box:

Type: Vertical
High torque design
Brand: Changlang

Main electrical parts suppliers:

Inverters: ABB;
Air Switches: LG
Relays: Omron
All electrical components are UL approved
Include through the panel electrical disconnects with lock-out capability

PLC Siemens Control system:

PLC Series No.: S7-200;
Chinese and English Menu
Human-machine interface
10.4" touch screen display
Modular temperature controller: Precision: $\pm 1^{\circ}\text{C}$;
Melt pressure and temperature read-out display

Self protection system:

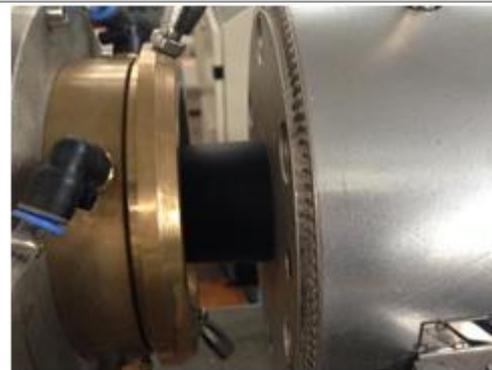
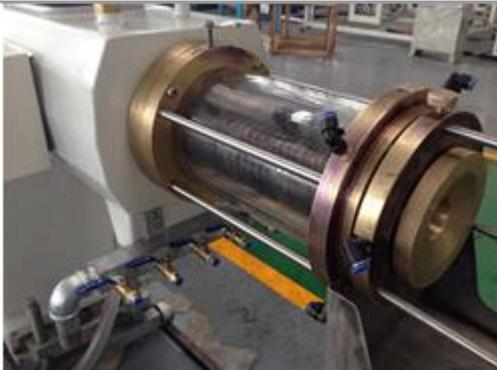
Over current protection of the motor
Over heating protection of the motor
Over pressure protection of the screw

3. Screen Changer (Brand: JC-Times)



Type: GD-SSP-120, Dual station
 Effective area: 113CM²
 Melt Pressure: ≤20Mpa
 Material: 38CrMoAl
 Heating method: Stainless steel heating rods
 Heating power: 7.4KW
 Melt capacity: 190-500 kg/h
 With hydraulic power pack

4. Pipe die head & Calibration sleeves



Die head:

Single layer
 Die head: 1 set;
 Heating power: 20kW, Heating/zone
 9 Ceramic heaters
 Inside and outside made from 42Cr steel
 Inner die is chrome plated
 Pins: 1 for each O.D. (4)
 Bushings: 1 for each O.D. (4)

Calibration Sleeve:

Disk type calibration sleeve: 1 for each O.D. (1", 1 1/4", 2")

Material of construction: Brass

Water-ring sleeve: For the 4" diameter

5. SJ25 Color Stripe Co-extruder

Screw:

Diameter of the screw: 25mm

L/D ratio: 25:1

Material of the screw: 38CrMoAIA.

Surface treatment: Nitride to a thickness of 0.4~0,6mm

Polished

Barrel:

Material of the Barrel: 38CrMoAIA

Inner processing: Nitrided to a thickness of: 0.4 ~ 0.7mm

Heating zones: 2 zones

Heating mode: Cast Aluminum with stainless steel covers

Heating power: 1.2kW × 2zones

Method of cooling: Air cooling

Cooling power: 0.04kW × 2 zones

Drive motor:

Motor power: AC 1.5kW

Output :5kg/hr



6. BR-VT Vacuum Calibration Tank



Vacuum Tank :

Effective length: 9,000mm (3000mm+6000mm)

Tank body made of Stainless steel

Front/back sealing devices and nylon plate holders: Q235 galvanized steel

Water level adjustment: Stainless steel ball float

Water temperature control: Thermo Mechanical Expansion Valve

Water pipelines: Galvanized piping with stainless steel valve connectors

Large capacity water filter which ensures blockage free water circulation and clog free spraying

Nylon semilunar supporters

Including sealing board made from silicon rubber

Stainless steel cover

With vacuum gauges

Vacuum pumps:

Power: 3kW x 2

Brand: GuangYi

Water pumps:

Power: 5.5kW x 2

Brand: GuangYi

Three direction adjustment:

Forward and Backward : ± 1000 mm hydraulically driven;

Motor power: 0.55kW

Up and down: ± 50 mm manual screw adjustment

Left and right : ± 50 mm manual screw adjustment

Vacuum meters:

Quantity: 2

Vacuum degree: -0.08Mpa

7. BR-SB160/9 Spray cooling tank



Spray Tank:

Effective length: 9,000mm

Tank body made of Stainless steel

Front/back sealing device and nylon plate holder: Q235 galvanized steel

Water level adjustment: Stainless steel ball float

Water temperature control: Automatic control system

Water pipeline: Galvanized piping with stainless steel valve connectors

Internal supports can be adjusted up and down

Inside pipe holders: Nylon wheel type

Including sealing board from silicon rubber

Stainless steel covers

Nozzles: ABS.

With vacuum gauges

Water pumps:

Power:5.5kW x 1

Brand: Guangyi

8. BR-HC 160/3 Three Caterpillar pipe haul-off



Haul Off:

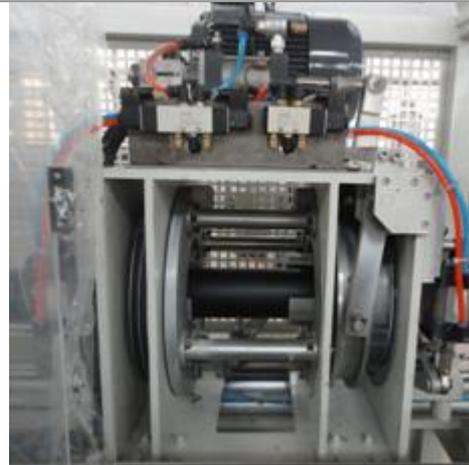
- Pneumatic pressure
- Effective caterpillar length: 1,600mm
- Maximum traction force: 10,000N
- Maximum speed: 20 m/min
- Footage counter encoder: 1pc
- Servo motors: 1.3kW x 3 (Servo motors: Inovance)
- Pipe O.D. diameter range: 20-160mm (.79"-6.3")

Electrical system: UL approved

- Servo controllers: Inovance
- Schneider or LG components

- V type pneumatic clamping system
- High coefficient of friction rubber compound blocks

9. BR-CF160 Chipless Cutter/Saw



Motor power: 2.2kW
 Pipe cutting range: 20-160mm (.79"-6.3")
 Maximum pipe wall thickness: 25mm (1")
 Synchronous speed control
 PLC control with text display
 Soundproofed cutting chamber

10. BR-TB160/9 Stacker/Tilt table

Pneumatic discharge
 Length: 9,000mm



2.2. Spare parts included free of charge

No	Name	Qty	Application
Mechanical parts:			
1	Oil seal for the high speed axis of the gearbox	1pc	Extruder
2	Screw unloading tools	1set	
3	Inner hexagon spanner 2-10mm	1set	
4	Flexible spanner 8 inch	1pc	
5	Screw driver "+" type	1pc	

6	Screw driver “-” type	1 pc	
7	Heating coils for the pipe die head	6 pcs	
8	Thermocouples (K type)	4 units	
9	Plugs for the die head heaters	3 pcs	
10	Plugs for thermocouples	3 pcs	
11	Tank Spray nozzles	15 pcs	Vacuum tank and spray tank
12	Silicon rubber sealant	2M2	
13	Sealing gasket for the tank lids	10m	
14	Water hose	5m	
15	Vacuum gauge	1 pc	
16	Water pressure gauge	1 pc	
17	Rubber blocks	10 pcs	Haul-off
18	Solenoid valve	1 unit	
19	Blades	2pcs	Cutter
20	Air hose	10m	
21	T connectors for the air hose	5pcs	
Electrical parts			
1	Small contactors	2 pcs.	Extruder
2	Small breakers	2 pcs	
3	Intermediate relays	3 pcs	
4	Time relay	1 pc	Vacuum loader

3.1 Work conditions: Provided by the customer at the installation site

Warehouse/Workshop	Supply of cranes, fork-lifts or other lifting equipment. Mounting materials and tools. Dimension(M): 48(Length)×2.5(width)×2.75m(Height)
Temperature & Humidity	≤40°C, ≤95%
Power supply	460V/3-Phase/60Hz

Wire/cables/water hose:	<p>Wires/cables from the power supply to the control cabinet of this production line are to be supplied by the customer.</p> <p>Beier will supply all electrical cables from the control cabinet to each machine.</p> <p>Water hoses to be supplied by the customer.</p>
Cooling Water	<p>Inflow temperature T1: $\leq 20^{\circ}\text{C}$, $\geq 0.3\text{Mpa}$, $\sim 15\sim 16\text{ M3/hr}$</p> <p>Outflow temperature T2: $T1+5^{\circ}\text{C}$;</p> <p>Hardness: 5-8odH;</p>
Installation power	228 kW (production consumption is 80%)
Compressor	0.3m ³ /min, 0.4Mpa-0.8Mpa
Ancillary staff	2 Persons

3.2 Service

Technical documentation	<p>All the symbols on the equipment will be in English. BEIER is responsible for providing a general layout plan, electrical plan, installation orientation and a manual in English for the Buyer.</p>
Arrangements for inspection, installation and testing of the equipment	<p>a. After all the equipment is delivered to the customer's factory; the Buyer is responsible for all preparation work, e.g. electricity supply, water supply, cranes and labor, etc.</p> <p>b. BEIER will prepare visa applications for their engineers, who will review the equipment installation and testing at the Buyer's factory.</p> <p>c. The Buyer will buy a round-trip air ticket for the engineer(s) after the visa application is approved. The Buyer is responsible for all expenses generated, e.g. visa application fees, meals, accommodation and an allowance of \$125.00 per day for each engineer.</p> <p>d. The engineer(s) will provide free training for the operators and maintenance people in Buyer's factory.</p> <p>e. If the Buyer does not request commissioning by BEIER's engineer(s) within four months from the date of the bill of lading, it will be accepted that all the equipment has been successfully tested and approved by the Buyer.</p>

<p>Quantity and quality guarantee</p>	<p>In the case of quantity discrepancies or damage to any of the equipment at the destination, the Buyer will file a claim within 30 days after the arrival of the goods at its destination. The insurance company and the shipping company will be responsible for all discrepancies and damage caused by the shipping company or other transportation companies.</p> <p>a. Guarantee period and after-sales services: 13 months from the date of the bill of lading.</p> <p>During this guarantee period, BEIER will provide spare parts without charge in cases of quality discrepancies. If malfunctions are caused by the Buyer's improper equipment operation; BEIER will provide the Buyer with spare parts at cost prices.</p> <p>a. Long-term service:</p> <p>Beyond one year, BEIER will provide the Buyer with spare parts at reasonable prices and provide long-term technical guidance.</p>
<p>Validity</p>	<p>Three months from the quotation date.</p>

We thank you for your inquiry

Beier Machinery