

TECHNICAL SPECIFICATIONS

LINE 1

Automatic forming line for the production of tableware with the spinning process, providing the following performances:

Including:

1.0 ELECTRONIC FEEDER MODEL EF15 SG for single gob operation

q.ty	Item	Description
1	Spout casing	Without glass contacts refractories
1	Conditioning sect. steel casing	4" long (1220 mm) - without glass contacts refractories
1	Plunger mechanism	<p>Driven by brushless servomotor and ball bearing screw, equipped with built-in holding brake</p> <p>Torque limiter for automatically disconnecting the plunger from the driving gear in case of mechanical overload</p> <p>Complete with protective shield against radiating heat</p> <p>Max stroke: 250 mm</p> <p>Max working stroke: 220 mm</p> <p>Vertical speed (min + max): 0 ÷ 500 mm/s</p> <p>Manual adjustment with reference to the centre of the orifice:</p> <p style="padding-left: 40px;">X (perpendicular to the forehearth axis): ± 20 mm</p> <p style="padding-left: 40px;">Y (parallel to the forehearth axis): ± 30 mm</p>
1	Revolving tube mechanism	<p>Driven by induction motor and gear shaft</p> <p>Rotating speed (min + max): 2 ÷ 15 rpm, bi-directional</p> <p>Motorized height adjustment: max stroke 140 mm</p> <p>Manual adjustment with reference to the centre of the orifice:</p> <p style="padding-left: 40px;">X (perpendicular to the forehearth axis): ± 20 mm</p> <p style="padding-left: 40px;">Y (parallel to the forehearth axis): ± 30 mm</p>
1	Twin hinged shears mechanism	<p>Each shear arm independently driven by brushless servomotor</p> <p>Shear arms opening pneumatically operated in case of emergency stop</p> <p>Max linear speed (measured in the centre of the blade): 1500 mm/s</p> <p>Adjustments / Settings:</p> <ul style="list-style-type: none"> - Shears centering Device (electronics) - Shears Overlapping (electronics) - Shears Pre-Load (by screw) adjustable during operation - Gob guide adjustment during operation
1	Automatic shears lubrication	Spray system, including nozzles and solenoid valve for oil-water spraying, excluding reservoirs, which feed the distributors by gravity
1	Manual winch	For refractories' lifting
1	Automatic lubrication	Injector system to lubricate all friction parts
1	Accessories	<p>N. 1 Shears centering device</p> <p>N. 1 Set of shears blade holders</p> <p>N. 1 Adjustable drop guide assembly complete with 1 set of guides</p> <p>N. 1 Pair of blades</p> <p>N. 1 Plunger holder</p> <p>N. 1 Set of orifice ring holder</p>

N. 1 Set of refractories

Refractories, combustion equipment, temperature measuring system, consumables and relevant accessories, under structure and superstructure are not included in our supply.

2.0 **PRESS MACHINE MODEL PV16/5-H6**

q.ty	Item	Description
1	PVB – Base machine	Geneva wheel drive in oil bath (oil not included). Sense of rotation: clockwise Quick index with servomotor Min. indexing time with specified maximum table load (moulds and mould holders): 0.45 sec @ 16 x 30 kg Base machine includes also: machine bed with wheels and screw type height adjustment, driving mechanisms, columns, bridge, pneumatic pump for worm-gear bearing lubrication.
1	Table	Table for Sixteen (16) moulds Mould centreline diameter MD = 1.950 mm Overall diameter OD = 2.280 mm Chordal distance (mould centre to mould centre): CD16 = 380 mm
1	Three parts Gob Delivery equipment	Delivery equipment will be equipped with: (1) One pneumatically operated scoop mechanism Set of Brackets for scoops and deflectors (2) Two sets of chutes (water cooled) of 2 different sizes (to be defined with the customer) of delivery equipment Metal line to be specified
1	Hydraulic Pressing equipment	Pressing force (min / max): 0.5 - 6.0 metric Tons (5 - 60 kN) Max. working stroke @ max. production rate: 100 mm Cylinder full stroke: 350 mm Hydraulic pressing system will be equipped with: <u>One (1) plunger guiding system</u> that accurately maintains the existing pressing position of the customer supplied plunger and protects the hydraulic cylinder from side loading during pressing. <u>One (1) ram centring device</u> allows for easy x-y manual plunger adjustments giving the operator the ability to accurately set the plunger position during machine operation.
1	Anvil	Pneumatically operated, wedge type, to support the table at the pressing
1	Unloading take-out	Pneumatically operated.
1+1	Kick-Up	One (1) Kick-up pneumatically operated installed in the unloading Station. One (1) Kick-Up mechanism pneumatically operated equipped with air blow for mould cleaning installed one station after the unloading station
/	Cooling air System	Cooling air system for mould and glass cooling to be fed with fan air @ 60 mbar approx. Manifold complete with vibration damping join Set of adjustable pipes for cooling of glass and mould. Set of reducing nozzles.
1	Mechanism	Lincoln type lubrication system complete with pump and

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centerline

	lubrication system	Pressure gauges for pressure measurement pump included. Suitable for dry, clean and pressure controlled compressed air @ 5 bar supplied at Customer care.
/	Electro-pneumatic circuits	OGT standard, suitable to be controlled by the timing system Standard solenoid valves, for operation of all mechanisms supplied by OGT, plus 4 spare standard bases. Complete with air lubricating unit. Filter-pressure reducer lubricator group to be installed at the compressed air inlets.
/	Accessories	Set of accessories including: 1) Plunger holder 1) Spring cage 16) Mould holders for block moulds 1) Vacuum heads for the take-out 1) Pincer heads for the take-out

3.0 SPLIT MOULD EQUIPMENT

q.ty	Item	Description
1	Split mould equipment	Cam type. Including: Central cam. Slides holder. Slides complete with linkage. Rods for moulds opening/closing Mould grip at the feeding station Mould grip at the pressing station Opening cylinder, pneumatically operated Closing cylinder, pneumatically operated Mould holders for split moulds not included.

4.0 FIRE POLISHING MACHINE RO175/32

q.ty	Item	Description
1	Base Machine	Steel frame, height adjustable. Straight part length approx. 5.500 mm, overall length 6.200 mm approx., complete with 78 chain elements equipped with rollers for friction reduction Pitch 175 mm Hollow spindle. Automatic spindle rotation in the glazing area, provided by motor.

5	Burner holders	500 mm long. With vertical, horizontal and angular position adjustment.
1	Refractory shield	3.000 mm long
/	Combustion equipment	Complete with manifolds. Flexible pipes from the manifolds to the burners. Burners suitable for gas/oxygen mixture (flow rate and pressures to be specified once the characteristics of the gas are known).
1	Lubrication system	Lincoln automatic lubrication system (pump included)
/	Accessories	Electro pneumatic circuits
1	Unloading take-out	Linear unloading transfer (pneumatically operated). Equipped with pincers heads

5.0 TRANSFER SYSTEM TO THE ANNEALING LEHR

q.ty	Item	Description
1	Cross conveyor	
1	Pneumatic push bar stacker	

6.0 ELECTRONIC CONTROL SYSTEM

q.ty	Item	Description
1	Supervision unit	<p>a) Line setting and supervision Setting of the line control parameters Saving on hard disk of "job files" Identification and monitoring of off-normal conditions For safety purposes control is enabled at different levels of responsibility (operator, technician and engineer) and limits in data setting are adjustable by Customer engineers.</p> <p>b) Visualization of mould status.</p> <p>c) Statistic files, recording the production statistical data (gob cuts, gobs fed to the moulds, rejected wares, etc.)</p> <p>d) Log file, recording significant events (such as changes of programmable parameters, of machine status, of responsibility level, etc.) with related data and time</p> <p>e) Alarms file, recording all the alarms occurred</p> <p>f) Help on line, displaying the meaning of the selected video page or event of parameter, and providing a description of each alarm (origin, effects and checklist to quickly fix the problem)</p> <p>g) Printing of selected video pages, alarms file, log file, job file, etc.</p> <p>h) Language choice among available dictionaries</p> <p>i) Tele assistance function to allow to send data to OGT headquarter in case of system failure to facilitate the trouble shooting.</p>
1	Timing section	<p>Timing of machine and line events Manual on-off control of selected mechanisms by individual switches according to our standards Machines start and stop sequences and operative commands, including:</p> <ul style="list-style-type: none"> - Gob reject / admission in the feeding station - Press on / off cycle for each mould - Cooling on/off cycle for each mould

- Machine start, immediate, synchronous (in station) and emergency stop, single step indexing.
 - Automatic cycle on unloading failure detected by ware detector
- Control of lubricating oil pumps with alarm and machine protection in case of failure
- Safety controls of the mechanisms and alarm system with historical records
- Control of blades cooling / lubrication system

It provides machine drive for the following machines:

	MACHINE	MOTOR
1	Feeder Plunger	Servomotor
2	Feeder Revolving tube	Induction
3	Feeder Tube height	Induction
4-5	Feeder Shear arms	Servomotor
6	Press machine	Servomotor
7	Fire Polishing machine	Servomotor
8	Spindle rotation	Induction

1 Synchronization section

Plunger control – Cam definition by keyboard and graphic visualization; the cam can be modified directly by means of the mouse.

Revolving tube control – Setting of the rotation sense and speed

Shear arms control – Stroke, offset of cutting centreline, blades overlapping, Acceleration (independently adjustable for closing and opening strokes), Speed (independently adjustable for closing and opening strokes), for each arm. Complete with automatic shear retraction in case of power failure.

Phase control – Machine drive synchronous with the line with accurate control of relative position (phase). Start – stop and phase advance and delay from local control station.

Manual operation – Available from local control station with digital setting of the machine speed.

The system includes:

1	Supervision unit	Suitable for installation in the machine area, for max. environmental temperature of 50° C, without irradiation and liquid condensation.
/	Local control station	OGT standard, installed close to the supervision unit for machine start / stop, emergency stop, variation of typical parameters.
1	Main control panel	Standard IP54 construction for installation in a clean and fresh environment max. 35° C air temperature, without irradiation and protected from liquid and solid falls. Power supply: 400V ±10%, 50 Hz ±1 Hz, 3 phase (to be confirmed) Dimensions: to be specified
1	Electric motors and drivers	For the control of the motors of the line.
1	Sensors	For measurements, alarming and safety actions (pressure of fluids, failure of mechanism actuation, etc.), temperature measurement and article detection on the unloading unit.
1	Set of cables	For connection of main panel, machine and control equipment, excluding only the power supply cables for the main panel and the inductance motors. Average length: 30 meters Different lengths (max. 50 meters) may be provided if specified at least 90 days before the shipment.

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Hydraulic
System
Type SH/6

The SH system is made by a hydraulic unit, servomotor and bidirectional servo pump and one hydraulic cylinder.

The system also guarantees a good electrical power energy saving respect to the traditional one with the same performance.

Our supply, consists of the following equipment:

- One hydraulic cylinder complete with the pressure transducer devices (two for each cylinder) and position transducer device (one for each cylinder).
- Water cooled systems for hydraulic cylinder, servo pump and motor.
- One servo pump with its servomotor
- Hydraulic power unit for single gob
- Integrated in the main cabinet
- Set of cables for the servomotors (power and signals), the position transducer device, interconnection between main and command box, between main cabinet and hydraulic power unit
Standard length 30 meters, available max length 50 meters, to be confirmed over the system design.
- Software for the pressing cylinders control
- Software for the operator interface

All the components of control system are from Siemens.

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