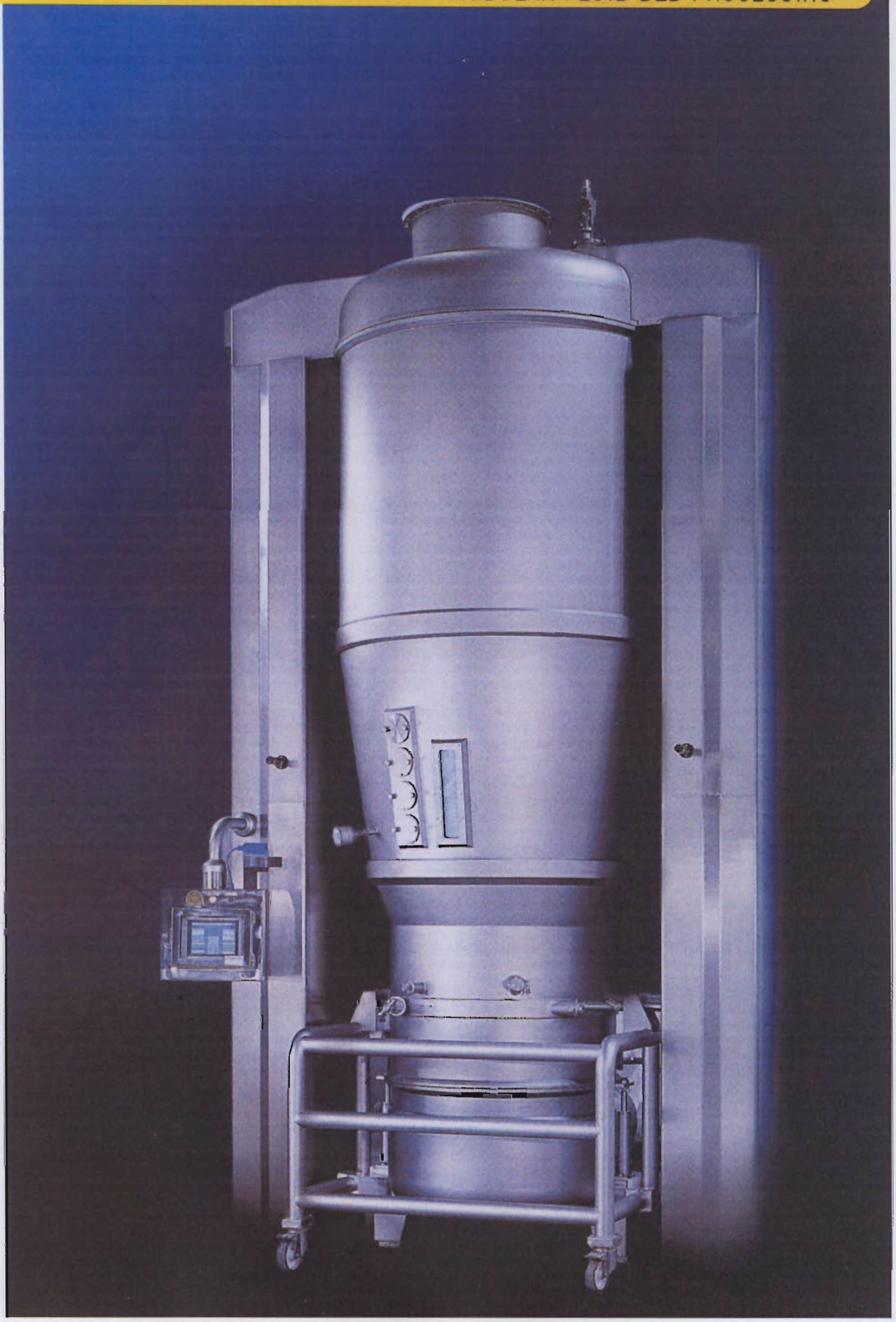
SOLID DOSE

EN

GHIBLI SERIES

MODULAR FLUID BED PROCESSING



QUALITY ASSURED FIRM
ISO 9001
SGS

GHIBLI SERIES

TOP SPRAY

Applications
- Drying
- Agglomeration
- Granulation
- Instantizing
- Coating

Expected results
- Close mixing of components
- Particle size and density modificatio
- Increased compressibility
- Solubility and disintegration proper improvement
- Controlled release of active ingredient
- Taste masking

BOTTOM SPRAY

Applications
- Coating of granules
- Coating of spheroids
- Film coating
- Layering

Expected results
- Particle size and density modification
- Controlled release of active ingredient
- Taste masking
- Colouring and cosmetic treatment
- Coating with hot melt greas and wax

TANGENTIAL SPRAY

Applications
- Layering
- Granulation for increased density
- Spheronization
- Coating

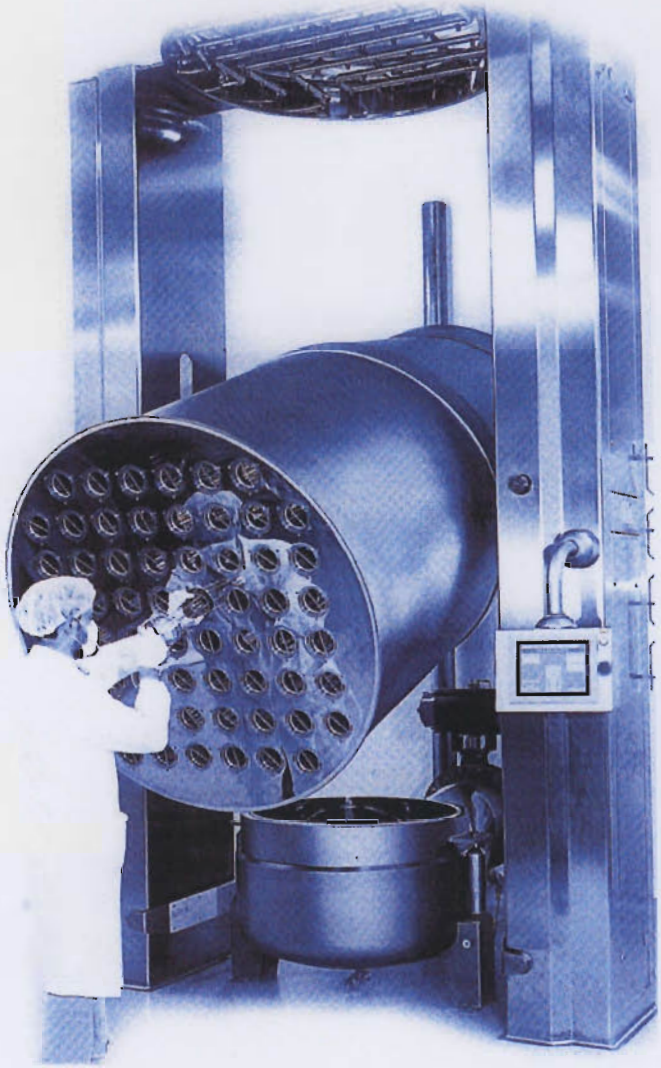
Expected results
- Fast density increase processes
- Controlled release of active ingredient
- Coating with powders
- Homogeneous spherical particl
- Coating with hot melt grease and wax

Inlet and exhaust air is filtered through pre-filter and HEPA filter units, to prevent the potential contamination of the product and potential environmental pollution.

Two options:

- Filter sleeves in epitropic tissue with AISI 316 frame
- Sinterised wire net cartridges AISI 316

Cleaning of filters during the process is done by absolute filtered compressed air.



NO SPILLING OF PRODUCT: IT FALLS BACK ON THE ROTATED CHAMBER.

PRODUCT FILTERS EXCHANGING AND SPRAYING GUN POSITIONING ARE CARRIED OUT WITH OPERATOR STANDING ON FLOOR.

SPRAYING SYSTEM

The patented spraying system operates through a binary nozzle completely free of movable mechanical parts to avoid dripping.

At each pump stop the antidripping device is automatically activated and the whole liquid duct is emptied (nozzle, gun and piping) and the product returned in the tank.

Pressure, volume or weight of spraying solution are managed and controlled by the PLC.

As a special execution, jacketed spray gun and internal cleaning in place system for nozzle and piping assembly can be supplied.

Atomising air is filtered through absolute filtration.

SECURITY

The constant air flow in the processing chamber, achieved avoiding modulating flaps, guarantees steady concentrations of air suspended powders and/or solvents, significantly reducing deflagration risks.

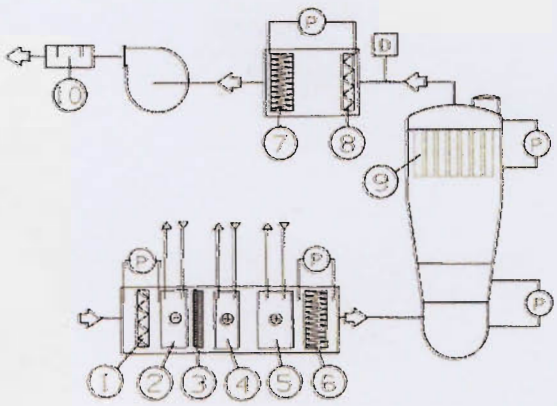
Quick Action Safety valves are installed on inlet and outlet air ducts, to cut-off the piping if internal pressure exceeds the pre-settled value.
Grounding check: the different parts of the plant are grounded to avoid electrostatic charges. A continuous check on electric absorption capacity of grounding connection, activates automatic energy cut-off in case of anomaly.
Ghibli standard installation is designed to withstand an over-pressure up to 3 bar. Installations up to 10 bar resistant are also available at customer's request.

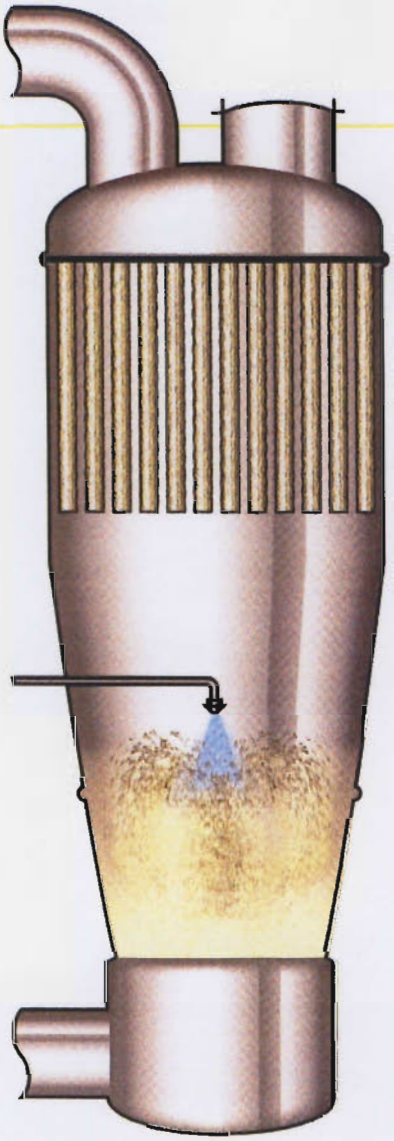
CIP

Breaking new system, PLC and OIT controlled for high pressure (70 bar) cleaning at low flow rate, with or without detergents and constantly maintaining the equipment free of waste water.

EQUIPMENT LAYOUT AND AIR TREATMENT

1 Pre-filter
2 Dehumidifying section
3 Drop Separator
4 Pre-heating section
5 Heater
6 HEPA filter
7 HEPA filter
8 Pre-filetr
9 Product filters
10 Silencer
P Differential Pressure Gauge
D Triboelectric probe for powder release

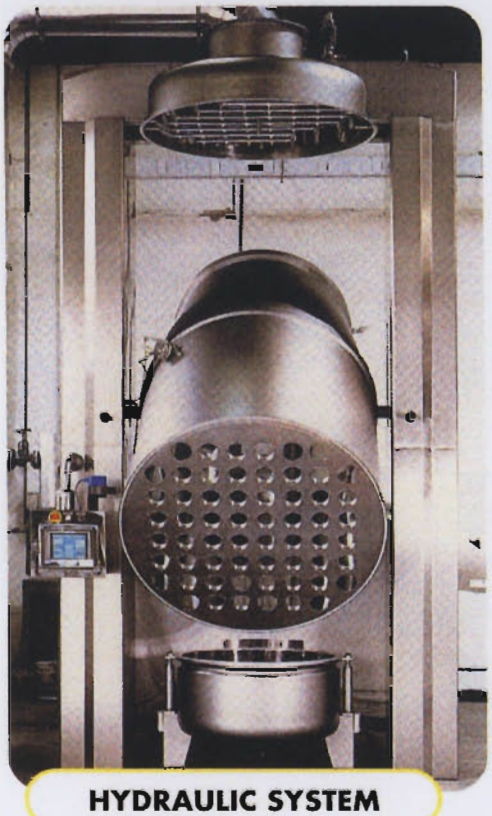




FLUIDIZATION

The optimal fluidization of the powder is obtained by means of electronic control of fan speed, without modulating flaps.

- Significant reduction of unprocessed powders
- Dimensional homogeneity of final product
- Less filter constipation
- Cycle time reduction



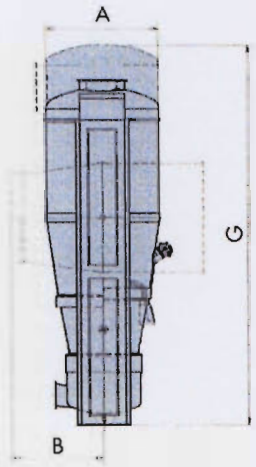
HYDRAULIC SYSTEM

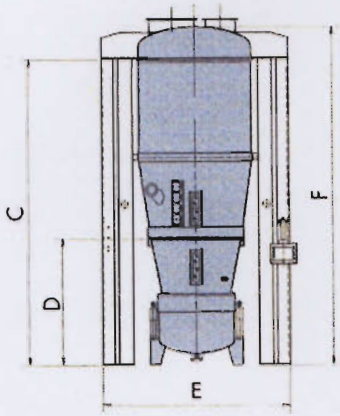
The patented hydraulic system allows the rotation and lowering of granulating chamber.
All the movements are hydraulic and PLC controlled.

The versatility of Ghibli processing equipment allows to fit on the same machine three different product inserts depending upon product formulation and applicable tecnique.

SOLID DOSE

GHIBLI SERIES



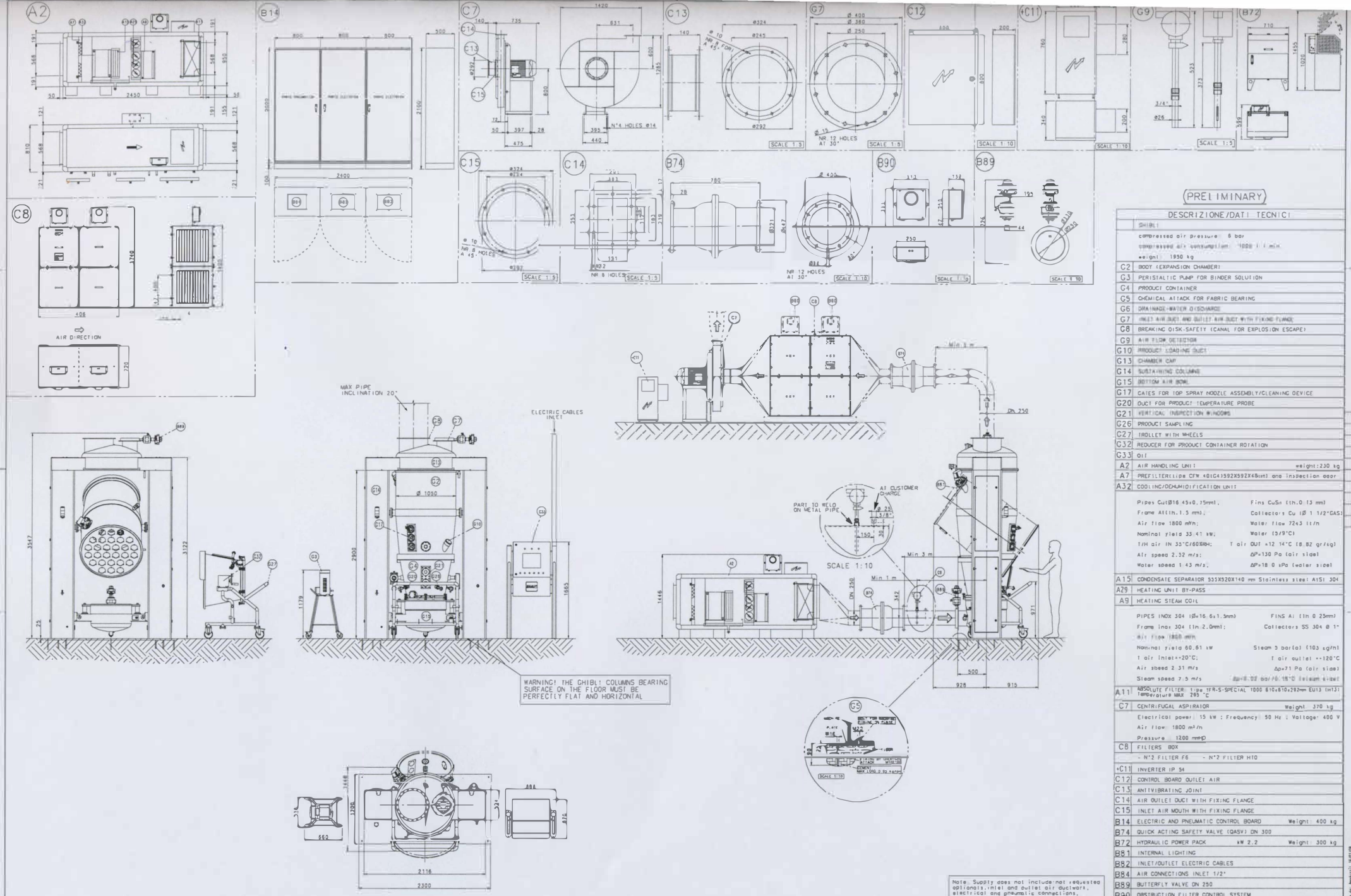


TECHNICAL DATA

GHIBLI		025	050	100	150	200	300	400	700	1000
Top Spray	Product container volume (lt)	80	150	300	450	500	600	700	1000	1300
Bottom Spray	Product container volume (lt)	60	120	240	360	400	480	560	800	1040
	Partitions (n)	1			3				5	
Tangential Spray	Product container volume (lt)	30	40	90	140	150	220	240	320	420
	Disc (ø mm)	400	400	600	850	850	1000	1000	1200	1300
	Tangential nozzles (n)	2		3	4				5	
	Supplemental engine power (kw)	3	3	5,5	7,5	7,5	7,5	7,5	10	10
Fan unit	Air flow rate (m^3/h)	900	1000	1800	3000	4000	6000	8000	10000	13000
	Differential pressure (mbar)	90							95	
	Engine power (kw)	7,5	7,5	11	15	18,5	30	37	55	75
Requested utilities	Heating capacity (kw)	30	34	68	110	133	205	246	342	444
	Heating fluid	Saturated steam 5 bar								
	Steam consumption (kg/h)	50	60	118	190	230	354	427	575	748
	Compressed air (bar)	6								
Caracteristics dimensions and weight	Spraying nozzle ports (n)	3			4					
	A (ø mm)	600	700	1000	1250	1250	1500	1500	1800	2100
	B (mm)	700	850	850	850	1000	1200	1200	1750	1850
	C (mm)	2000	2200	2600	3185	3400	3750	4250	5250	5950
	D (mm)	900	1000	1200	1490	1490	1500	1740	1875	2010
	E (mm)	1400	1400	1600	2350	2350	2500	2500	2830	3160
	F (vertical rupture disc) (mm)	2300	2600	3000	3450	3900	4170	4650	5640	6440
	G (horizontal rupture disc)(mm)	2600	2900	3350	3600	4100	4370	5250	6440	7340
	Weight (kg)	1500	1600	2500	2850	3000	3400	3500	4000	5000

ENVIRONMENT CONDITIONS • Temperature: 5° - 40°C • Relative humidity: 70% (max.) • Altitude: 1500 mt. (max.)

QUALITY ASSURED FIRM ISO 9001 SGS



(PRELIMINARY)

DESCRIZIONE/DATI TECNICI

	GHIBLI
	compressed air pressure: 6 bar
	compressed air consumption: 1000 l/min
	weight: 1950 kg
C2	BODY (EXPANSION CHAMBER)
G3	PERISTALTIC PUMP FOR BINDER SOLUTION
G4	PRODUCT CONTAINER
G5	CHEMICAL ATTACK FOR FABRIC BEARING
G6	DRAINAGE-WATER DISCHARGE
G7	INLET AIR DUCT AND OUTLET AIR DUCT WITH FIXING FLANGE
G8	BREAKING DISK-SAFETY (CANAL FOR EXPLOSION ESCAPE)
G9	AIR FLOW DETECTOR
G10	PRODUCT LOADING DUCT
G13	CHAMBER CAP
G14	SUSTAINING COLUMNS
G15	BOTTOM AIR BOWL
G17	GATES FOR TOP SPRAY NOZZLE ASSEMBLY/CLEANING DEVICE
G20	DUCT FOR PRODUCT TEMPERATURE PROBE
G21	VERTICAL INSPECTION WINDOWS
G26	PRODUCT SAMPLING
G27	TROLLEY WITH WHEELS
G32	REDUCER FOR PRODUCT CONTAINER ROTATION
G33	OIL
A2	AIR HANDLING UNIT weight:230 kg
A7	PREFILTER(Lipa CFW 40(C41592X592X46mm) and inspection door
A32	COOLING/DEHUMIDIFICATION UNIT
	Pipes Cu(Ø16.45x0.75mm); Fins CuSn (th.0.13 mm)
	Frame Al(th.1.5 mm); Collectors Cu (Ø 1 1/2"GAS)
	Air flow 1800 m³/h; Water flow 7243 lt/h
	Nominal yield 33.41 kW; Water (5/9°C)
	T/H air IN 35°C/60%RH; T air OUT =12.14°C (8.82 gr/kg)
	Air speed 2.32 m/s; ΔP=130 Pa (air side)
	Water speed 1.43 m/s; ΔP=18.0 kPa (water side)
A15	CONDENSATE SEPARATOR 535X320X140 mm Stainless steel AISI 304
A29	HEATING UNIT BY-PASS
A9	HEATING STEAM COIL
	PIPES INOX 304 (Ø=16.6x1.5mm) FINS Al (th.0.25mm)
	Frame inox 304 (th.2.0mm); Collectors SS 304 Ø 1"
	Air flow 1800 m³/h
	Nominal yield 60.61 kW Steam 5 bar(a) (103 kg/h)
	T air inlet=+20°C; T air outlet =+120°C
	Air speed 2.31 m/s Δp=71 Pa (air side)
	Steam speed 7.5 m/s Δp=0.02 bar/0.15°C (steam side)
A11	ABSOLUTE FILTER: tipo TFR-S-SPECIAL 1000 610x610x292mm EU13 (H13) Temperature MAX 295 °C
C7	CENTRIFUGAL ASPIRATOR Weight: 370 kg
	Electrical power: 15 kW ; Frequency: 50 Hz ; Voltage: 400 V
	Air flow: 1800 m³/h
	Pressure 1200 mmHO
C8	FILTERS BOX
	- N°2 FILTER F6 - N°2 FILTER H10
+C11	INVERTER IP 54
C12	CONTROL BOARD OUTLET AIR
C13	ANTIVIBRATING JOINT
C14	AIR OUTLET DUCT WITH FIXING FLANGE
C15	INLET AIR MOUTH WITH FIXING FLANGE
B14	ELECTRIC AND PNEUMATIC CONTROL BOARD Weight: 400 kg
B74	QUICK ACTING SAFETY VALVE (QASV) DN 300
B72	HYDRAULIC POWER PACK kW 2.2 Weight: 300 kg
B81	INTERNAL LIGHTING
B82	INLET/OUTLET ELECTRIC CABLES
B84	AIR CONNECTIONS INLET 1/2"
B89	BUTTERFLY VALVE DN 250
B90	OBSTRUCTION FILTER CONTROL SYSTEM

Note: Supply does not include:not requested optionals,inlet and outlet air ductwork, electrical and pneumatic connections, plumbings,building, dashed lines etc

Note: Air duct thickness from Ghibli to QASV 3mm
Air duct thickness from AHU to QASV inlet 2mm
Air duct thickness from QASV outlet to aspirator 2mm

[redacted]

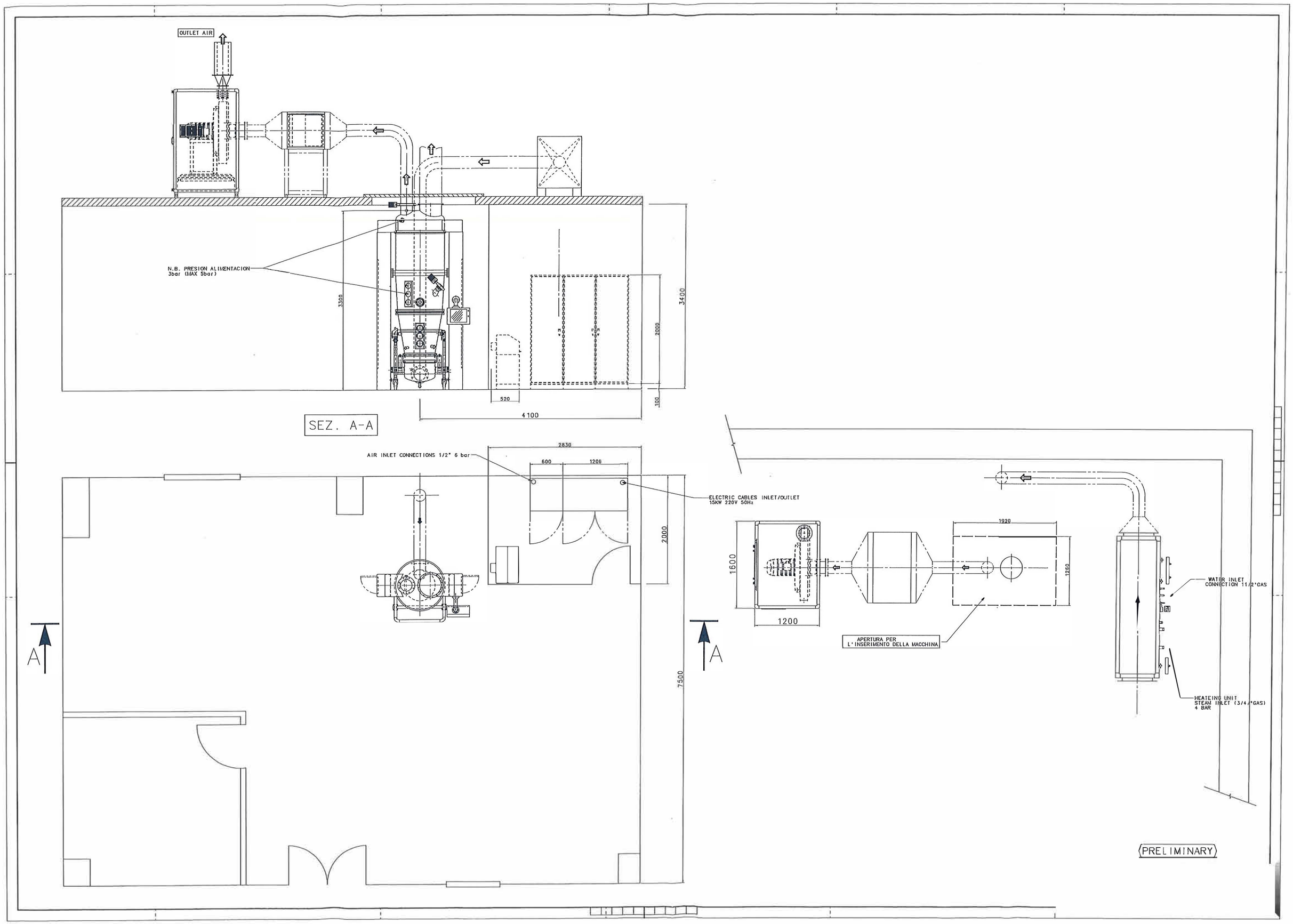
GHIBLI 100 (3 bar) 5°serie

1/11

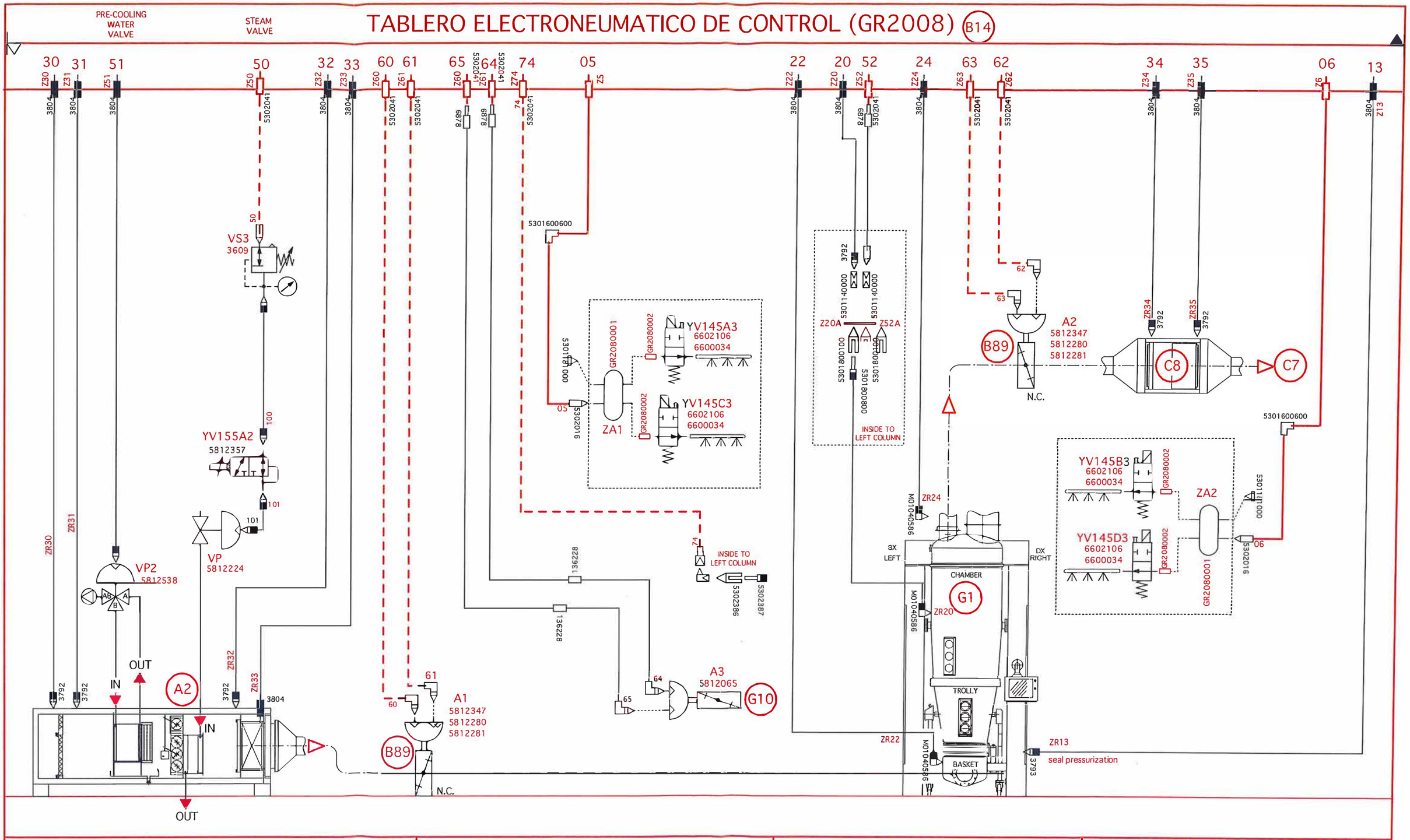
1:20

[redacted]

Progetto dic. Revisioni 16/01/08


OUTLET AIR
N.B. PRESION ALIMENTACION
3bar (MAX 5bar)
3300
3400
2000
100
520
4100
SEZ. A-A
AIR INLET CONNECTIONS 1/2" 6 bar
2830
600
1200
ELECTRIC CABLES INLET/OUTLET
15KW 220V 50Hz
2000
7500
A
A
1600
1200
1920
1260
APERTURA PER
L'INSERIMENTO DELLA MACCHINA
WATER INLET
CONNECTION 1 1/2"GAS
HEATEING UNIT
STEAM INLET (3/4"GAS)
4 BAR
PRELIMINARY

TABLERO ELECTRONEUMATICO DE CONTROL (GR2008) B14



Para pedir piezaz de repuesto, espicificar la cantidad, el nombre del simbolo, el n° del codigo y el n° del dibujo. (es. n° 1 VS1 4283 SP-323)

SIMBOLOS GRAFICOS GENERALES

TUBO ø 4x2,7		TUBO A ESPIRAL ø 6x4	
TUBO ø 6x4		TUBO A ESPIRAL ø 10x8	EMPALMES DE ABRAZADERAS
TUBO ø 10x8		TUBO A ESPIRAL ø 12x10	
TUBO ø 14x12		TUBO A ESPIRAL ø 15x12,5	EMPALMES ISTANTANEOS
TUBO ø 22x18		TUBO ø 8x6	

Limiti di fornitura:
Battery limits:

CLIENTE/CUSTOMER

GHIBLI SYSTEM

Data: Date:

Approvato da: Approved by:

Il presente disegno é proprietà della IMA; senza l'autorizzazione della stessa non potrà essere in alcun modo utilizzato.

El presente dibujo es propiedad de la empresa IMA ; sin la autorizacion de la misna no potrà ser utilizado

IMA INDUSTRIA MACCHINE AUTOMATICHE

IMA Industria Macchine Automatiche SpA
Solid Dose Division
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40064 Ozzano Emilia (Bologna) - Italy
http://www.ima.it

Diseg. / Dibujo
Nome file / Nombre fich
Data / Fecha
Verifica raccordi

Tipo impianto / Tipo de install.: COMPONENTES EN CAMPO (GHIBLI 100)
Cliente / Cliente
Nazione / País: SPAGNA

Dis. No. PGR2008-C