

**COMSPAIN**

COMPANÍA DE MANUTENCIONES ESPECIALES ESPAÑA, S.A.

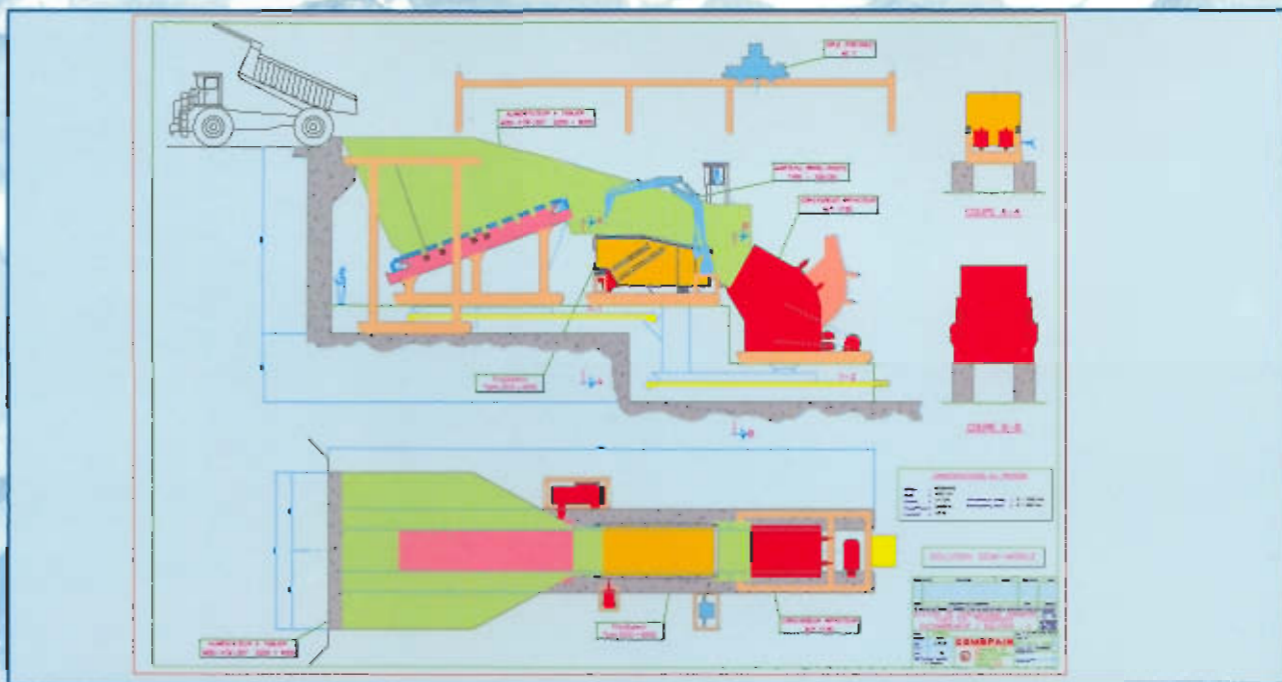


**HANDLING AND  
VIBRATING MATERIAL**

## COMSPAIN: TECHNICAL EXPERTS IN DESIGN, MANUFACTURING AND MAINTENANCE OF VIBRATING AND HANDLING MATERIAL.

Vibration machinery for obtaining, transporting and classifying solid products is an efficient technology and has been in wide use by the industry for years.

For the screening, vibration replaced to the manual sieves or to the static grizzlies, used during centuries. Vibration along the transport and feeder systems helps to ease the transportation of solid material. This is especially useful with transported material at the outlet side of a hopper and/or material having properties of high temperatures. Proper application of vibration technology helps to ease the mechanical fatigue of machinery especially at aprons and redlers.



Primary Installation of Phosphate treatment for 1500 T/h - ALGERIA

The following is a technology summary governing the unique properties of vibration handling and transporting solid materials and in the specific areas of rotary classification, washing and crushing procedures.

In equipment requiring vibration, shaking can be produced either through mechanical or electromagnetic devices. Using motovibrator, exciter or counterweight shafts induces mechanical vibration.

With our prescreeners, we can get cuttenings up to 350 mm and on the opposite side, with our screens we can classifyate under 1 mm.

COMSPAIN is capable of engineering and supplying all the necessary equipment required for an operational system. This equipment includes, hopper feeders, outlet hoppers, supports members, counterweights components, watertight hoods and washing systems.

COMSPAIN is able to provide a turn-key operation composing of all the parts necessary for a successful operating system. Included in our package are the entire general and detail engineering, drawings and specifications, the manufacturing of the equipment, the assembly and start-up of the system and warranty service.



**FEEDERS 3000 x 8000 mm Capacity: 5000 T/h.  
Grain-size 0-2000 mm - AUXINAM - ECUADOR**



**PRESCREENER 2500 x 8000 mm  
Ciment Plant PACASMAYO - PERU**



**HORIZONTAL SCREEN  
2000 x 6000 mm Two desks  
GAUSA- TUNISIA**



**INCLINED SCREEN 2500 x 8000 mm  
DOUBLE MECHANICAL DRIVE  
LUZHAI-CHINA**



**JAW CRUSHER TYPE 800 x 1000 mm  
ECIMETAL - CUBA**

**FEEDERS, PRESCREENERS, HORIZONTAL SCREENS, INCLINED SCREENS, VIBRATING FINGER BEAMS, ROTARY SCREENS, VIBRATING SCREENS, VIBRATING CONVEYORS, CRUSHERS, MILLS, VIBRATING SHAKE-OUT, WASHING DRUMS.**

**CALCULATION AND COMPUTER SIMULATION: POWER, EFFICIENCY, FREQUENCY, AMPLITUDE, DRIVING, BEARING, SHAFTS, STRUCTURES, SUSPENSIONS...**

**SPECIAL TECHNOLOGY**

- DISTRIBUTOR FEEDERS
- DOUBLE UNBALANCED SHAFTS
- FINGER BEAMS
- HYDRAULIC SYSTEM (FLOW REGULATION 0-100%)
- CRUSHING HAMMER - PRESCREENER
- PUG MILL
- MOBILE GROUPS
- DUMPER LOADERS
- ANTISTICKING SYSTEM SCREENS
- FEEDERS AND SCREENS MOUNTED ON COUNTER-WEIGHT STRUCTURE



**Prescreener Feeder. Type 2500 x 10.000 mm  
Capacity 1500 T/h (size 0-1300 mm)  
Detail of Crushing Hammer  
SOLVAY - FRANCE**

## EXPERIENCE WITH BULK SOLIDS HANDLINGS

### FEEDER

Capacity upto	5000 t/h (Raw material 0-2000 mm)
Wide upto	3000 mm
Length upto	10000 mm

### PRESCREENERS

Capacity upto	5000 t/h (Raw material size 0-2000 mm)
Wide	3000 mm
Length	9000 mm
Surfaces upto	20 m <sup>2</sup>
Size-separations up to	350 mm (Vibrating "Finger beams" up to 900 mm)

### HORIZONTAL SCREENS / INCLINED SCREENS

Capacity upto	3000 T/h
Wide upto	4000 mm
Length upto	10000 mm
Surfaces upto	36 m <sup>2</sup>

### ROTARY SCREENS

Diameter upto	3500 mm
Length upto	7400 mm
Capacity upto	1500 t/h



Screen 3000 x 9000 mm. Iron mineral - HIEPRO - BRESIL

## FEEDERS

### EXTRACTION-DOSING-DISTRIBUTION

These machines are set up in lines handling bulk materials in order to ensure a continuous and adjustable feed of any equipment in such a line: conveyor, crusher, screens, weighing, hopper, mixer,...

These machines and the types derived from them comes down to one basic design: a conveyor trough, held between two walls, which at the same time carries also the exciter. A four-point suspension completes the essential components of the machines.

#### POSITIVE FEATURES OF EXTRACTORS

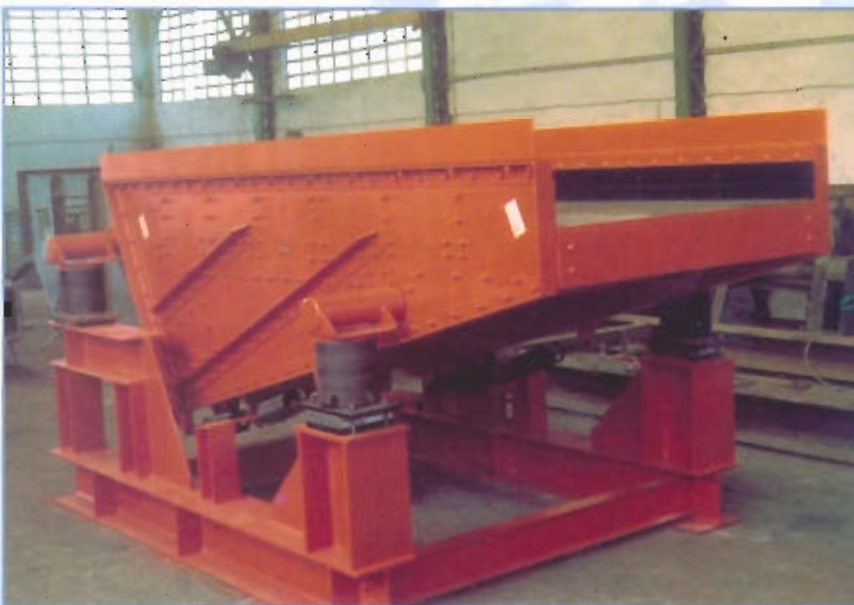
Set under store-bins and hoppers, extractors:

- ensure a uniform conveying capacity whatever may be the filling level in the bin,
- resist to the drop of blocks falling from a height of several metres,
- are themselves used as closure to the bin bottom and allow an easy operational start.

#### POSITIVE FEATURES OF DISTRIBUTORS

Distributors are meant to feed other machines not ables for working no overload. They:

- very reliably ensure a uniform conveying capacity and compensate irregularities when the materials arrive.
- lessen considerably the height of drop between the outlet spout and the machine fed, thus reducing its wear.
- allow adjustments of the throughput by variation of either the frequency or of the amplitude.



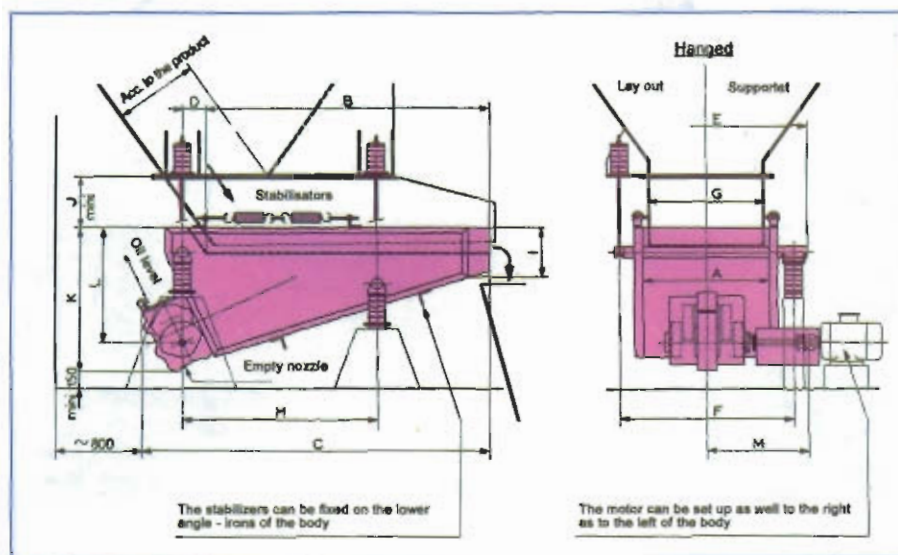
Extractor Feeder Type 1200 x 2500 mm. Capacity 700 T/h  
Cardona - SPAIN



Feeder Type 800 x 1500 mm. Capacity 300 T/h  
GUINEA



Feeders Type 2750 x 8000 mm. Capacity 3800 T/h  
Guavio - COLOMBIA



Type	A	B	C	D	E	F	G	H	I	J	K	L	M	Exciter considered	Minimum power in HP
800/1500	800	1500	2300	500	1450	1200	700	1525	400	400	1100	850	694	1 x D1	4
1000/2000	1000	2000	2650	400	1650	1400	900	1800	420	450	1200	950	694	1 x D1	4
1200/2500	1200	2500	3150	300	1900	1650	1100	1800	450	500	1400	1100	805	1 x D3	7
1400/3000	1400	3000	4000	550	2200	1900	1300	2450	500	500	1550	1250	966	1 x D4	10
1600/3500	1600	3500	4600	500	2400	2100	1500	2950	550	500	1750	1450	1066	1 x D5	17
1800/4000	1800	4000	5000	500	2600	2300	1700	3200	580	500	1680	1380	1446	2 x D4	20
2000/4500	2000	4500	5250	350	2800	2500	1900	3500	600	500	1800	1500	1546	2 x D4	20
2200/5000	2200	5000	5650	200	3000	2700	2100	3600	600	500	1850	1550	1546	2 x D5	34
2500/6000	2500	6000	6650	200	3300	3000	2400	3900	600	500	1850	1550	1696	1 x D7	50
2750/10000	2750	10000	10750	200	3550	3250	2650	7850	600	500	1950	1650	1800	2 x D7	100



Extractor with motovibrator. Type 800x1500mm Capacity: 120 T/h PEQUIVEN - VENEZUELA

Distributors Unload boats with exciter Type 2800 x 3000mm Capacity: 2500 T/h KRÜPP Germany to ALMERIA - SPAIN

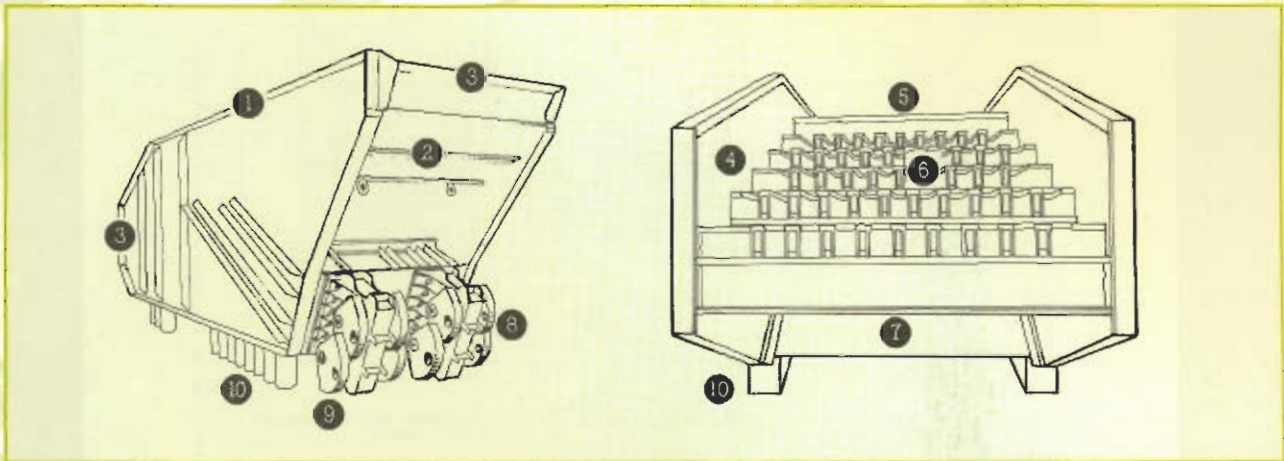


Pipe Feeder Type 800Ø x 2500 mm Capacity: 300 T/h - FERTILIZER Co. TAIWAN



Cooler Distributor Type: 800 x 2000 mm Coke. Capacity: 40 T/h - NIGERIA

# PRESCREENERS



## CAISSON

- 1** Indeflexible structure, all the assembling made by cold rivets or high strength bolt
- 2** Overdimensioned beams (or support big block chutes)
- 3** Reception inlet provided with antiwearing plates

## VIBRATING SYSTEM

- 8** Double excentric mass Exciter which produces an unidirectionnal vibration. mechanical independent kit provided with rigidant tight housing, interchangeable and accesible.
- 9** Adjustable vibration amplitude by ballasted excentrical mass
- 10** Rubber silent-blocks suspension resistant to heavy efforts and impacts.

Tracking by extensible articulated shaft double flexible disk (intermediate transmission and optional speed variator)

## KITS

made in manganese or antiwearing steel

- 4** Antiwearing protection plates
- 5** Strong thickness inlet zone
- 6** Cascade grating in divergent passage (optional passage adjusting)
- 7** Undersized hopper provided with antiwearing plates.



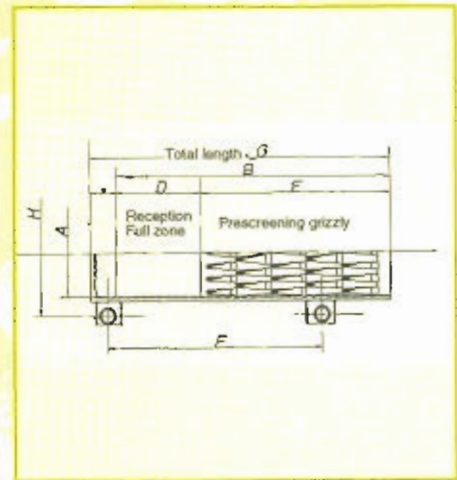
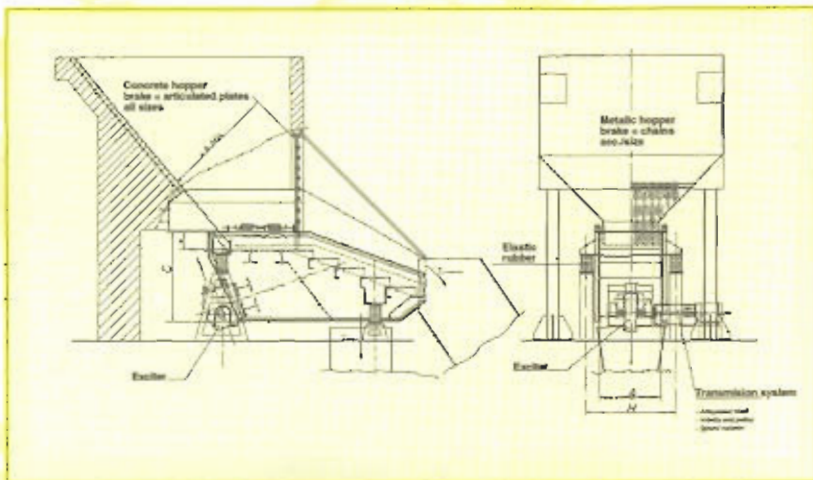
Prescreener Feeder Extractor type 2500 x 8000 mm  
Capacity 2500 T/h (Size 0-1500 mm of lime or blasted material). Separation 250 mm  
FL SMIDTH - DENMARK



Prescreener Feeder Extractor type 2000 x 6000 mm.  
Capacity 1800 T/h (Phosphate 0-1500 mm). Separation 200 mm  
OCP MOROCCO

Prescreener Feeder Extractor type 1600 x 4500 mm.  
Débit 600 T/h (Basalt 0-1000 mm)  
Separation 150 mm  
CANARY ISLAND SPAIN

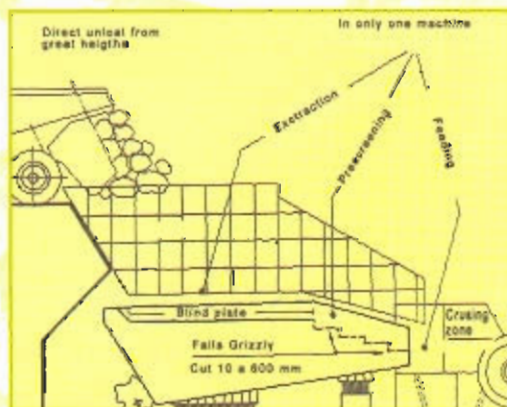




Extractors - Prescreeners - Feeders

TYPE	SIZE (mm)								POWER CV	PROCESS	
	A	B	C	D	E	F	G	H		CAPACITY	MAX. ITHY
650 / 1.800	650	1.800	750	700	1.100	1.550	2.000	1.040	3 a 6	80 a 100	0-350 / 200 / 900 / 400
800 / 2.900	800	2.900	1.100	700	1.800	2.150	2.900	1.200	7,8 a 18	80 a 180	0-400 / 400 / 600 / 600
1.000 / 2.500	1.000	2.500	1.200	1.000	1.800	2.000	2.800	1.400	10 a 20	100 a 200	0-600 / 400 / 900 / 600
1.000 / 3.000	1.000	3.000	1.450	1.000	2.250	2.500	3.550	1.450	10 a 25	100 a 200	0-600 / 400 / 900 / 900
1.200 / 3.500	1.200	3.500	1.650	1.200	2.200	2.900	3.900	1.650	15 a 25	150 a 300	0-800 / 500 / 900 / 1.000
1.400 / 3.500	1.400	3.800	1.650	1.400	2.100	3.000	3.800	1.800	15 a 30	200 a 350	0-1.000 / 500 / 900 / 1.000
1.400 / 4.000	1.400	4.000	1.650	1.500	2.500	3.000	4.300	1.900	20 a 40	300 a 450	0-1.200 / 600 / 900 / 1.000
1.600 / 4.600	1.600	4.000	1.800	1.000	2.400	3.000	4.300	2.100	20 a 40	350 a 600	0-1.200 / 600 / 900 / 1.200
1.800 / 4.500	1.800	4.500	1.900	2.000	2.500	3.000	4.800	2.200	20 a 50	400 a 700	0-1.200 / 600 / 900 / 1.200
1.800 / 4.500	1.800	4.500	2.000	1.800	2.700	3.000	4.800	2.300	40 a 50	500 a 800	0-1.200 / 800 / 1.000 / 1.200
1.800 / 5.000	1.800	5.000	2.000	1.800	3.200	3.500	5.300	2.800	40 a 60	600 a 900	0-1.200 / 800 / 1.000 / 1.200
2.000 / 5.000	2.000	5.000	2.000	2.000	3.000	3.500	5.300	2.600	40 a 75	700 a 1.000	0-1.500 / 1.000 / 1.200 / 1.500
2.000 / 6.000	2.000	6.000	2.300	2.500	3.500	4.250	6.300	2.800	50 a 125	800 a 1.200	0-1.500 / 1.000 / 1.200 / 1.500
2.000 / 7.600	2.000	7.000	2.300	3.000	4.000	4.500	7.400	2.600	50 a 100	900 a 1.400	0-1.500 / 1.000 / 1.200 / 1.500
2.000 / 8.000	2.000	8.000	2.500	4.000	4.000	5.000	8.400	2.600	75 a 150	1.000 a 1.500	0-1.500 / 1.000 / 1.200 / 1.500
2.000 / 9.000	2.000	9.000	2.500	5.000	4.000	5.500	9.500	2-2.500	100 a 200	1.200 a 1.700	0-1.500 / 1.000 / 1.200 / 1.500
2.400 / 9.000	2.400	9.000	2.300	5.000	4.000	7.750	10.000	2.400	150 a 200	2.000 a 4.500	0-2.000 / 1.500 / 1.800 / 2.000
2.500 / 8.000	2.500	8.000	3.000	4.000	4.000	5.000	8.400	2.500	150 a 200	2.000 a 4.500	0-2.000 / 1.500 / 1.800 / 2.000
2.500 / 9.000	2.500	9.000	2.500	4.000	5.000	4.500	9.500	2.500	150 a 200	2.000 a 4.000	0-2.000 / 1.500 / 1.800 / 2.000
3.000 / 7.000	3.000	7.000	2.500	4.000	3.000	4.500	7.500	3.000	2 x 100-200	2.000 a 5.000	0-2.000 / 1.500 / 1.800 / 2.000

Dimensions referred to ONE DESK. For TWO DESKS add a 10% a C and 5% to G and H. Weight 10 - 20% more approximated data before project.



Prescreener and vibrating fingers. Classification of breakwater BILBAO -SPAIN

## HORIZONTAL SCREENS

Horizontal screens are vibrating screens with linear diagram of vibration, they are equipped with vibration generators with double unbalances: monobloc exciters or motovibrators. The advantage of such a system is manifold.

### EASIER IMPLANTATION

Possibility of setting up screens that are horizontal or with slightly ascending slope.

### RATIONAL BUILD

The piece of machinery itself and its driving device can be exchanged easily, hence easy maintenance.

### GREAT PRACTICAL VARIETY

Present development of production units in the various industrial fields entails larger screens. The Horizontal Screen on one hand and the range of out exciters on the others are built up in such a way that we may manufacture machines whose vibrating weight is upper to 20 tons for screen surfaces that have sometimes reached up to 32 m<sup>2</sup> (4 x 8 m).

Each piece of machinery is carefully surveyed and manufactured in accordance for the problem to be solved. Therefore, and due to the numerous parameters involved, every problem deserving special study, no standardized range of equipment can be offered.

The screen can be designed so that it is possible to process materials, trying because of their very granulometry, their temperature, their abrasiveness or their clogging.

The use of Horizontal Screens requires sometimes through survey as far as setting place is concerned in order to minimize losses of space, to improve output, to make access to equipments easy, or to insert efficiently the unit within a production line.

The use of several combinations of units of machinery allows the solving of many hard to deal with problems in the process line. Special arrangements permit smooth and continuous working at feed and discharge end.



Horizontal Screen with counterweight. Iron mineral  
Capacity: 600 T/h.  
Type 2000 x 7000 mm  
Hispanobras (BRAZIL)



Horizontal Screen Sand  
Capacity 500 T/h Type 1.200 x 4.000 mm  
MEXICO



Cleaning Screen. Coal. Capacity: 2500 T/h. Type 2000 x 7000 mm  
Endesa - SPAIN

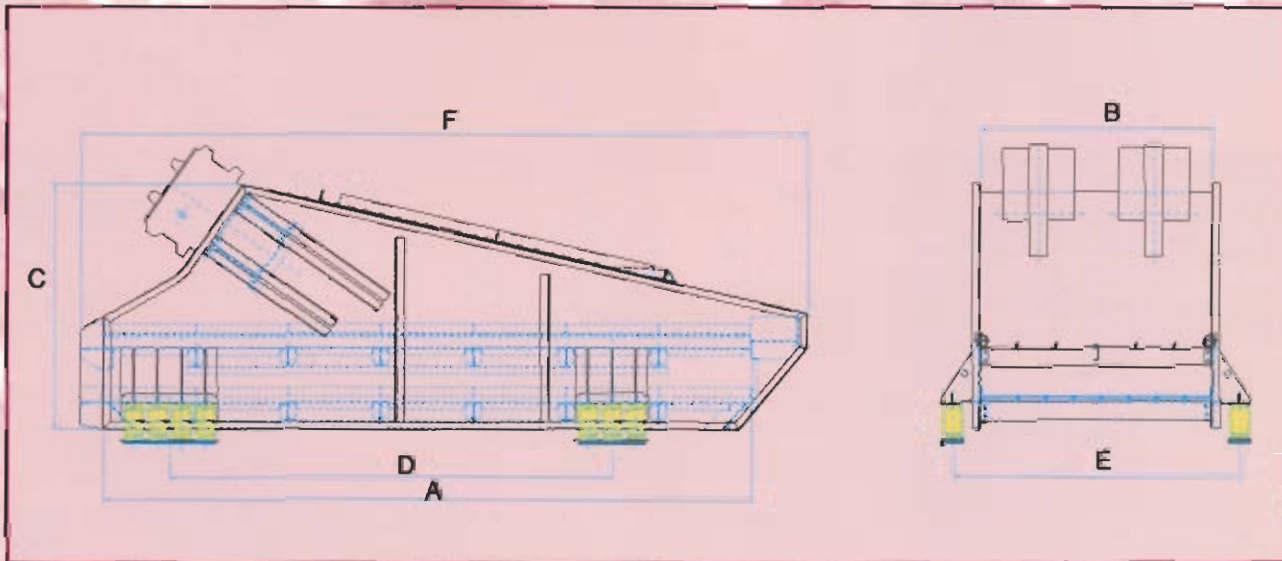
**MANUFACTURING OF EQUIPMENT**

The caisson may rest on a substructure or hang on springs or buffers which dampen the dynamic reactions. In order to reduce such reactions all together a counter-mass may be inserted between the Horizontal Screen and the structure.

Caissons may be equipped with vibrating or static hoods, fitted with practical possibilities in case of further dedusting or gaz exhaust.

When equipping the unit with our exciters, these may be located beneath or above the screening surface. In case of vibro-motors they may also be located on sides.

Our Horizontal Screens are designed for the best possible efficiency and output. Our technical services will be glad to advise users as far as the choice and the setting up of necessary pieces of machinery.



Surface	A	B	C	D	E	F
1000 x 2000 S = 2 m <sup>2</sup>	2000	1000	1200	1100	1400	2500
1250 x 2500 S = 3,2 m <sup>2</sup>	2500	1250	1200	1400	1750	3100
1400 x 3000 S = 4,2 m <sup>2</sup>	3000	1400	1400	1700	1900	3600
1600 x 4000 S = 6,4 m <sup>2</sup>	4000	1600	1500	2300	2100	4700
1800 x 4500 S = 8,1 m <sup>2</sup>	4500	1800	1700	2700	2300	5300
2000 x 5000 S = 10 m <sup>2</sup>	5000	2000	1800	2900	2600	5800
2200 x 5500 S = 12,1 m <sup>2</sup>	5500	2200	2000	3400	2800	6400
2500 x 6500 S = 16,3 m <sup>2</sup>	6500	2500	2000	3700	3100	7400
2750 x 7250 S = 20 m <sup>2</sup>	7250	2750	2250	4200	3400	8300
3000 x 9000 S = 27 m <sup>2</sup>	9000	3000	2500	5200	3700	10000
4000 x 9000 S = 36 m <sup>2</sup>	9000	4000	2500	5200	4800	10000

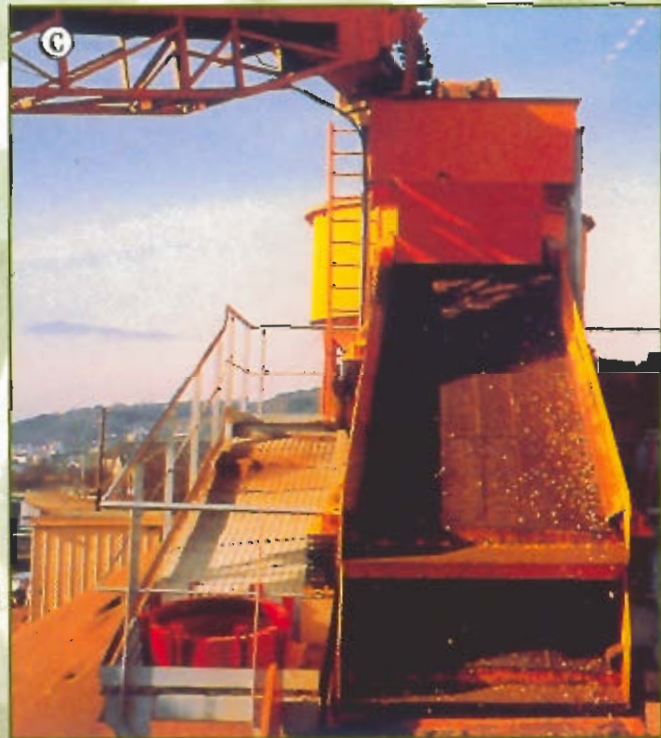
## INCLINED SCREENS

COMSPAIN inclined screens are in a standard range from 2 to 24 m<sup>2</sup> (provided with 1, 2 or 3 desks) are designed in view to obtain the optimal efficiency in product tube screened:

- drive with one or several counterweight shafts
- screen desks design suitable at customer and product (single bending, double bending, cascade,...)
- phase shifter for materials changing characteristics or composition
- variable bending depending on the product keeping up the structure
- with possibility of incorporate any sort of equipment



Exciters mounted on counter-weight  
Capacity 80 T/h. Type 2200 x 7000 mm  
Organic waste . Barcelone (SPAIN)



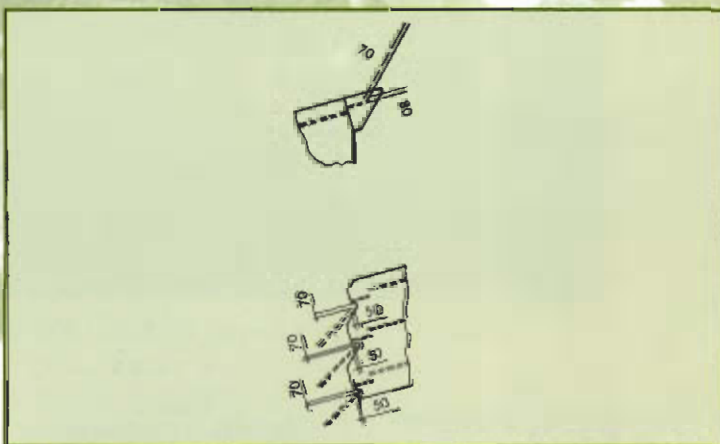
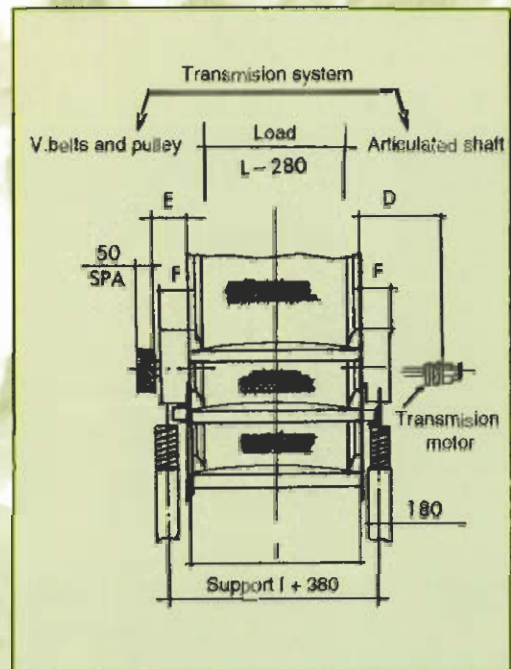
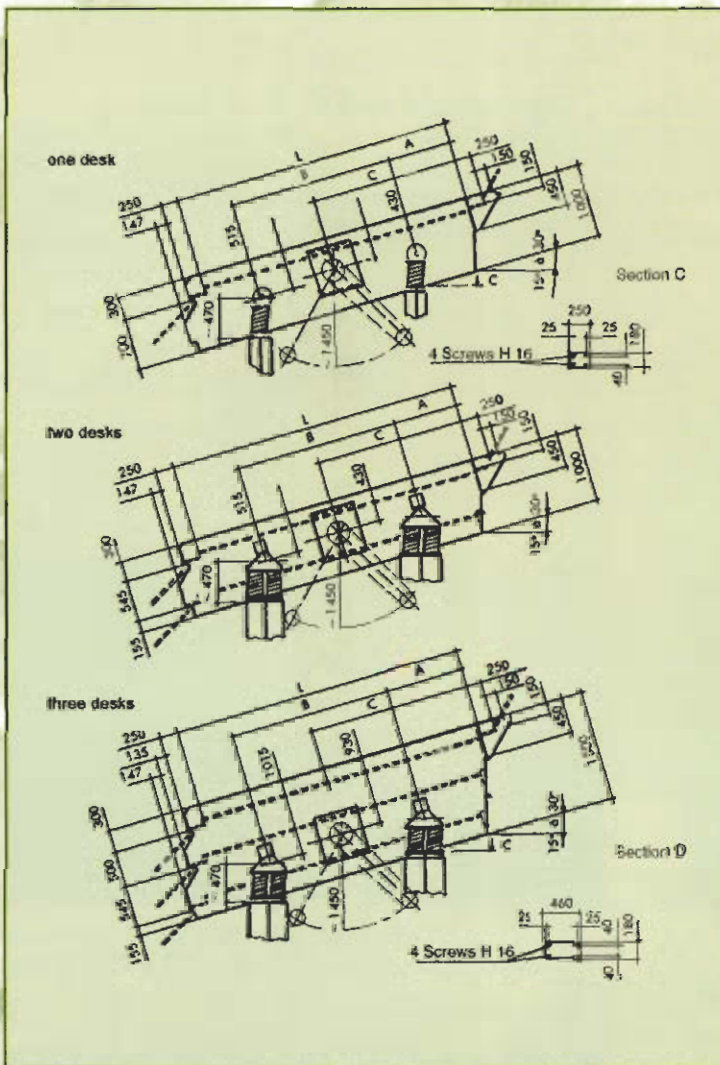
Turn key plant. Screeners in quarry Capacity 600 T/h  
Dibar - TURKEY



Screen 3 desks. Type 1500 x 5000 mm  
Capacity 400 T/h. Deblai - FRANCE



Grizzly Screen Type 1750 x 5000 mm Capacity 500 T/h  
Nescooh - PARAGUAY



Surface	Desk	A	B	C
1000 x 2000 S = 2 m <sup>2</sup>	- 1	200	1500	950
	- 2	200	1500	950
1000 x 2750 S = 2,75 m <sup>2</sup>	- 1	200	2250	1325
	- 2	200	2250	1325
	- 3	335	2250	1460
1000 x 4250 S = 4,25 m <sup>2</sup>	- 1	950	2250	2075
	- 2	950	2250	2075
	- 3	1085	2250	2210
1250 x 2750 S = 3,44 m <sup>2</sup>	- 1	200	2250	1325
	- 2	200	2250	1325
	- 3	335	2250	1460
1250 x 3500 S = 4,4 m <sup>2</sup>	- 1	200	3000	1700
	- 2	200	3000	1700
	- 3	335	3000	1835
1250 x 4250 S = 5,3 m <sup>2</sup>	- 1	950	2250	2075
	- 2	950	2250	2075
	- 3	1085	2250	2210
1500 x 3500 S = 5,25 m <sup>2</sup>	- 1	200	3000	1700
	- 2	200	3000	1700
	- 3	335	3000	1835
1500 x 4250 S = 6,34 m <sup>2</sup>	- 1	950	2250	2075
	- 2	950	2250	2075
	- 3	1085	2250	2210
1500 x 5000 S = 7,5 m <sup>2</sup>	- 1	950	3000	2450
	- 2	950	3000	2450
	- 3	1085	3000	2585
1750 x 3500 S = 6,1 m <sup>2</sup>	- 1	200	3000	1700
	- 2	200	3000	1700
	- 3	335	3000	1835
1750 x 4250 S = 7,4 m <sup>2</sup>	- 1	950	2250	2075
	- 2	950	2250	2075
	- 3	1085	2250	2210
1750 x 5000 S = 8,75 m <sup>2</sup>	- 1	950	3000	2450
	- 2	950	3000	2450
	- 3	1085	3000	2585
2000 x 4250 S = 8,5 m <sup>2</sup>	- 1	950	2250	2075
	- 2	950	2250	2075
	- 3	1085	2250	2210
2000 x 5000 S = 10 m <sup>2</sup>	- 1	950	3000	2450
	- 2	950	3000	2450
	- 3	1085	3000	2585
2000 x 5750 S = 11,5 m <sup>2</sup>	- 1	950	3750	2825
	- 2	950	3750	2825
	- 3	1085	3750	2960
2500 x 5750* S = 14,4 m <sup>2</sup>	- 1	950	3750	2825
	- 2	950	3750	2825
2500 x 6500* S = 16,25 m <sup>2</sup>	- 1	950	4500	3200
	- 2	950	4500	3380
2500 x 7250* S = 18,1 m <sup>2</sup>	- 1	950	5250	3575
	- 2	950	5250	3575
2750 x 8000 S = 22 m <sup>2</sup>	- 1	950	6000	4250
	- 2	950	6000	4250

<b>Vibrator C70</b>	<b>Vibrator C80</b>	<b>Vibrator C90</b>
D = 672	D = 672	D = 692
E = 310 F = 280	E = 310 F = 280	E = 310 F = 280
<b>Vibrator C100</b>	<b>Vibrator C120</b>	<b>Vibrator C140</b>
D = 854	D = 854	D = 904
E = 380 F = 350	E = 380 F = 350	E = 380 F = 950

## VIBRATING "FINGER BEAMS"

The grading of blasted material (mix) to obtain "large natural rocks" is no longer a problem without a solution.

Grading of material sized greater than 400 mm may now be accomplished, separating 900 mm blocks weighing between 2 and 3 t from those sized 2,500 mm at 8 t of weight.

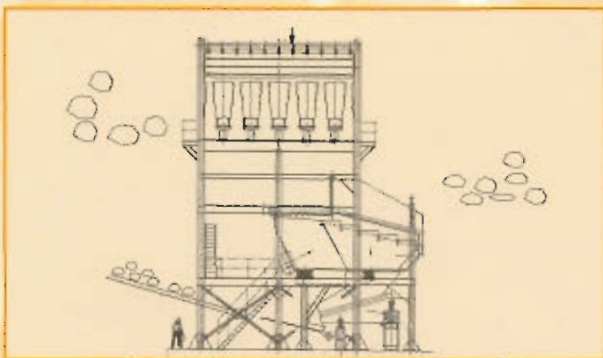
- The independent vibrating beams are supported upon special neoprene shock absorbers extra sized for heavy loads.
- Each vibrating beam is activated by two variable motovibrators, to achieve uni-directional vibration.
- For perfect grading, the vibrating beam are custom built with finely tuned slope, length and position in mind.
- Variable dosing may be obtained through frequency variation



Installation of 5 vibrating fingers/beams for up to 1500 t/h and variable size separation between 400 and 900 mm ungraded materials of 0-2000 mm with holding plate curtain wall.- COLOMBIA



Unload dumpers 100 t. for 0 - 2000 mm  
BILBAO - SPAIN



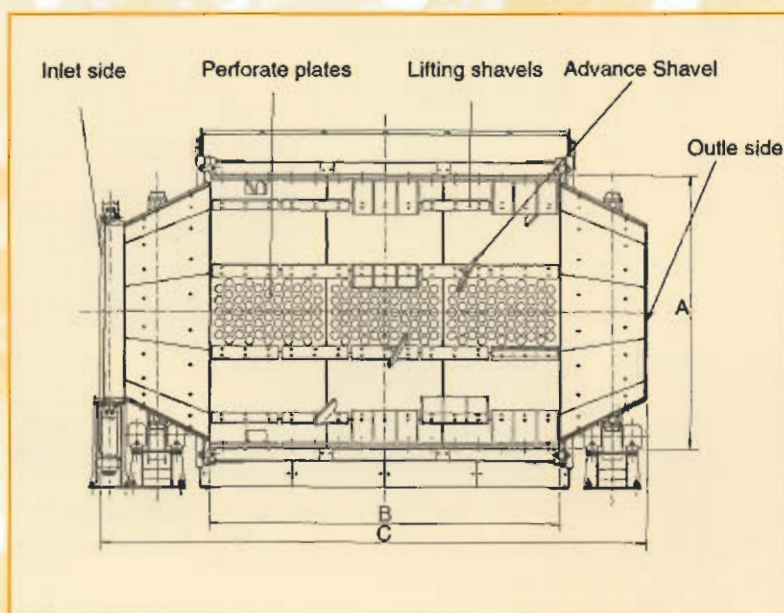
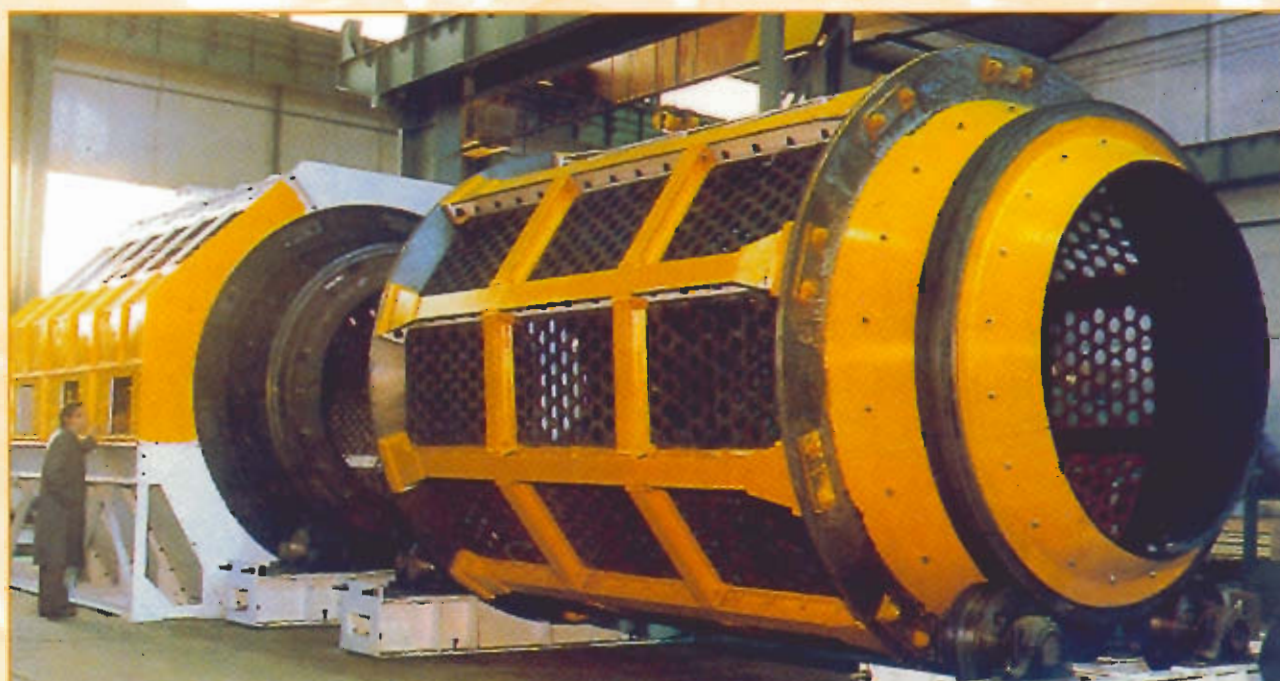
SCHEMA



Seaport Quarry - Ciervana, BILBAO - SPAIN

Vibrating elements (n° of fingers)	Capacity t/h	Fed through	Working width mm.	Separation mm.	Size ungraded material mm.
3	200 - 600	Little dumper (70 t.)	5000	400	0 - 1500
4	600 - 900	Medium dumper upto 100 t.	6500	a	0 - 1800
5	900 - 2000	Big dumper upto 150 t.	8000	900	0 - 2000 / 2500

## ROTARY SCREENS



### PURPOSE

The separating-revolving screen performs autogeneous crushing, separation and screening of tailings and exceptionally hard materials. This equipment can perform either homogeneization upstream from the process, or screening-separation all the process long.

### APPLICATION

- Sand and gravel screening
- Coarse coal
- Environmental:
  - . Fresh household waste
  - . Compost screening

Types		TTS 28 X 37	TTS 28 X 49	TTS 35 X 49	TTS 35 X 61	TTS 35 X 74
Cylinder inside (A) diameter		2.800	2.800	3.500	3.500	3.500
Cylinder useful length (B)		3.700	4.930	4.930	6.160	7.400
Overall length (C)		6.000	7.250	7.850	9.100	10.300
Gross Weight		28.000	38.000	56.000	62.000	70.000
Power		27 - 37	30 - 50	33 - 56	44 - 60	60 - 75
Hourly production	0/30 mm. tm/h	80 - 150	120 - 210	150 - 300	200 - 400	300 - 600
	0/150 mm. tm/h	125 - 250	300 - 450	400 - 650	650 - 1.100	1.000 - 1.500

# DRUM SCRUBBERS DESLIMING AND SLAKING



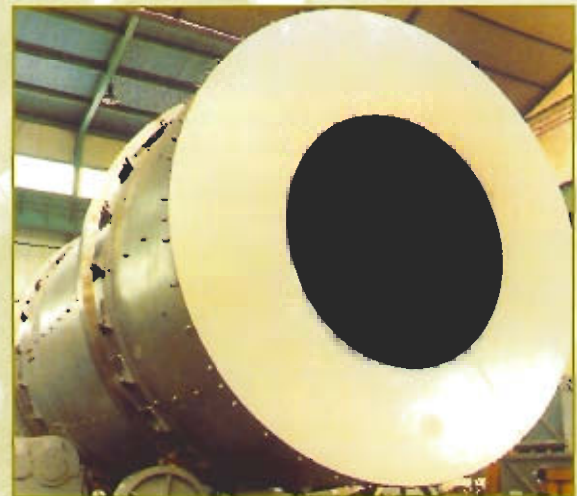
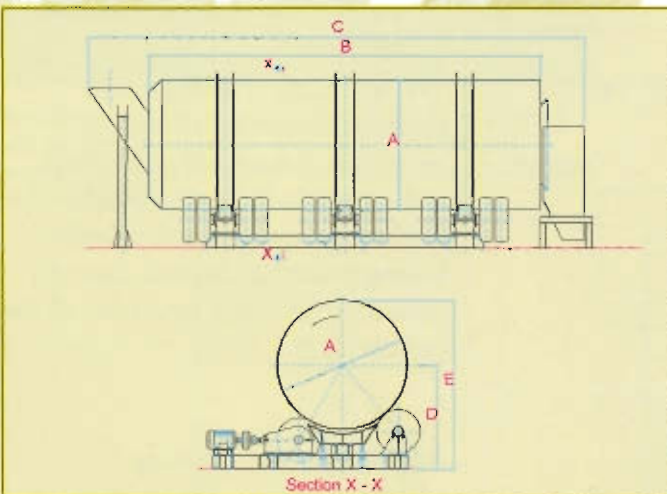
Uranium Mine - SALAMANCA - SPAIN

## DESIGN

The cylinder is made of laminated steel plate, designed to withstand loads and abrasion, the removable inner lining is made of steel or reinforced rubber.

The shell comprises a set of raising and move forward blades allowing cascade stirring and pulp forming.

Supporting and driving are ensured by a set of driven supporting mechanisms which are independent, either equipped with standard tyres, or roller mounting with chain drive.



Phosphate - Drum - Scrubbers - SYRIA

Type (ø)	Power (Kw.)	Empty (Kg.)	Weight (Kg.)	Max. particle size (mm.)	Consumption water (m <sup>3</sup> /hr.)	Capacity (T/h.)		Weight Loaded				
						4 mn.	1,5 mn.	A	B	C	D	E
CM 06.02	1.1 (1)	900	1.100	60	10	2	5	600	2.000	3.200	600	800
CM 11.03	4.0 (1)	2.000	2.700	110	50	10	25	1.100	3.000	4.200	1.000	1.400
CM 14.04	11.0 (2)	5.000	6.900	150	100	20	60	1.400	4.000	5.300	1.300	1.800
CM 16.04	15.0 (2)	7.100	9.600	170	150	30	75	1.600	4.000	5.300	1.500	2.100
CM 18.05	22.0 (2)	8.900	12.700	190	200	40	100	1.800	5.000	6.400	1.600	2.400
CM 20.06	33.0 (3)	12.400	18.200	210	300	60	160	2.000	6.000	7.400	1.800	2.600
CM 22.07	44.0 (4)	18.000	26.100	230	450	80	220	2.200	7.000	7.400	2.000	2.900
CM 25.08	74.0 (4)	23.600	35.800	260	650	120	330	2.500	8.000	9.500	2.250	3.400
CM 29.09	111.0 (6)	35.200	61.800	300	1.000	190	500	2.900	9.000	10.500	2.600	3.900
CM 33.10	180.0 (6)	46.000	73.100	350	1.500	270	720	3.300	10.000	11.500	2.970	4.400
CM 37.11	240.0 (8)	57.800	94.700	390	2.000	375	1.000	3.700	11.000	12.500	3.330	4.900

# CRUSHING

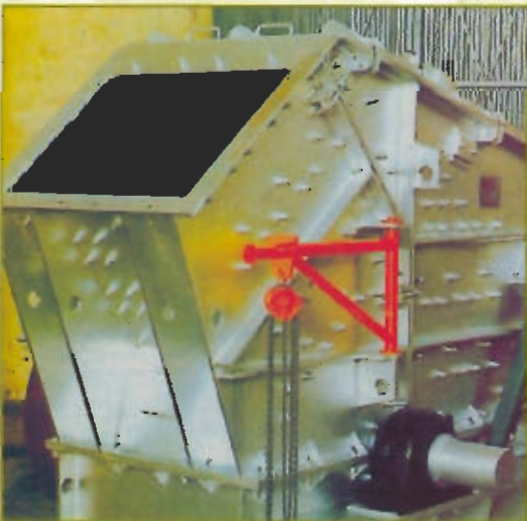


Jaw Crusher  
Mine Cienfuegos - CUBA

COMSPAIN crushing equipment is built to process a variety of rocks and minerals. Production capacities vary on 2,000 T/h and with grading adjustments from 0 to 1800 mm. The crushing equipment is useful in grinding to size material for de-lumped fertilisers and other chemical products.



Hammer crushers  
Chemical Bartow - USA



Percussion crusher Type 1500 x 1000 mm  
Quarry - Asuncion - PARAGUAY

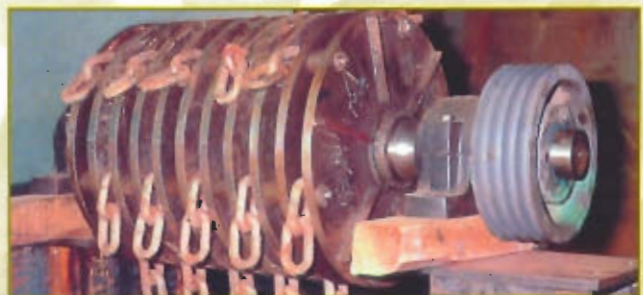


Mills cylinders and hammers mills  
G.ECO General Fertilizer Co. - SYRIA



Percussion crushers. Meleus - RUSIA

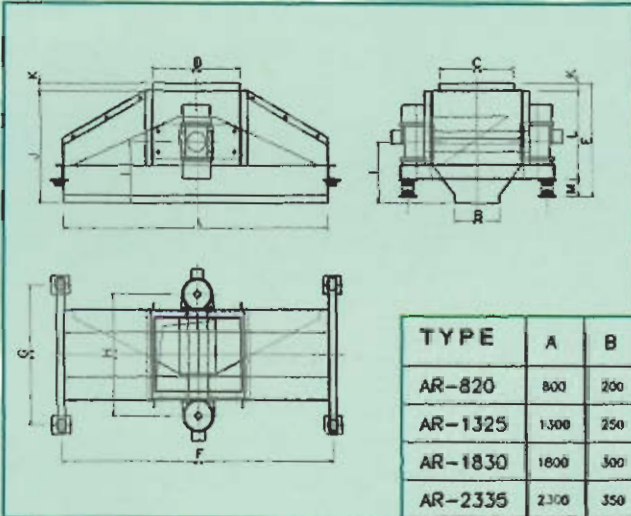
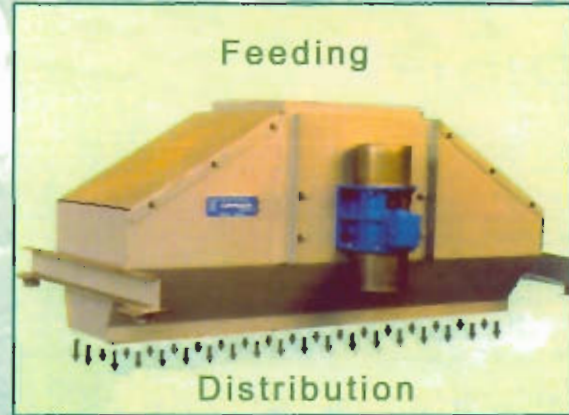
- JAW CRUSHERS
- CYLINDER CRUSHERS
- DESINTEGRATORS
- IMPACT CRUSHERS
- HAMMER CRUSHERS
- OTHERS, etc...



Desintegrator  
Gübre - Toros - TURKEY

# VIBRATING DISTRIBUTION

- Uniform and complete distribution
- Easy installation
- Minimal setting
- Reliability
- Work saving
- Improved screen efficiency



TYPE	A	B	C	D	E	F	G	H	I	J	K	L	M
AR-820	800	200	400	500	700	850	800	700	400	700	50	540	110
AR-1325	1300	250	450	500	740	1350	850	750	400	700	50	580	110
AR-1830	1800	300	500	600	760	1850	930	810	410	750	50	594	116
AR-2335	2300	350	550	700	800	2400	1000	890	470	850	50	620	130
AR-2740	2700	400	600	700	820	2800	1050	950	470	850	50	640	130

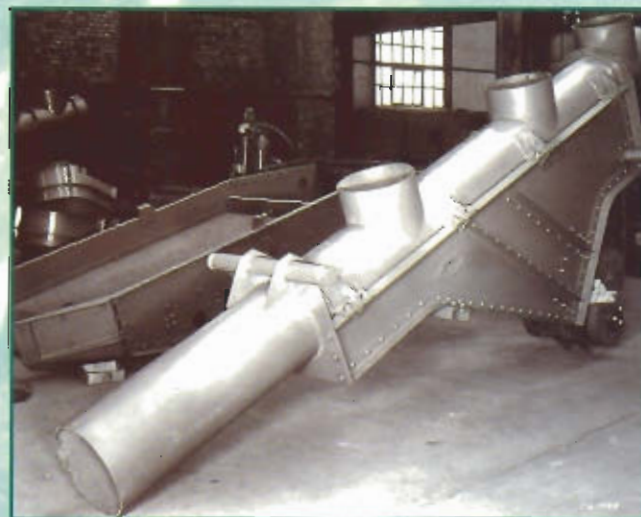
# VIBRATING CONVEYORS

The blades conveyors are specifically designed for wearing products transportation, certain size pieces; they are specially design for smelting work in the outlet of the COMSPAIN strippers (possibility of high temperatures).

They are also used in feeding furnace, with the discharge of the conveyor inside the furnace conveyor in the refractory steel).



Foundry High Temperature. Fuchosa - SPAIN



Pipe Vibrator - Waste Plant. New York - USA

## PUG MILL SCREW GRANULATOR



Double screw granulators for 240 T/h of NPK  
ZORKA AZOTARA SUBÓTICA NPK, NA - YUGOSLAVIE



NPK 300 T/h granulator dismountable type of paddles  
NOVOMOSKÓWSK - RUSSIE



Mixer for 100 T/h smelted urea-mixture, etc  
NPK-DAP plant. DONGBU CHEMICAL - KOREA

COMSPAIN engineers its experience resulting in high-quality technology that translates into products like our Double Screw Granulator and Mixers for Pug Mill manufacturing. We guaranty mixing efficiency and minimal degradation of product.

Our pug mill screw granulator is amply designed for smelting urea and steam work, sulphuric acid and ammonia conditions. The smelting urea entrance has steam jackets to help prevent obstructions.

The easy removable paddles are manufactured from special steels and are protected with a covering of hard-coat sealant.

The injection tubes are made from stainless steel or Alloy 20  
Special spray nozzles.

### PUG MILL

Capacity: until 250 T/h

Power: until 132 kw

### SCREW GRANULATOR

Capacity: until 400 T/h

Power: until 300 kw

Variable speed: Frequencies variator

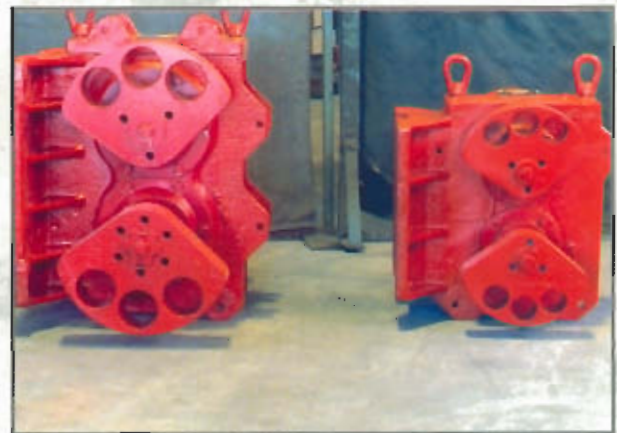
### PUG MILL, DATA SHEET

Type	Size (mm.) W x L x H	Slope	Power Kw	Capacity T/H
PM 120	1.200 x 2.500 x 1.000	2 / 10	22	20 / 40
PM 130	1.300 x 3.200 x 1.100	2 / 10	30	40 / 70
PM 140	1.400 x 3.750 x 1.200	4 / 8	45	70 / 100
PM 145	1.450 x 4.000 x 1.250	4 / 8	75	100 / 150
PM 150	1.500 x 4.500 x 1.300	2 / 6	110	150 / 200
PM 155	1.550 x 4.700 x 1.350	2 / 6	132	200 / 250

## DRIVING EXCITERS

The exciter module is the essential piece of a vibrating machine. It is a unidirectional amplitude generator that when set at a specific angle is able to provide the necessary vibration required to advance (transport) or to classify (screen) the solid material. It is composed of a strong carter supported by bearings, two shafts of different length and a counter-rotation synchronised.

Attached at the ends of the shaft (outside of the carter) are the excentric weights of the reglable torque. Models D3, D4, D5, DS5, D7, DS7.



EXCITERS

## SIMPLE MASS VIBRATOR

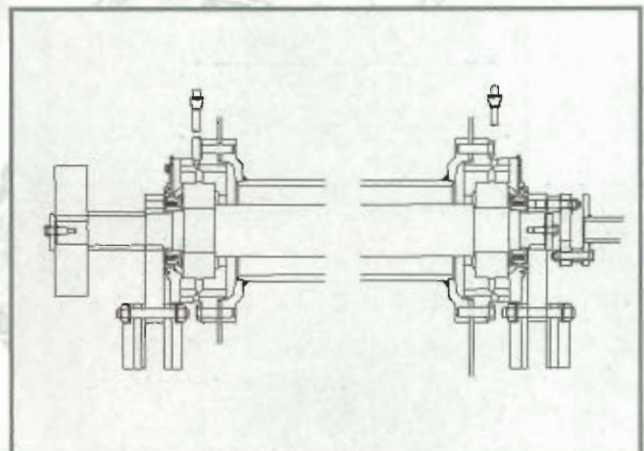
It is constituted by a tubular carter, which supports by means of bearings, a shaft; at their extremities there are excentric mass of variable weight.

Greasing is made by an oil bath. Power is transmitted from an electrical motor through a double articulated shaft, or by means of Pulley and V-belts.

They can be installed from one to three per machine. Sizes C70, C80, C90, C100, C120, C140.

Types:

C70	C80	C90
C100	C120	C140



## MOTOVIBRATORS

The motovibrators are electrical motors with prolonged by both extremes provide excentric mass.



PEQUIVEN-VENEZUELA.

The torque is reglable from "0" or until the nominal of the choosen model by turning of one of the mass with reference to the other one. It manufactures 4 or 6 poles with couples from 100 cm. kg to 4000 cm. kg. Two motovibrators with the shafts at the same plane, connected for turning in opposite side will produce a line movement as right angle with the shafts of the motovibrators.

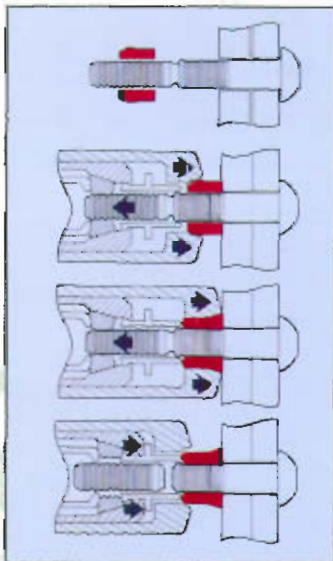
## MANUFACTURING CHARACTERISTICS

Vibration machines are particularly vulnerable to problems of deterioration as caused by the continuous stress of shaking place on the equipment. Precision in engineering and a high-degree of craft in manufacturing are needed to overcome these problems of vibration and to assure long lasting performance.

The body or structure of the equipment is engineered to a vibration frequency that is several times higher than the operating frequencies to prevent fatigue due to the excess vibration. Additionally, to assure strength in areas where assembly components are joined the following connections are used:

- RIVETING in those cases, where disassemblies are not initially foreseen as being initially.
- Highly resistant screws provided "NV" NUTS they are tightened by means of a dynametric wrench, in those cases where disassembly could be possible.

The suspension devices, formed by elastic elements having the appropriate stiffness, damp almost all of the dynamic strains produced by the machine and preventing the transmission of flutters to be building structure.



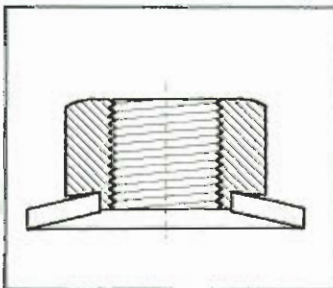
### INFORMATION ABOUT RIVETING

The "RIVET" system is an advanced riveting cold process consisting of a highly rod and a collar used to form a counter-head of the rivet below the action of the special hydraulically operated machine.

The "RIVET" has been specially developed to get high resistant junctions, where stresses are transmitted through frictions between the surfaces of the elements to be connected, particularly if they are subject to vibrations.

### INFORMATION ABOUT "NV" NUTS

In fastening (By means of the screws) of constructions being subject to vibrating stresses, it is required to secure not only the locking of the screw/nut system, but also the permanence of the original tight between the elements to be fastened.



In fact, in the vibrating constructions fastened by means of highly resistant screws and despite the perfect locking of the nut on the screw, there might appear some clearance between the elements fastened as time goes by due to heat expansions, plastic deformations, repeated impacts, etc... which might cause the failure of the union.

It is required to secure the existence of an elastic stress in the screw, having the sufficient amplitude to observe the appearance of the above-mentioned clearances.

The use of the elastic washers, type "BELLEVILLE", below the nut could become a good solution; but it has been checked that after tightening, the washer remains completely flat, and as result a plastic deformation occurs due this fact the spring effect disappears.

Ø SCREW	TORQUE	mDNmKg
10	TIGHT QUALITY 8.8	4,9
12		8,6
14		13,5
16		21,0
20		41,0
24		71,0
30		145,0

## MOBILE GROUPS



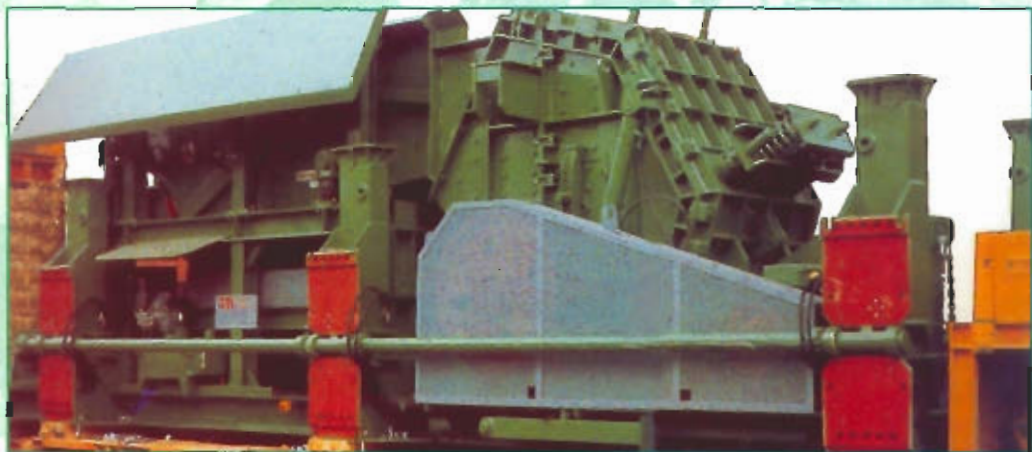
Mobile Instalation screening - GHANA

particularly effective in transporting, reducing and sorting solid materials in an ecological friendly way as concerns for sanitation and economic efficiency become important to the design, construction and operation of these facilities.

A typical mobile group is composed of a series of belt conveyors that feed classified products to a receiving hopper. In sequence, this machinery connects to a jaw crusher and a pre-screening device. If separation and diversion of rejection - type- materials is required, additional belt conveyors may be deployed.

The portability of a mobile group makes it useful in situations that require adaptation to changes in the location of the work. The ever changing front of a mine's advance and the progression of road and motorway construction are excellent examples of mobile group application.

A new application utilising mobile groups is found in solid-waste managing systems. They are



Primary mobile installation. Prescreening and crushing. Quarry GRANADA - SPAIN

The Groups can be "Mobile" over caterpillar or rubber wheels or "Semi-Mobile" that sometimes are adapted to the homologated dimensions of a container. This last can be transported by special trucks that make this kind of work.

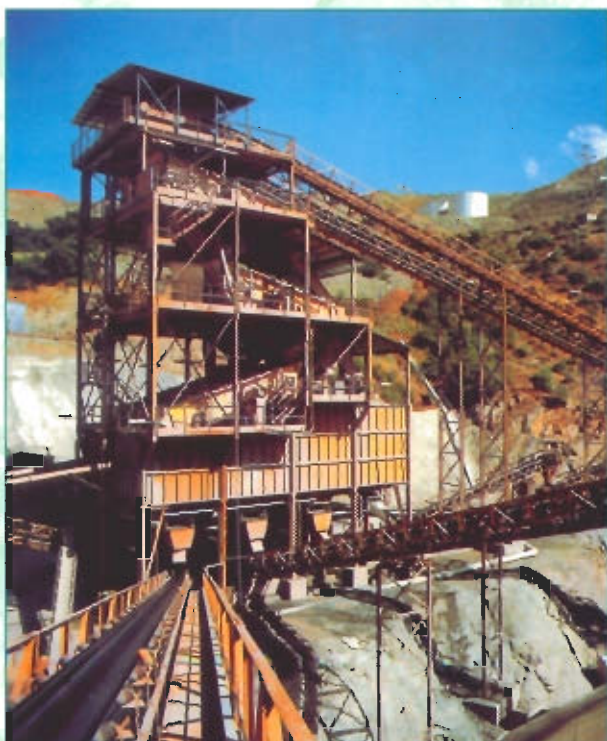
### TYPES

Mobile minigroup	600 x 400	40 t/h
Container group	800 x 600	80 t/h
Mobile supporting group	1000 x 750	175 t/h
Group over skid	1200 x 900	350 t/h



Minimobiles - Crusher- Prescreener - BOLIVIA

INDUSTRIAL INSTALLATIONS



Screening Iron Mineral. TUDA -TURKEY



Coal Screening. FRANCE



Sand quarry installation. SEPIOLSA, GUADALAJARA - SPAIN



Mine. ICP. SPAIN



Quarry - Ciervana  
BILBAO - SPAIN

# REFEREN

## Summarize List

### FEEDERS

CUSTOMER	COUNTRY	TYPE	PRODUCT	CAPACITY	SIZE
ALENA	GABON	630 x 1000	LATERITE	20 T/h	0 - 200 mm
SAGRAMAR	SPAIN	800 x 1400	COAL	150 T/h	0 - 250 mm
MINA A.H.Z.	ARGENTINE	800 x 1500	IRON MINERAL	150 T/h	0 - 200 mm
SOLVAY y CIA	SPAIN	800 x 1800	QUARRY	300 T/h	0 - 350 mm
CONSTRUCTORA INTERNACIONAL	SPAIN	800 x 2000	SAND	400 T/h	0 - 40 mm
E.R.T. RIOTINTO	SPAIN	1000 x 2500	PYRITE	500 T/h	0 - 200 mm
HISPANOBRAS	BRAZIL	1000 x 3000	PHOSPHATE	500 T/h	0 - 100 mm
TECPLANT-GABES	TUNISIA	1000 x 3500	FERTILIZER	160 T/h	0 - 80 mm
CESEA	SPAIN	1200 x 3500	QUARRY	250 T/h	0 - 500 mm
AGRUMINSA	SPAIN	1200 x 4000	TIN MINERAL	250 T/h	0 - 300 mm
MONOR ENSIDESA	SPAIN	1300 x 4500	PELLETS	600 T/h	0 - 20 mm
SOFRESID	FRANCE	1400 x 2800	IRON MINERAL	600 T/h	0 - 600 mm
UNION EXPLOSIVOS	SPAIN	1400 x 3000	SYLVINITE	500 T/h	0 - 500 mm
FIVES LILLE	CHILE	1500 x 3000	PYRITE	250 T/h	0 - 800 mm
PHB SOMERAL	PHILIPPINES	1500 x 4000	COAL	800 T/h	0 - 250 mm
DJEBEL ONK	ALGERIA	1600 x 2500	PHOSPHATE	500 T/h	0 - 500 mm
MIFERMA	MAURITANIA	1600 x 3000	IRON MINERAL	1300 T/h	0 - 75 mm
CIE.MINERE L'OGOVE	GABON	1600 x 3500	Mn. MINERAL	850 T/h	0 - 350 mm
SAN TELMO MINERA	SPAIN	1600 x 4500	PYRITE	650 T/h	0 - 8000 mm
SACILOR	FRANCE	1800 x 3000	IRON MINERAL	1500 T/h	0 - 200 mm
KRUPP ENDESA	SPAIN	2000 x 2800	COAL	1600 T/h	0 - 50 mm
BARRAGE DE SINNI	ITALY	2000 x 6000	STONE	1500 T/h	0 - 600 mm
AGROMAN	SPAIN	2200 x 3500	LIMESTONE	1600 T/h	0 - 400 mm
HAINAUT-SAMBRE	BELGIUM	2200 x 5500	KAOLIN	800 T/h	0 - 200 mm
SOFRESID	FRANCE	2400 x 8000	IRON MINERAL	2800 T/h	0 - 1400 mm
BARRAGE DE CHIVOR	COLOMBIA	2500 x 7200	LIMESTONE	2200 T/h	0 - 1600 mm
MARBRES DU BOULONNAIS	FRANCE	2500 x 9000	MARBLE	1200 T/h	0 - 1500 mm
ENUSA	SPAIN	2500 x 10.000	URANIUM MINERAL	1800 T/h	0 - 1600 mm
METARON	RUMANIA	2750 x 6500	PELLETS	1900 T/h	0 - 10 mm
ENTRECANALES	COLOMBIA	2750 x 7000	LIMESTONE	4000 T/h	0 - 1800 mm

### PRESCREENERS

CUSTOMER	COUNTRY	TYPE	PRODUCT	CAPACITY	SIZE	SEPARATION
DRAGON	IRAN	650 x 800	COAL	80 T/h	0 - 400 mm	80 m
AZUCARERA D'ATIN	URUGUAY	750 x 2000	SIDERITE MINERAL	90 T/h	0 - 120 mm	20 mm
DURO FELGUERA	ARGENTINA	800 x 2500	IRON MINERAL	150 T/h	0 - 150 mm	70 mm
BABBITLES	SPAIN	1000 X 2500	QUARCITE	200 T/h	0 - 400 mm	100 mm
SAN TELMO MINERA	SPAIN	1000 x 3000	PYRITE	250 T/h	0 - 600 mm	80 mm
HAZEMAG	GERMANY	1000 x 5000	QUARRY	300 T/h	0 - 500 mm	90 mm
VIANINI	COLOMBIA	1200 x 3500	LIMESTONE	400 T/h	0 - 600 mm	100 mm
ALUMINIO DE GRECIA	GREECE	1200 x 4500	BAUXITE	350 T/h	0 - 400 mm	60 mm
ECIMETAL	CUBA	1400 x 4000	Zn. MINERAL	500 T/h	0 - 600 mm	90 mm
SODA POVOA	PORTUGAL	1400 x 4500	LIMESTONE	460 T/h	0 - 800 mm	120 mm
R.C. ASTURIANA MINAS	SPAIN	1600 x 4500	Zn. MINERAL	650 T/h	0 - 1000 mm	100 mm
D y C	ALGERIA	1600 x 5000	STONE	700 T/h	0 - 800 mm	160 mm
S.N.S. ANNABA	ALGERIA	1600 x 6000	COAL	1200 T/h	0 - 500 mm	80 mm
HAZEMAG	SPAIN	1800 x 4000	QUARRY	800 T/h	0 - 700 mm	90 mm
F.C.B.	FRANCE	1800 x 9000	MINERAL	1200 T/h	0 - 1000 mm	180 mm
CEMENTOS LEON	CHILE	2000 x 4500	LIMESTONE	800 T/h	0 - 900 mm	120 mm
ENUSA	SPAIN	2000 x 5000	URANIUM MINERAL	1000 T/h	0 - 1500 mm	110 mm
COGEFAR	ITALY	2000 x 6700	GRANITE	1400 T/h	0 - 1200 mm	80 mm
SMMIE	ISRAEL	2000 x 9000	LIMESTONE	1800 T/h	0 - 1400 mm	100 mm
CANTERA SOLVAY	FRANCE	2000 x 10.000	LIMESTONE	1400 T/h	0 - 1300 mm	120 mm
CEMENTOS DEL NORTE	PERU	2200 x 5000	LIMESTONE	800 T/h	0 - 1000 mm	80 mm
FIVES CAIL BABCOCK	CHILE	2200 x 10.000	PYRITE	2200 T/h	0 - 1400 mm	250 mm
CEMENTERA MERONE	ITALY	2400 x 9000	QUARRY	1800 T/h	0 - 1300 mm	180 mm
CEMENTOS OBOURG	BELGIUM	2500 x 6000	LIMESTONE	1700 T/h	0 - 1500 mm	200 mm
BAUXI	VENEZUELA	2500 x 6500	BAUXITE	1600 T/h	0 - 1200 mm	90 mm
AGROMAN	SPAIN	2500 x 7500	LIMESTONE	2600 T/h	0 - 1000 mm	200 mm
FOSFATOS de TAIBA	MOROCCO	2500 x 8000	SILEX	1500 T/h	0 - 1300 mm	150 mm
R.E.I.	VIETNAM	2500 x 9000	Zn. MINERAL	2500 T/h	0 - 1500 mm	270 mm
SPIE BATINGOLES	TUNISIA	2700 x 7500	IRON MINERAL	5000 T/h	0 - 1600 mm	200 mm
M.D.P.A.	INDONESIA	2750 x 7000	PHOSPHATE	3000 T/h	0 - 1800 mm	180 mm

## INCLINED SCREENS

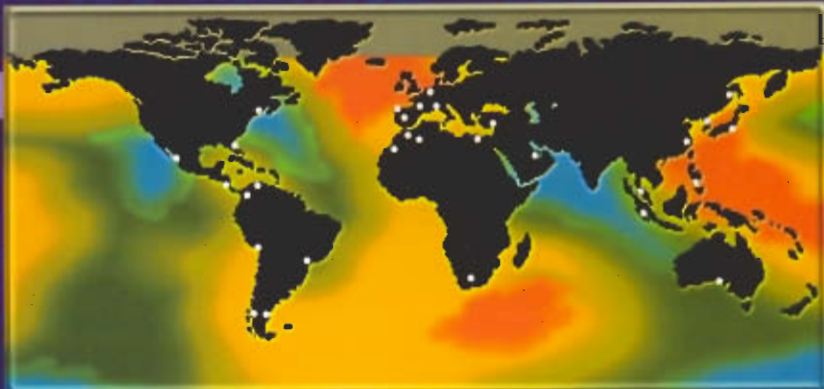
CUSTOMER	COUNTRY	TYPE	PRODUCT	CAPACITY	SIZE	SEPARATION
E.I. ARAGONESAS	SPAIN	500 x 1500	AMMONIA SULPHATE	15 T/h	0 - 50 mm.	20 mm.
AZUCARERA S.P.N.	BOLIVIA	750 x 1500	SUGAR	80 T/h	0 - 60 mm.	2 mm.
MINAS DE ROHNU	RUMANIA	1000 x 1500	LEAD MINERAL	100 T/h	0 - 100 mm.	30 mm.
LURGI	PERU	1000 x 2500	MAGNESITE	120 T/h	0 - 150 mm.	60 and 20 mm
AUXINI	SPAIN	1000 x 2750	PYRITE	40 T/h	0 - 25 mm.	5 mm.
KOPPERS COSIPA	BRAZIL	1000 x 4250	COCK	30 T/h	0 - 20 mm.	8 mm.
SALINAS DE TORREVIEJA	SPAIN	1150 x 2700	SALT	80 T/h	0 - 100 mm.	20 mm.
SAGRAMAR	SPAIN	1250 x 3500	DIABASE	200 T/h	0 - 200 mm.	70 and 25 mm
FIVES CAIL BABCOCK	EGYPT	1300 x 2750	SLAGS	60 T/h	0 - 120 mm.	40 and 10 mm
O.C.N.F.	ALGERIA	1400 x 4000	FERTILIZERS	75 T/h	0 - 60 mm.	4 and 2 mm
ENFERSA	SPAIN	1500 x 3500	UREA	70 T/h	0 - 40 mm.	4 and 2 mm
CEMENTOS LEMONA	SPAIN	1500 x 4000	CLINKER	100 T/h	0 - 60 mm.	35 and 5 mm
NICAS	SPAIN	1500 x 4250	FERTILIZERS	80 T/h.	0 - 80 mm.	4 and 2 mm
P. GUERIN	IRAQ	1600 x 4000	GRANITE	200 T/h.	0 - 150 mm.	40 and 10 mm
ROGELIO MARCOS	SPAIN	1750 x 3000	COCK	50 T/h.	0 - 40 mm.	25 and 8 mm.
T.URBASA-AHV	SPAIN	1750 x 4250	SINTER	100 T/h.	0 - 100 mm.	25 and 5 mm.
TALLERES CEMOT	ALBANIA	1750 x 5000	SAND	160 T/h.	0 - 40 mm.	25,12, 6 mm
ENSIDESA	SPAIN	1750 x 6000	COCK	90T/h.	0 - 50 mm.	20 mm
I.I.S.A.	SPAIN	1800 x 4500	LIMESTONE	150 T/h	0 - 30 mm	12 and 6 mm
C.P.C.F.G.	TUNISIA	1800 x 5000	PHOSPHATE	300 T/h.	0 - 80 mm.	15 mm.
SERELAND-TOROS	TURKEY	2000 x 4250	FERTILIZERS	120 T/h.	0 - 50 mm.	4 and 2 mm
TECLANT GABES	TUNISIA	2000 x 4750	NPK-DAP	160 T/h.	0 - 20 mm.	2 mm
OMNIA	SOUTH AFRICA	2000 x 5000	TSP	150 T/h.	0 - 80 mm.	4 and 2 mm
ENUSA	SPAIN	2000 x 5750	URANIUM MINERAL	800 T/h.	0 - 300 mm.	70 and 40 mm
C.P.G.	TUNISIA	2000 x 6000	PHOSPHATE	600 T/h.	0 - 150 mm.	40 mm.
O.C.P.	MOROCCO	2100 x 5000	PHOSPHORIC ROC	400 T/h.	0 - 250 mm.	60 and 10 mm
INCRO NAMAE	KOREA	2200 x 5750	FERTILIZERS	160 T/h.	0 - 80 mm.	4 and 2 mm
PEQUIVEN	VENEZUELA	2500 x 5750	FERTILIZERS	160 T/h	0 - 70 mm.	4 and 2 mm
AGRUMINSA	SPAIN	2500 x 6000	SIDERITE	250 T/h.	0 - 40 mm.	8 mm.
C.P.G.M.	ARGENTINA	2500 x 7250	COCK	180 T/h	0 - 50 mm.	12 and 6 mm

## HORIZONTAL SCREENS - VTT

CUSTOMER	COUNTRY	TYPE	PRODUCT	CAPACITY	SIZE	SEPARATION
DELATTRE	SUD KOREA	500 x 2500	AMMONIUM SUPHATE	15 T/h.	0 - 25 mm.	10 and 3 mm
KREBS	CHINE	630 x 2000	SAND	70 T/h.	0 - 6 mm	1 mm
SOFREM	TUNISIA	750 x 2200	IRON MINERAL	40 T/h.	0 - 12 mm	2 mm
KONRAD RUMP	GERMANY	800 x 3000	SCRAP IRON	75 T/h.	0 - 8 mm	6 mm
PENIB	SPAIN	1000 x 2000	CHEMICAL PRODUCT	1 T/h.	0 - 6mm	1 mm
LURGI	SPAIN	1000 x 2750	PYRITE	130 T/h.	0 - 200 mm	80 and 50 mm
MID SIAM SUGAR	THAILAND	1100 x 2750	SUGAR	40 T/h.	0 - 12 mm.	2 mm
WALTER INC	CANADA	1200 x 2500	COKE	70 T/h.	0 - 40 mm.	10 mm
T. URBASA	SPAIN	1200 x 5500	PELLETS	240 T/h.	0 - 150 mm	50 mm
PEÑARROYA	SPAIN	1400 x 3500	COAL	60 T/h.	0 - 30 mm.	10 mm.
AMCECO-GUARDO	SPAIN	1500 x 4000	COAL	660 T/h.	0 - 200 mm.	70 mm
PIRITA DE HUELVA	SPAIN	1500 x 4500	PYRITE	120 T/h.	0 - 150 mm.	30 mm
SERELETTI	CHILE	1600 x 4000	COOPER MINERAL	450 T/h.	0 - 150 mm.	50 and 15 mm
AGRUMINSA	SPAIN	1600 x 5000	TIN MINERAL	250 T/h.	0 - 200 mm.	40 and 6 mm
COCKERILL	BELGIUM	1600 x 5500	COKE	300 T/h.	0 - 40 mm.	50 mm
C.P.G.	TUNISIA	1750 x 4000	PHOSPHATE	150 T/h.	0 - 50 mm.	2,5 mm
PLUTOX	GREECE	1750 x 4250	QUARRY	600 T/h.	0 - 80 mm.	60,35,15 mm
SIRORO	INDONESIA	1750 x 5000	PELLETS	700 T/h.	0 - 45 mm.	30 mm
TESCO IMP	GHANA	1800 x 4000	QUARRY	500 T/h.	0 - 100 mm.	25 and 5 mm
SOLVAY	SPAIN	1800 x 6000	LIMESTONE	800 T/h.	0 - 250 mm.	80 and 40 mm
TORRESAL	SPAIN	2000 x 4000	SALT	400 T/h.	0 - 80 mm.	20 mm
ENUSA	SPAIN	2000 X 6000	URANIUM MINERAL	500 T/h.	0 - 120 mm.	40 and 10 mm
ENSIDESA	SPAIN	2000 x 6500	PYRITE	450 T/h.	0 - 20 mm.	5 mm
O.C.P.	MOROCCO	2250 X 4750	PHOSPHATE	250 T/h.	0 - 50 mm.	2,5 mm
C.P.G.	TUNISIA	2500 x 6000	PHOSPHATE	580 T/h.	0 - 70 mm	8 mm
MONOR	SPAIN	2500 x 7000	PELLETS	650 T/h.	0 - 30 mm.	12 and 5 mm
IMPREGILO	ITALY	2500 x 8000	STONE	2400 T/h.	0 - 600 mm.	120 mm
HISPAHOBRAS	BRAZIL	2750 x 6500	PELLETS	700 T/h.	0 - 35 mm.	18,12, 6 mm
E.N. SIDERURGIE	ALGERIA	2750 x 7000	IRON MINERAL	1600 T/h.	0 - 80 mm.	20 mm.
PIERART	NEW CALEDONIA	2750 x 7500	COKE	600 T/h.	0 - 60 mm.	25 mm

COMSPAIN WE ARE REPRESENTED IN MANY PLACES THROUGHOUT THE WORLD

COMSPAIN



AFFILIATES, REPRESENTATIVES AND ASSOCIATED COMPANIES



**COMPAÑÍA DE MANUTENCIONES  
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