



Chemicals and fertilizers



Dedusting, cool and heat



Drying, cooling



Vibrating material

COMSPAIN



Handling



"Turn-key plants"



Crushing, grinding

GENERAL BROCHURE

INDUSTRIAL PLANTS AND EQUIPMENTS



COMSPAIN XXI, S.A. is a holding with more than 1,000 employees, considering both offices and workshops. Besides these international offices, we have representatives in all continents, and thus we have been present worldwide, with a large number of references, for more than three decades.

■ HEAD OFFICES:

(Commercial and Technical Departments:)

Madrid (Spain)
Jakarta (Indonesia)

■ MANUFACTURING WORKSHOP:

Bilbao (Spain)
Gresik (Indonesia)

During all this time, we have received significant awards that illustrate the importance of our company in the industry world:

- 1989: Oscar granted by the CEPYME (Association of Spanish Companies) to the Best Company of the Year
- 1990: Export Award granted by the Madrid Chamber of Commerce and Industry
- 1992: Idem
- 1995: Idem
- 1996: Idem
- 1997: Idem
- 1999: Idem
- 2000: PRINCIPE DE ASTURIAS Nominations to the "International Company Excellence" Award (Internationalization and Competitivity)
- 2004: Certificate "Prestige Rating Book" from Dum & Bradstreet
- 2005: Idem
- 2006: Idem

Always with the guarantee of our UNE Quality Counselling Certification
UNE-EN-ISO 9001:2008, granted by Bureau Veritas.





DAP FERTILIZER PLANT

For a production of 2,900,000 T/year of DAP.

COMSPAIN has supplied, through Intecsa and Dragados Industrial, the complete granulation package, comprising granulators (4 of \varnothing 4.5 x 10 m), dryers (4 of \varnothing 4.75 x 35.2 m), coaters (4 of \varnothing 2.6 x 8 m), combustion chambers (4 of 10,000,000 Kcal/h), fluid beds, cooling units (4 of 2,500,000 Kcal/h), fans, lump crushers, dedusting heating assemblies and assembly and start-up supervision.

Customer: MA'ADEN/WORLEY PARSONS, Saudi Arabia.



DAP/MAP AND GTSP/MAP FERTILIZER PLANT

For a production of 340,000 T/year of DAP/MAP and 270,000 T/year of GTSP/MAP.

COMSPAIN has supplied the two complete granulation packages, including granulators (2 of \varnothing 3.5 x 8 m), dryers (2 of \varnothing 4 x 30 m), coaters (2 of \varnothing 2.5 x 7 m), fluid beds, fans, lump crushers and assembly and start-up supervision.

Customer: BUNGE MAROC PHOSPHORE, Morocco.

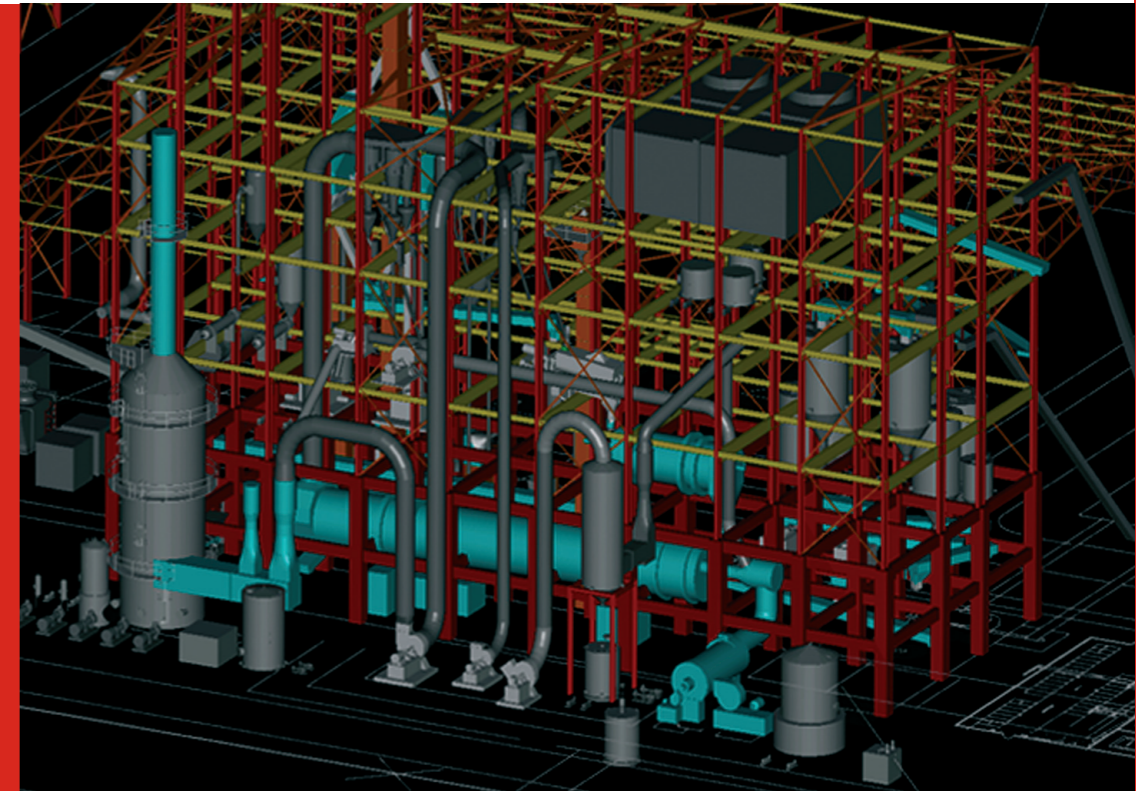


DCP AND MCP FOR ANIMAL FEEDING PRODUCTION PLANT

For a production of 100,000 T/year of phosphate.

COMSPAIN supplied the complete plant turn-key, thus including all production equipment, such as reactor, dryer, combustion chamber, coolers, screens, crushers, etc, as well as handling equipment and tanks, silos, building, civil works, electricity, regulation and control, erection and commissioning.

Customer: ERCROS, Escombreras, Spain



NPK FERTILIZER PLANT

For a production of 310,000 T/year of complex fertilizers NPK.

COMSPAIN has supplied the complete granulation package, including: dryer (\varnothing 3.8 x 30 m), granulator (\varnothing 3.2 x 8 m), coater (\varnothing 2.2 x 8 m), combustion chamber (8,500,000 Kcal/h), screens, fluid bed, cooling unit, pug mill, dosing and weighing, fans, lump crusher and the erection and commissioning supervision.

Customer: NAFAS-PETRONAS, Malaysia



COMSPAIN XXI, S.A. is an engineering company, manufacturer of plants and heavy equipment, founded in 1976. It has now formed a holding with the state-owned Indonesian Company PT REKAYASA INDUSTRI.

FIELDS

- Process
- Lab tests
- Basic and detailed engineering
- Procurement, manufacturing and control
- Transports
- Erection and commissioning
- Project management
- Spare parts and after-sales service
- Financing

DIVISIONS

- **Drying, cooling and calcination (drums and fluidisation)**
- **Chemical and fertilizer industry**
- **Auxiliary equipment (cool air, dedusting and combustion)**
- **Vibrating material**
- **Handling and storage**
- **Crushing, grinding and disintegration**
- **“Turn-key plants”**
- **Municipal solid waste plants**

MANUFACTURING AND ASSEMBLING

The manufacturing, assembling and expedition divisions are located in Bilbao (north of Spain) and in Gresik (Indonesia). In both cases the seaport are near and accessible for big loadings. We also offer the possibility to manufacture in different countries, always under our control and guarantee.

QUALITY CONTROL AND LAB TESTS

We carry out our Quality Control with the collaboration of the companies such as SGS, Lloyd Register of Shipping, Bureau Veritas, in compliance with the Quality Counselling Norm **UNE-EN-ISO 9001:2008**

We have pilot plants and equipment available to carry out all kind of tests in our installations or in the customers' industrial centres.

ISO 9001

BUREAU VERITAS
Certification



DRYING, COOLING AND CALCINATION (DRUMS AND FLUIDISATION)

DESIGN OF COMPLETE PLANTS - TESTING CENTER

In this division we have used our experience over the last 30 years in vibrating and static fluid beds, rotary drums with direct and indirect contact and in all kind of dryers.

All bulk solid products can be treated as follows:

FIELDS

Drying
Calcination
Dehydration
Desolventizing
Cooling
Granulation
Pyrolysis
Reaction
Reduction
Coating
Polymerisation
Mixing
Classification
Crushing
Transport
Gas washing

MANUFACTURING PROGRAMME

Fluid beds
Fluidisation at high temperature
Fluid bed with exchangers
Vibrating and static fluid beds
Flash and pneumatic dryers
Tower dryers
Rotary drums: dryers, calciners, coolers, granulators and coaters
Indirect drums (jacketed, pipes, discs, shovel ...)
Drying tunnels and stoves
Other kind of drums (reactors, raining, digesters)

“COMSPAIN has the solution for difficult, caked, degradable, fragile, corrosive, abrasive products”



Pre-drying, drying and cooling Fluid beds

Total surface of the three stages: 50 m² .

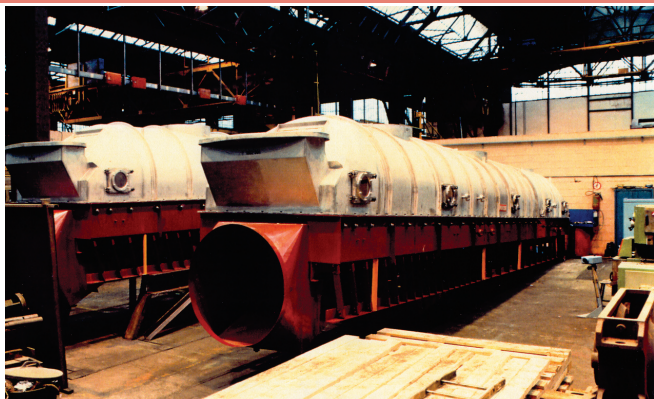
Flow: 10 T/h.

Vibrating and static fluid beds to carry out the continuous product treatment at different temperatures, according to the process stage, with the addition or not of steam.

Product: Sodium perborate (tetrahydrate).

COMSPAIN has supplied three complete lines of pre-drying, drying and cooling including vibrating feeders, lump crushers, pre-drying vibrating fluid bed on springs, vibrating drying fluid bed on blades, static cooling fluid beds, direct fire combustion chamber for natural gas, fans and filters.

Customer: FORET, Zaragoza – Spain



High Temperature Fluid Beds

12, 20 and 32 m² .

Flow: 45 T/h max.

Special design for working at low pressure (using cogeneration gas) and at a high temperature (400° C).

Product: Sepiolite, bentonite, atapulghite and “pangel”.

Including the product cooling system.

Plants with auxiliary combustion chambers, flash drying for fines, cyclones, bag filter, etc.

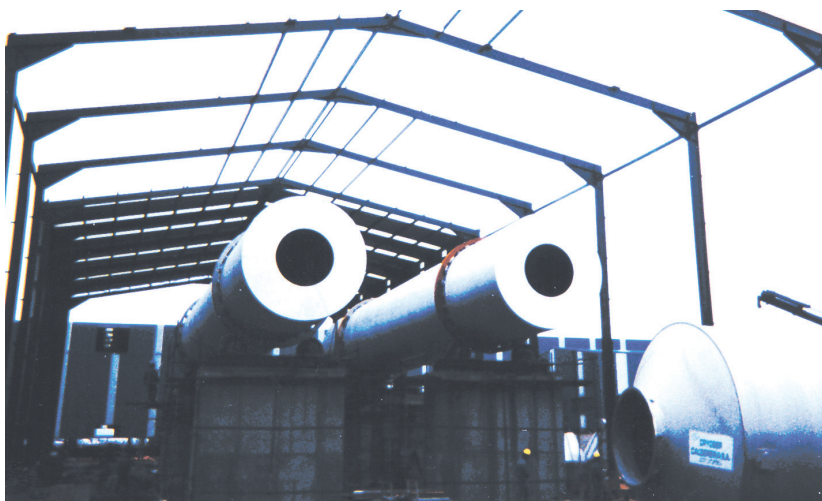
Customers: TOLSA, HEFRAN, MYTA, SEPIOLSA – Spain

NPK/DAP Fertilizer Plant

For a production of 150,000 T/year of NPK/DAP.

COMSPAIN has supplied, in collaboration with Incro, the whole extended Engineering, as well as equipments, including granulator, dryer, cooler, coater, crushers, pug mil, lump crusher, screens, internal parts of the buckets, feeders, combustion chamber, cooling unit, fans, electricity and instrumentation, and equipments and engineering for ammonia storage and conditioning.

Customer: EL NASR CO. FOR INTERMEDIATE CHEMICALS (NCIC), Egypt.



Waste Treatment / Drying Plant

2 drums in parallel, Ø 3.6 x 25 m.

Flow: 2 x 25 T/h.

Special design for minimising the fines fly (intelligent exhaust).

The plant includes gas washing (acid, alkaline and final), rotary valves, cyclones, conveyor belts. Drying gas in cogeneration.

Customer: UTE MEIRAMA (SOGAMA), La Coruña – Spain

Phosphate Treatment Plant

Drying with 2 drums in parallel, Ø 3.6 x 20 m.

Flow: 2 x 100 T/h.

Drying at 900° C with rotary cup burner chamber.

Washing and classification.

Washing drum Ø 3.6 x 11 m.

Horizontal screen 2 x 6 m. with watering.

Plant completed with cyclones, multicyclones, chambers, ducts and stack.

Customer: NEYRTEC, GECOPHAM, Palmyra – Syria



CHEMICAL AND FERTILIZER INDUSTRY

CHEMICAL PRODUCTS

... among other products, we have experience with alumina balls, aminoacids, ammonium sulphate, atapulgite, bauxite, bentonite, bicalcic phosphate, boric acid, catalysts, citric acid, explosives, magnesium, magnesium sulphate, manganese dioxide, methyl carbon, monocalcic phosphate, monosulphate, oxalic acid, polymer scales, polyvinyl acetate, polyvinyl chloride (PVC), porous nitrate, potassium bromide, potassium nitrate, sepiolite, sodium chlorate, sodium metabisulfite, sodium metasilicate, sodium nitrate, sodium perborate, sodium percarbonate, sodium sulphate, sodium sulphite, sodium tripolyphosphate, synthetic rubber, polyethylene, polyolefine, polystyrenes, resins, talc, trioic benzoic acid, trisodium phosphate, etc.

EXPERTISE IN FERTILIZING PROCESSES

NP – PK – NPK – GSSP – GTSP – MAP – DAP – UREA – AMMONIUM NITRATE –
CALCIC AMMONIUM NITRATE – AMMONIUM SULPHATE – NITROSULPHATE –
ORGANICS – ORGANO-MINERALS – MAGNESIUM –
MAGNESIUM SULPHATE – PHOSPHATES – COMPOST

A COMPLETE RANGE OF EQUIPMENT

- Feeders.
- Distributors.
- Process screens.
- Final product screens.
- Lump crushers.
- Coolers (rotary drums, fluid beds).
- Granulators (rotary drums, screw, drums, fluid bed or plate).
- Mixers.
- Crushers.
- Composting plants.
- Reactors
- Dryers (rotary drums, vibrating fluid bed, including combustion chambers).
- Coating drums (single or double pass).
- Process vessels and tanks.
- Air conditioning units (open and closed circuit).
- Parcs (stacker and reclaimer).

“ASK FOR OUR REFERENCE LIST”



Drying Drum Ø 4.5 x 30 m

Flow: 310 T/h.

Product: NA, NAC. Engineering: Initec.

Totally manufactured in stainless steel, thickness 25 and 50 mm.

COMSPAIN supplied the whole plant, including a 29 m² static fluid bed, coating drum, air conditioning unit, vibrating feeders, screens, filters, fans, hoppers, ducts, etc.

Customer: FERTIBERIA, Sagunto – Spain.

30 m² Static Fluid Bed for Fertilizers Cooling

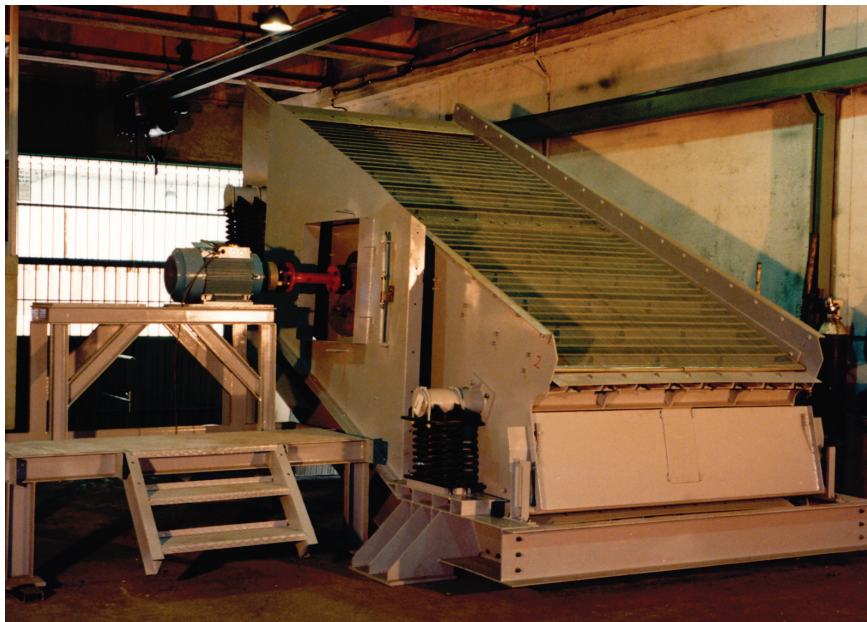
Flow: 60 T/h.

Product: NPK, DAP.

Engineering: Tecplant Ingest (Technipetrol).

COMSPAIN supplied the complete turn-key plant, including drums (granulator, dryer and coater), cooling fluid bed, crushers, vibrating feeders, screens, combustion chambers, air conditioning unit, etc.

Customer: ENGRAIS DE GABES DAP 2 unit – Tunisia



Fertilizer Screen 2 x 4.25 m (8.5 m²)

Flow: 110 T/h.

Product: DAP.

For GUANXI LUZHAI (China).

COMSPAIN also supplied the cooling fluid bed, vibrating feeders, hammer crushers, etc.

Customer: TOYO ENGINEERING Co. – Japan

Dryer Drum ø 4.4 x 54 m

Flow: 150 T/h

Product: Beneficiated copper

Engineering: Bipromet

COMSPAIN supplied the complete drying installation (including rotary screening), screens, crusher, fan, etc.

Customer: KGHM/MERCUS, Poland



AUXILIARY EQUIPMENT (COOL AIR, DEDUSTING AND COMBUSTION)

As a complement to the previous department, and mainly for the supply of equipments in working conditions of complete “turn-key” Plants ...

COMSPAIN has developed several auxiliary equipment, such as:

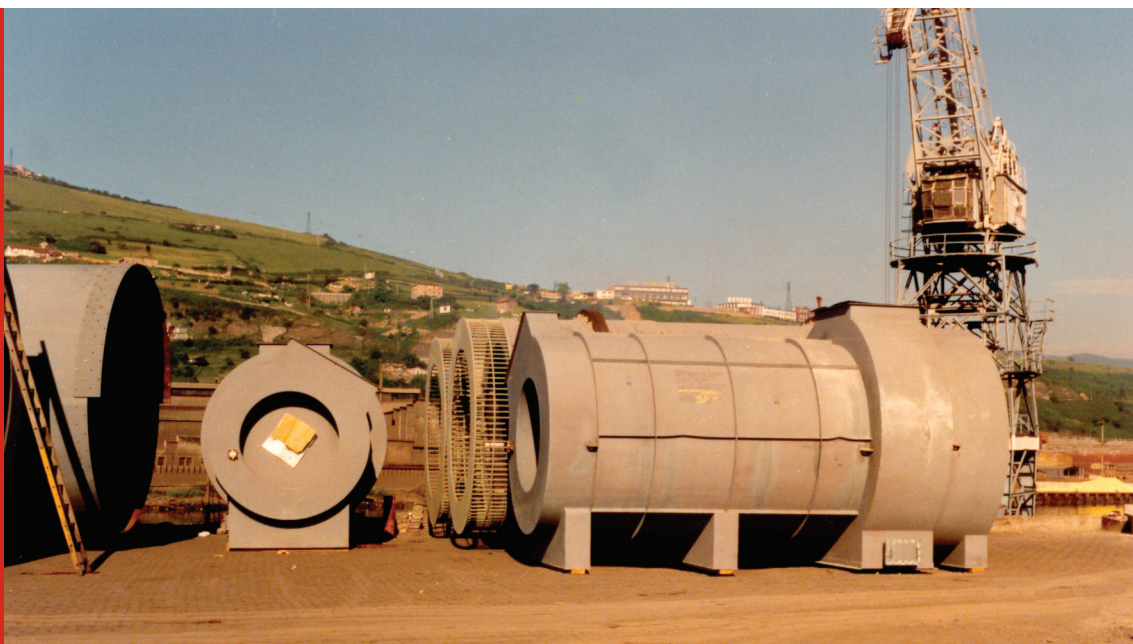
ACTIVITIES - MANUFACTURING PROGRAMME

- Insulation, (ceramic fibre, refractory lining).
- Combustion chambers and air heaters.
- Dedusting, (cyclones, multicyclones, scrubbers, filtering, ...).
- Bucket elevators.
- Fluidization of silos.
- Instrumentation.
- Exchangers.
- Power and control panels.
- Agitators.
- Chain conveyors
- Ducts and pipes (Piping).
- Pressure vessels and tanks for liquids and gas (ammonium, water steam, demineralised water, LPG, sea water, “desuperheaters”).
- Silos, etc.
- Scrubbers, condensers.
- Screw conveyors.
- Fans.
- Belt conveyors.

In order to achieve a good performance, a chemical plant must be fitted with auxiliary equipment or units of a good technology and high quality, which should be designed by the manufacturer of the dryers, coolers, reactors, etc.

COMSPAIN can offer a suitable solution for these auxiliary equipment, either with our own technology or in association with other companies, leaders in each field.

“This way, there is ONE SOLE RESPONSIBLE for the whole Plant”

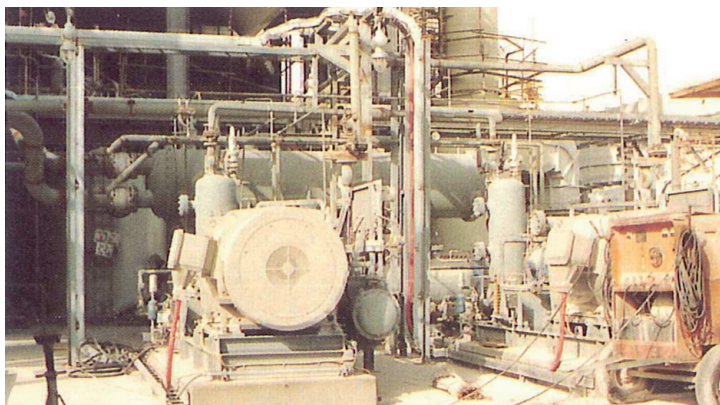


2 Combustion Chambers for fuel-oil, capacity 30,000,000 Kcal/h.

Automatic regulation according to the temperature of the process gas.

COMSPAIN also supplied the redler, screw conveyor, cylinder crushers, hammer crushers and vibrating feeder.

Customer: GENERAL FERTILIZER CO., Homs – Syria.



Two Air Conditioning Units at 8° C and 50% RH

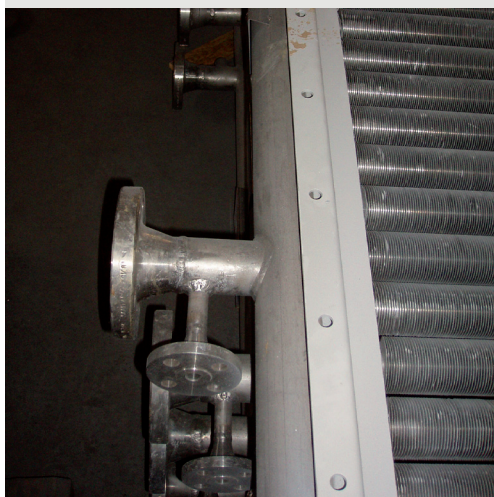
Cooling power: 2 x 1,800,000 Kcal/h

Product: NPK/DAP/GTSP

Production: 1,500,000 T/year

COMSPAIN supplied the complete turn-key installation (2 lines), including granulator, dryer and coater drums, fluid beds coolers, crushers, vibrating feeders, combustion chambers, air conditioning units (closed circuit), etc.

Customer: NATIONAL FERTILIZER COMPANY - SABIC, Saudi Arabia.



Two Air Conditioning Units at 12° C and 75% RH

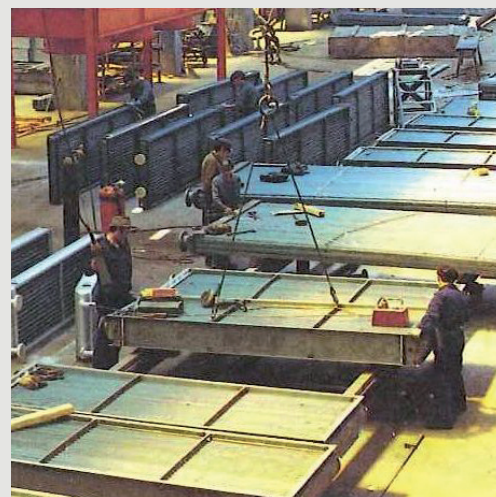
Capacity: 2 x 4,300,000 Frig/h

Product: DAP

Production: 2 x 850,000 T/year

COMSPAIN has supplied the complete cooling installation, comprising fluid beds, fans, filters and instrumentation. This project is also complemented with the two above-mentioned air conditioning units with ammonia, in open circuit, which include their relevant filters, air chillers, demisters, air heaters and ammonia separating tanks.

Customer: JACOBS/MAROC PHOSPHORE (OCP), Morocco.



Bag Filter and Air Treatment

For filtering 100,000 m³/h of air with NPK fines.

1,670 m² filtering area and automatic cleaning system by means of air jet in counter current with respect to the pressure drop or by preset programming.

COMSPAIN has also supplied the plant equipments, including granulator, dryer and cyclones, as well as assembly and start-up supervision.

Customer: INABONOS / ROULLIER GROUP, Spain.

VIBRATING MATERIAL “for good vibrations”

This division offers a range of equipment designed for the treatment of bulk products in classification and transport processes:

FIELDS

- Fertilizers
- Cements
- Power Stations
- Ceramics
- Casting
- Gravel mine
- Food industries
- Pharmaceutical industries
- Chemical industries
- Mines and quarries
- Siderurgy
- Phosphates
- Coal

MANUFACTURING PROGRAMME

- Exhausters
- Screens
- Horizontal Screens
- Distributors
- Electromagnetic dosing systems
- Exciters
- Extractors and feeders
- Motor vibrators
- Pre-screeners
- Sieves and micro-sieves
- Vibrating conveyors
- Classifying trommels
- Washing trommels
- Feeders
- Vibrating fingers
- Mobile groups



Horizontal VTT screen 2,500 X 6,000 with washing trommel

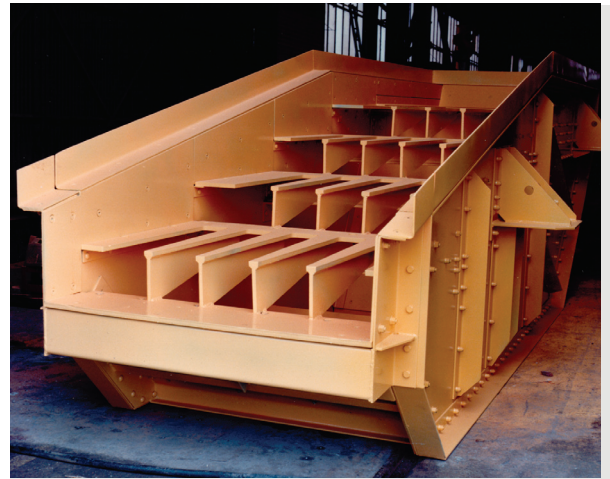
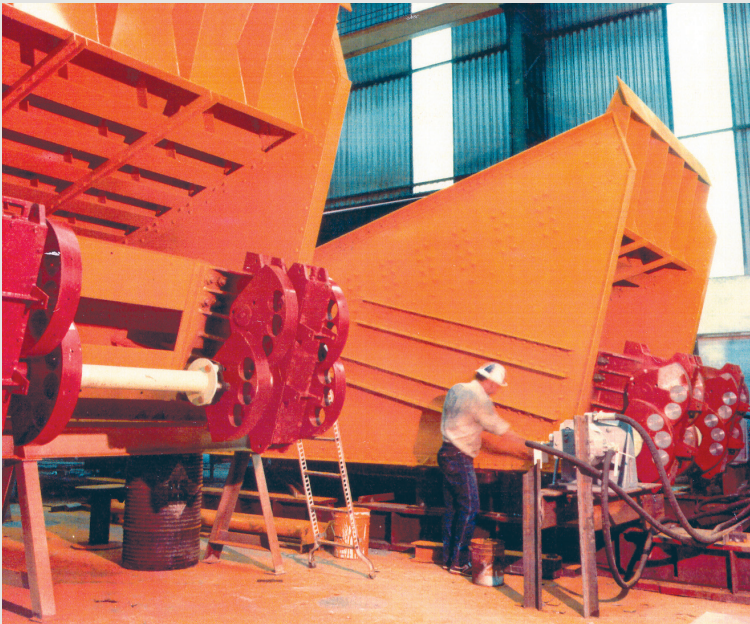
Flow: 500 T/h.

Granulometry: 0/30 mm

Product: Washed phosphate

Customer: **NEYRTEC MINERAL - France**

Extractor feeders 3,000 x 8,000 mm
 Flow: 5,000 T/h.
 Granulometry: 0/2,000 mm.
 Product: Limestone.
 Customer: **Cantera Guavio – Colombia**



Extractor pre-screener feeder 2,500 x 6,000 mm
 Flow: 1,600 T/h.
 Granulometry: 0/1,500 mm.
 Product: Bauxite.
 Customer: **Cantera Bauxiven – Venezuela**

“A great experience in handling bulk solids”

Horizontal screen 3,000 x 9,000 mm
 Flow: 2,500 T/h.
 Granulometry: 0/400 mm
 Cuts: 90 and 40 mm
 Product: Mine Iron ore
 Customer: **SNIM - Mauritania**



Horizontal screen 2,750 x 8,000 mm
 One deck.
 Flow: 2,500 T/h.
 Product: Stored DAP.
 Customer: **PHB WESERHÜTTE, Spain/Saudi Arabia**

HANDLING OF SOLIDS

COMSPAIN can convey and store all kind of rocks, minerals, chemical products and municipal waste materials, with productions of up to 7,000 T/h, granulometries from “quarry gross” down to a few microns; Parks of up to 250,000 tons and belts of any length as well as special belts.



Reclaimer with two bucket wheels of 3,500 T/h:
ENDESA (As Pontes de García Rodríguez, Spain) Coal,
KOCH technology.



Stacker with reversible and mobile belt:
DRAGADOS TIRMADRID (Madrid, Spain) Municipal
Waste Materials.



Conveyor belts (1,300 T/h), for the feeding at the
MA'ADEN/WORLEY PARSONS phosphoric acid plant in
Saudi Arabia. Engineering LITWIN.



Silos and bucket elevators: FERTIAL (Annaba, Algeria)
Dolomite.



Portal scraper at the indoor storage park for phosphate
and additives of 21,300 m² and 160,000 T for the whole
chemical complex of Ras Az Zawr.
Customer: MA'ADEN/WORLEY PARSONS –
Engineering: LITWIN.

CRUSHING, GRINDING AND DISINTEGRATION

PLANTS / EQUIPMENTS / MOBILE AND SEMI-MOBILE ASSEMBLIES

Our mechanical arrangement division offers a range of equipment designed for all kind of primary and secondary crushing, grinding, pulverization and disintegration, both on mobile, semi-mobile or fixed equipment:

FIELDS

Fertilizers
Cements
Power stations
Ceramics
Castings
Gravel mines
Mines and quarry
Siderurgy
Food industries
Pharmaceutical industries
Chemical industries
Phosphates
Coal

MANUFACTURING PROGRAMME

Lump crushers
Jaw crusher
Cylinder crushers
Hammer crushers
Roller mills
Chain crushers
Impact crushers
Squirrel cage mills
Vibrating de-moulding grates
Mobile plants (for feeding, crushing, classification, waste recovery)
Mould stripper drums
Attrition washing drums
Crushing-separating drums
Metallic hoppers
Pug mills

We “disintegrate” your problems



Pre-screener/ Extractor/ Feeder and Jaw-Crusher

Vibrating, type: 2,500 x 6,000 mm.

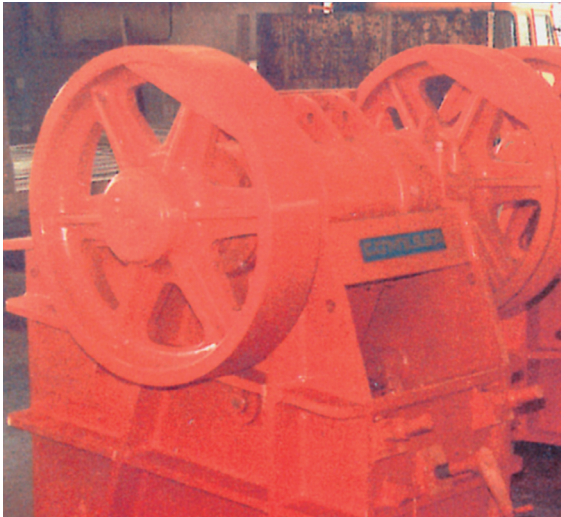
Crusher: 1,300 x 1,600 mm.

Flow: 1,600 T/h.

Granulometry: 0/1,500 mm.

Product: Dolomite.

Customer: FL-SMIDTH – Denmark, for CEMENTOS DE PACASMAYO – Peru



Jaw-Crushers type 600/800

Single Effect

Flow: 180 T/h.

Product: Limonite 0/600 to 0/120 mm.

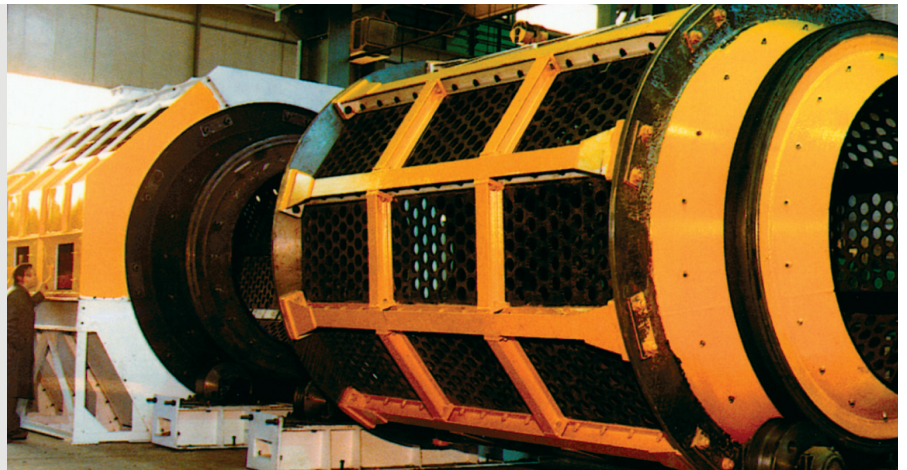
Customer: Cienfuegos Mine – Cuba

Grinding – Separating Trommels – type TTS 28 X 37

Flow: 90 T/h.

Product: Coal 100/400 mm.

Customer: ENDESA, Andorra Mine, Teruel – Spain



COMSPAIN can process all kind of rocks and minerals with productions up to 2,000 T/h and granulometries of 0/1,800 mm at the inlet, as well as fine grinding for chemical products or lump-crushing for fertilizers.

Hammer Crushers

EL NASR CO FOR INTERMEDIATE CHEMICALS, Egypt

Cylinder Crushers

NITROGEN MÜVEK, Hungary

Mobile Group on crawler track. Pre-screener and Impact Crusher

Flow: 250 T/h.

Material: Miscellaneous.

Customer: Cubiertas y MZOV – Spain



TURN-KEY PLANTS

COMSPAIN carries out both the engineering and the manufacturing of a large number of heavy equipment, mainly in the field of solid treatment.

This capacity, together with its know-how of varied processes and its possibility to carry out the erection and commissioning of the equipment with its own specialized technicians, make it the most suitable partner to execute turn-key projects, with full responsibility.



GRANULATION PLANT

Country: Saudi Arabia
City: Al Jubail (Persian Gulf)
Customer: National Fertilizer Company (SABIC)
Engineering: TPL (Italy)
Process company: INCRO/JACOBS
Products: NPK/DAP/GTSP
Production: 108/108/54 T/h per line
(two lines): 750,000 T/year per line



DAP PLANT

Customer: Groupe Chimique Tunisien, Gabes, Tunisia
For a production of 400,000 T/year of complex granulated fertilizers (NPK and DAP).

COMSPAIN has supplied the complete granulation package including: dryer, granulator, combustion chamber, screens, fluid bed, cooling unit, lump crusher and erection and commissioning supervision.

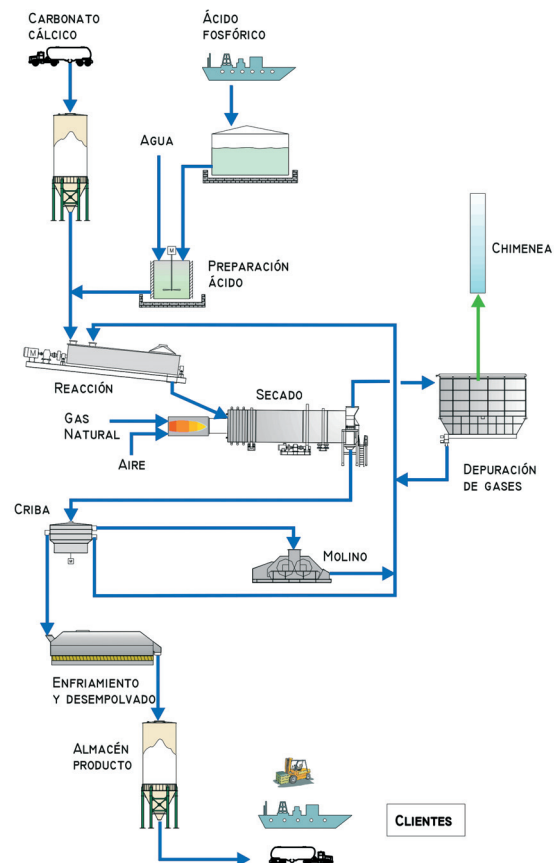
“Monocalcic / Bicalcic Phosphate Plant” in Escombreras (Cartagena, Spain), for Fosfatos de Cartagena (Ercros Group).

Calcic phosphate replaces the use of waste (bones, feathers, meat) in food for animals, forbidden after the “crazy cows” problem.

The plant has a capacity of 100,000 T/year of Bicalcic Phosphate and of 71,400 T/year of Monocalcic Phosphate.

COMSPAIN offered:

- Collaboration in the process
- Basic engineering
- Detailed engineering
- Civil works
- Buildings
- Electricity
- Regulation and control
- Equipment
- Erection
- Commissioning



Calcium Ammonium Nitrate Plant in Algeria (Annaba and Arzew-Oran).

COMSPAIN has designed, manufactured, transported and mounted, on a turn-key basis, these two plants belonging to Fertial-Fertilisants d'Algérie, including Civil Works, metallic structures, electricity and control and regulation.

Both factories manufactured soluble ammonium nitrate.

It has been necessary to add a new feeding and crushing area for solids, in order to lower the nitrate grade, as well as a dedusting plant (primary washer, secondary washer and stack) which handles one million m³/hour of air in each plant. The production of calcium ammonium nitrate, with a lesser explosion risk and better price than the ammonium nitrate, should be 300,000 T/year in each plant.



MANUFACTURING PLANT FOR REFUSE DERIVED FUEL

Country: Spain

Location: Cerceda (La Coruña)

Customer: Sogama (joint venture between Galicia Government, Urbaser, etc.)

Engineering: Comspain

Process company: Comspain

Product: Fuel for fluid bed boiler

Process: Drying in 2 parallel lines

Production: 50 T/h

Electric power: 50 MW

Total treatment capacity: 600,000 T/year

COMSPAIN has designed, manufactured and commissioned the feeding and drying lines, including the complex dedusting and washing system with cyclones and scrubbers (basic/acid) of washing.



PLANTS FOR DAP GRANULATION, STORAGE AND PHOSPHORIC ACID

Country: Saudi Arabia

Location: Ras Az Zawr (Persian Gulf)

Customer: Ma'aden / Worley Parsons

Engineering: Intecsa Industrial / Litwin

Process company: Incro

Products: DAP / MAP / Phosphate / Phosphoric Acid from DAP granulation

Production:

- 4 x 105 T/h in each unit (4 lines x 725,000 T/year)

- 4,400 T/h of phosphate in the "Material Handling" section (including storage park of 21,300 m² and 160,000 T)

- Up to 400 T/h in the phosphate and additives handling for the phosphoric acid plant.

MUNICIPAL SOLID WASTE

Our Environment Division offers a range of equipment designed for any kind of Municipal Solid Waste (M.S.W.) and Sludge treatment processes.

The **COMSPAIN** technologies enable an improvement in the recovery of these materials (such as compost, combustible, etc...), as well as a reduction in the subsequent treatment or handling costs.

·Screening Systems

- Screens with a patented system to prevent clogging.
- M.S.W. classifying trommels.
- Compost refining trommels.

We carry out studies according to your requirements for filtering capacity, flow, dimensions, power...

·Composting Plants

Custom-made design of the compost fermentation plants, for supplying a fully automatic or a manual system, according to your requirements.

·Feeding Systems

- Vibrating feeders: **COMSPAIN** supplies the best technical solutions to produce a vibration according to the forecasted speed.
- Plate feeders: Fitted with anti-wear steel plates. We adapt to your requirements: either chain conveyors or sliding conveyors.

·Sludge Treatment

From filling into silos with special extraction technologies, up to drying (indirect and direct drums), calcination, etc.

DRYING AND TREATMENT

COMSPAIN has been pioneer in the drying and treatment of the organic part of the Municipal Solid Waste for its use as combustible in fluid bed boilers, for the generation of electrical energy.

For SOGAMA in Cerceda (Galicia, Spain) we produce 50 T/h of organic combustible, with an electrical power of 50 MW.

Automatic Composting Plant
Composting: Koch España, S.A.
Compost refining: COMSPAIN
Customer: **DRAGADOS, Madrid – Spain.**
Valdemingómez Plant





PHOSPHATE PARC IN SAUDI ARABIA

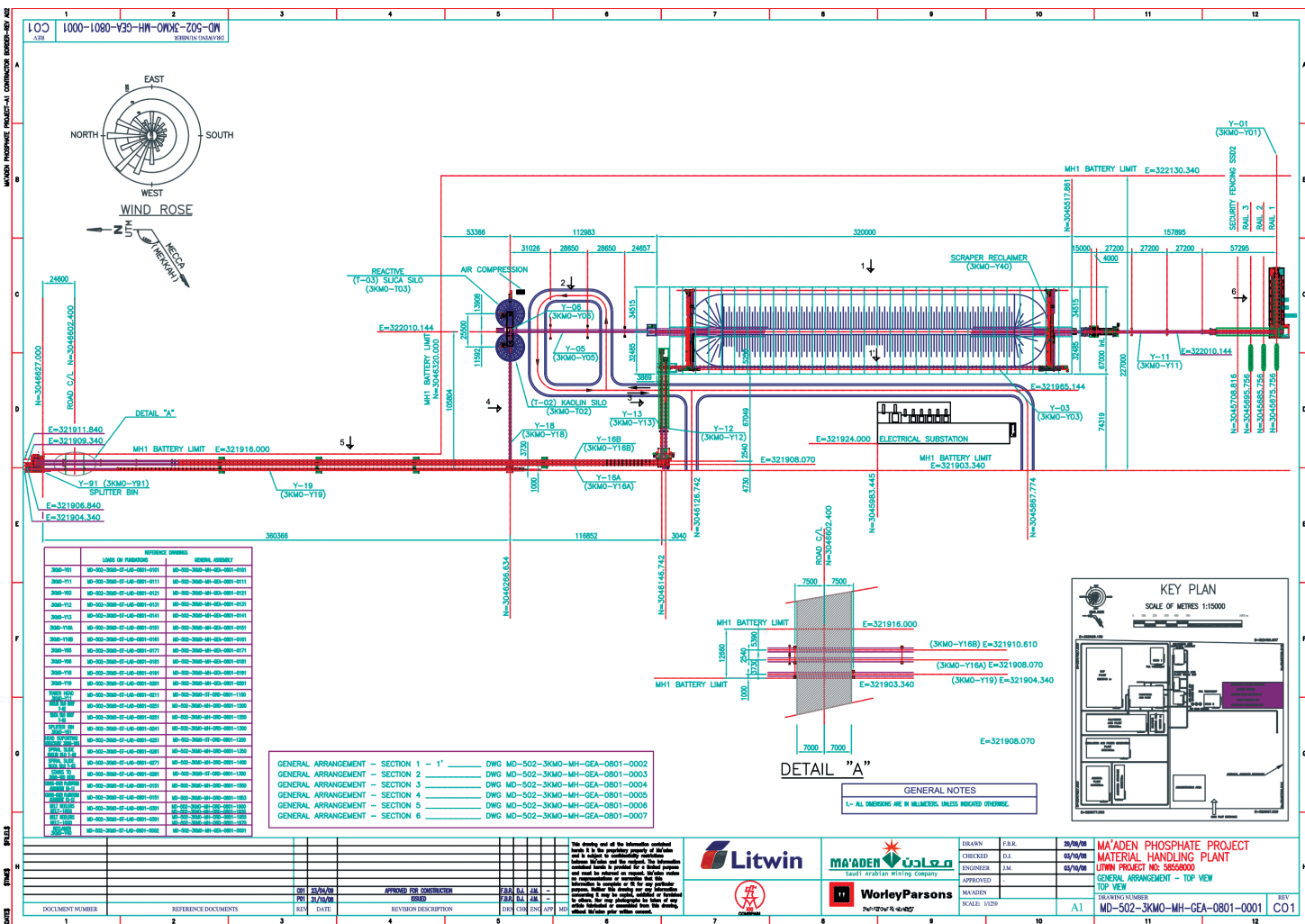
The so-called MH1 project ("Material Handling" no. 1) collects the washed phosphate from the AL JALAMID Mine and from the Beneficiation Plant, discharging it from the railroad at a rate of 4,400 T/h.

This phosphate is stored at an indoor park of 21,300 m² and 160,000 T and it is distributed to the whole chemical complex of Ras Az Zawr, made up of factories for ammonia, sulphuric acid, phosphoric acid and complex fertilizers (DAP).

COMSPAIN is also in charge of the collection of additives (Kaolin and silicate), of their storage in silos of up to 13,000 m³ and of their distribution throughout the complex.

The Phosphate Park is fed by a tripper conveyor with a capacity of 4,400 T/h of phosphoric rock. The extraction is carried out by a reclaimer or scraper framework with two arms and a 60 m span, with a capacity of 1,000 T/h.

Silos for additives (Kaolin and silicate). The silicate silo is fitted with a fluidization system, which guarantees a complete extraction by means of canyons and panels.



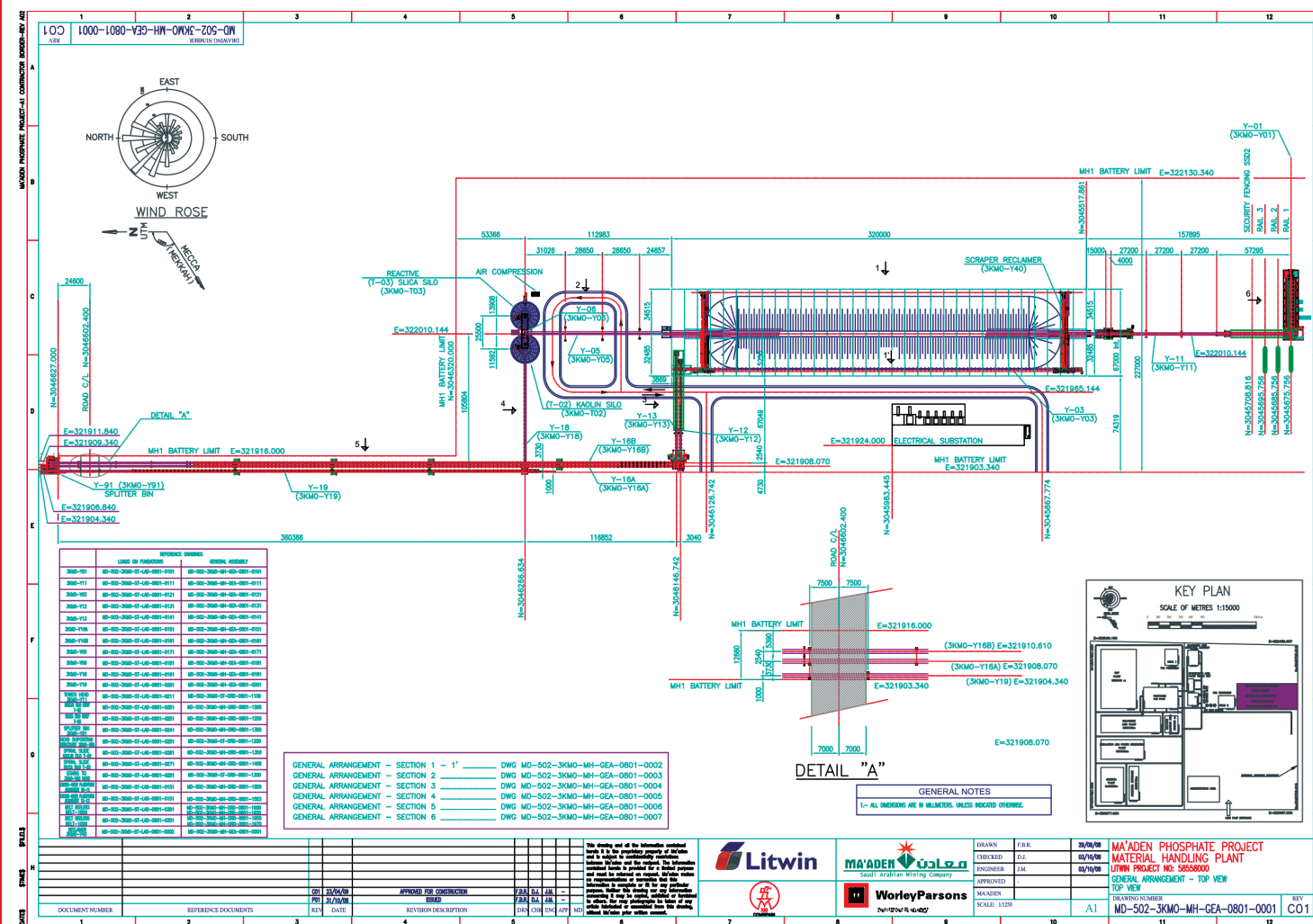
NO	DATE	REVISION DESCRIPTION	BY	CHK	APP
001	23/04/08	APPROVED FOR CONSTRUCTION	FAR	JAR	-
002	31/05/08	ISSUED	FAR	JAR	-

DRAWN	P.R.B.	23/04/08	MA'ADEN PHOSPHATE PROJECT MATERIAL HANDLING PLANT LITWIN PROJECT NO: 3658000 GENERAL ARRANGEMENT - TOP VIEW TOP VIEW DRAWING NUMBER: MD-502-3KMO-MH-GEA-0801-0001
CHECKED	D.J.	02/05/08	
ENGINEER	J.M.	02/05/08	
APPROVED	J.M.		
MAJOR			
SCALE	1:125		
			A1



PHOSPHATE PARC IN SAUDI ARABIA

The so-called MH1 project ("Material Handling" no. 1) collects the washed phosphate from the AL JALAMID Mine and from the Beneficiation Plant, discharging it from the railroad at a rate of 4,400 T/h. This phosphate is stored at an indoor park of 21,300 m² and 160,000 T and it is distributed to the whole chemical complex of Ras Az Zawr, made up of factories for ammonia, sulphuric acid, phosphoric acid and complex fertilizers (DAP). COMSPAIN is also in charge of the collection of additives (Kaolin and silicate), of their storage in silos of up to 13,000 m³ and of their distribution throughout the complex. The Phosphate Park is fed by a tripper conveyor with a capacity of 4,400 T/h of phosphoric rock. The extraction is carried out by a reclaiming and scraper framework with two arms and a 60 m span, with a capacity of 1,000 T/h. Silos for additives (Kaolin and silicate). The silicate silo is fitted with a fluidization system, which guarantees a complete extraction by means of canyons and panels.



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INDUSTRIAL PLANTS AND EQUIPMENTS



COMSPAIN XXI, S.A. is a holding with more than 1,000 employees, considering both offices and workshops. Besides these international offices, we have representatives in all continents, and thus we have been present worldwide, with a large number of references, for more than three decades.

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During all this time, we have received significant awards that illustrate the importance of our company in the industry world:

- 1989: Oscar granted by the CEPYME (Association of Spanish Companies) to the Best Company of the Year
- 1990: Export Award granted by the Madrid Chamber of Commerce and Industry
- 1992: Idem
- 1995: Idem
- 1996: Idem
- 1997: Idem
- 1999: Idem
- 2000: PRINCIPE DE ASTURIAS Nominations to the "International Company Excellence" Award (Internationalization and Competitivity)
- 2004: Certificate "Prestige Rating Book" from Dum & Bradstreet
- 2005: Idem
- 2006: Idem

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KOCH TRANSPORTTECHNIK
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STEIN ET ROUBAIX
STRUTHERS WELLS
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T.P.L.
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TALCS DE LUZENAC
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VIANNINI
WORLEY PARSONS
ZAKLADY AV

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DAP FERTILIZER PLANT

For a production of 2,900,000 T/year of DAP. **COMSPAIN** has supplied, through Intecsa and Dragados Industrial, the complete granulation package, comprising granulators (4 of ø 4.5 x 10 m), dryers (4 of ø 4.75 x 35.2 m), coaters (4 of ø 2.6 x 8 m), combustion chambers (4 of 10,000,000 Kcal/h), fluid beds, cooling units (4 of 2,500,000 Kcal/h), fans, lump crushers, dedusting heating assemblies and assembly and start-up supervision.
Customer: MA'ADEN/WORLEY PARSONS, Saudi Arabia.



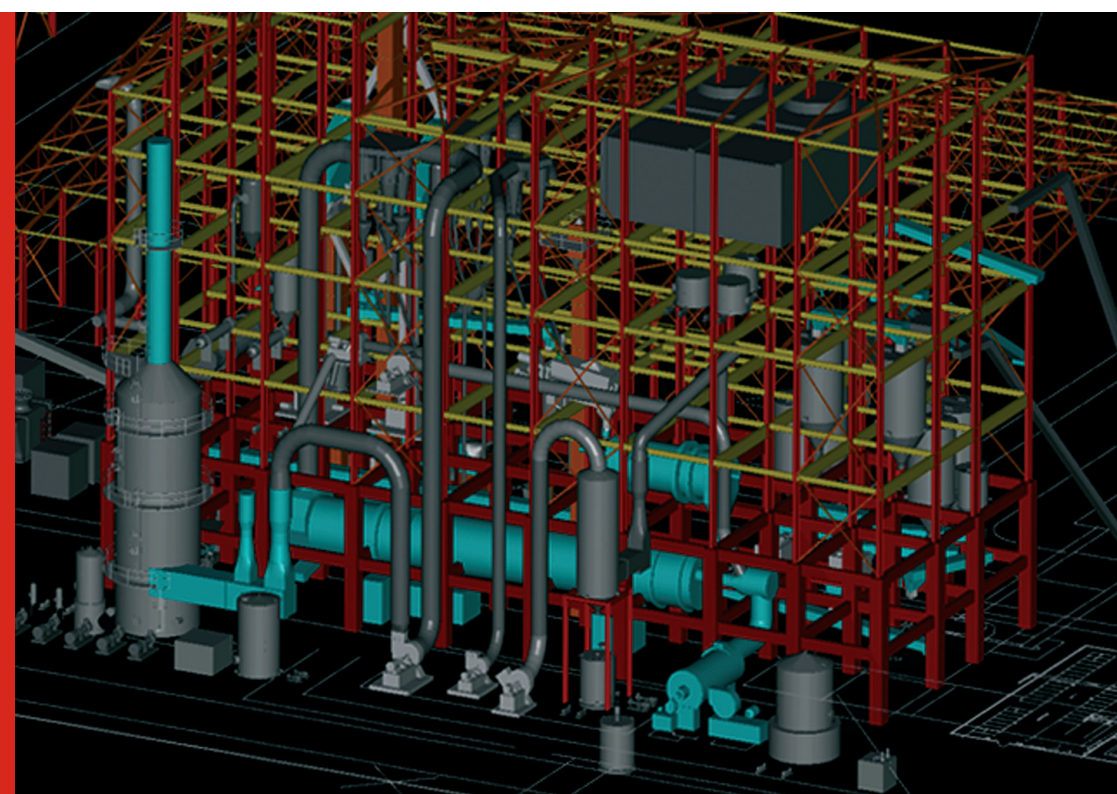
DAP/MAP AND GTSP/MAP FERTILIZER PLANT

For a production of 340,000 T/year of DAP/MAP and 270,000 T/year of GTSP/MAP. **COMSPAIN** has supplied the two complete granulation packages, including granulators (2 of ø 3.5 x 8 m), dryers (2 of ø 4 x 30 m), coaters (2 of ø 2.5 x 7 m), fluid beds, fans, lump crushers and assembly and start-up supervision.
Customer: BUNGE MAROC PHOSPHORE, Morocco.



DCP AND MCP FOR ANIMAL FEEDING PRODUCTION PLANT

For a production of 100,000 T/year of phosphate. **COMSPAIN** supplied the complete plant turn-key, thus including all production equipment, such as reactor, dryer, combustion chamber, coolers, screens, crushers, etc, as well as handling equipment and tanks, silos, building, civil works, electricity, regulation and control, erection and commissioning.
Customer: ERCROS, Escombreras, Spain



NPK FERTILIZER PLANT

For a production of 310,000 T/year of complex fertilizers NPK. **COMSPAIN** has supplied the complete granulation package, including: dryer (ø 3.8 x 30 m), granulator (ø 3.2 x 8 m), coater (ø 2.2 x 8 m), combustion chamber (8,500,000 Kcal/h), screens, fluid bed, cooling unit, pug mill, dosing and weighing, fans, lump crusher and the erection and commissioning supervision.
Customer: NAFAS-PETRONAS, Malaysia

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