

A watercolor illustration of a bulk material handling facility. The scene features a large, dark brown conveyor belt system supported by a complex network of red metal trusses. In the center, there is a tall, cylindrical silo or hopper structure with a blue and white top section. Below this, a horizontal conveyor belt runs across the frame. The background is a warm, orange-hued sky with soft clouds. The overall style is artistic and illustrative.

 **Indiana**

Bulk Material Handling





**I**ndiana has been a leading player in the field of Bulk Material Handling Equipments in India and Abroad with nearly four decades of experience.

We at Indiana have been quite active in catering to the needs of various industries in the field of Bulk Material Handling Equipments. The skills and capabilities at Indiana are the result of hard and intelligent work of Indiana Engineers and the real-life learning acquired while working for several prestigious clients in projects for industries such as steel, cement, coal, chemicals and fertilizers.

The Overall reliability and performance of our equipments/ systems are guaranteed by the fact that our products are manufactured in-house or sourced from highly reliable vendors with whom we have developed close-working relationships. Indiana enjoys an excellent reputation for its products and its focus is on customer delight.





### DESIGN & ENGINEERING

Highly experienced team of innovative design engineers are equipped with the latest hardware and software programmes, many of which are specially developed for the company.

### MANUFACTURING

With its modern and spacious manufacturing facility at Jejuri near Pune, Indiana has taken a big leap forward in meeting the requirements of Bulk Material Handling Field. It is equipped with latest metal forming, cutting and welding processes backed by specialized machinery constitute the manufacturing base & heavy fabrication facility of the Indiana group.

### EXPERIENCE WITH CONSULTANTS

Indiana has successfully executed projects through most of the renowned engineering consultants such as Dasturco, EIL, Kvaerner Powergas, Jacobs H&G, TOYO, UHDE, PDIL, TCE, Holtec, Lurgi, MECON, TICB, DCPL, Krebs, HDO and many others.

### MANUFACTURING PROGRAMME

Indiana designs, manufactures and supplies various Material Handling Equipments /systems including, but not limited to, as given below:

- Belt conveyors/ Feeders
- Screw conveyors / Feeders
- Bucket Elevators / Super capacity Elevators
- Slat conveyors
- Chain conveyors
- Roller conveyors
- Rotary feeders & Airlock valves
- Bin activators
- Jaw crushers
- Hammer Crushers
- Impact Crusher
- Vibrating screens
- Reciprocating feeders
- All types of gates

### QUALITY MANAGEMENT

One of Indiana's pillars of foundation is Quality. Indiana Quality Management practices keeps engineers abreast with new technology in manufacturing and quality control. Raw materials and all bought out items of proven performance are procured from the most reputed and reliable suppliers.

### SOUND FINANCIAL BASE

A sound financial base enables Indiana to hold adequate stocks of steel and other vital components.

### AFTER-SALES SERVICE

An efficient after-sales service for spares and maintenance is responsible for Indiana to receive repeat orders from its customers.



## Steel Plants

Indiana has designed, fabricated and installed Bulk Material handling systems for several steel, sponge iron, alloy steel and ferro-alloys plants.

Belt conveyors, Elevators, and a large number of other equipments such as Rotary Feeders, Bin Activators, Crushers and Screens have been incorporated for Raw material preparation / storage, Product handling, storage, batching & weighing, conveying and elevating, distribution & extraction and equipment for handling finished products.

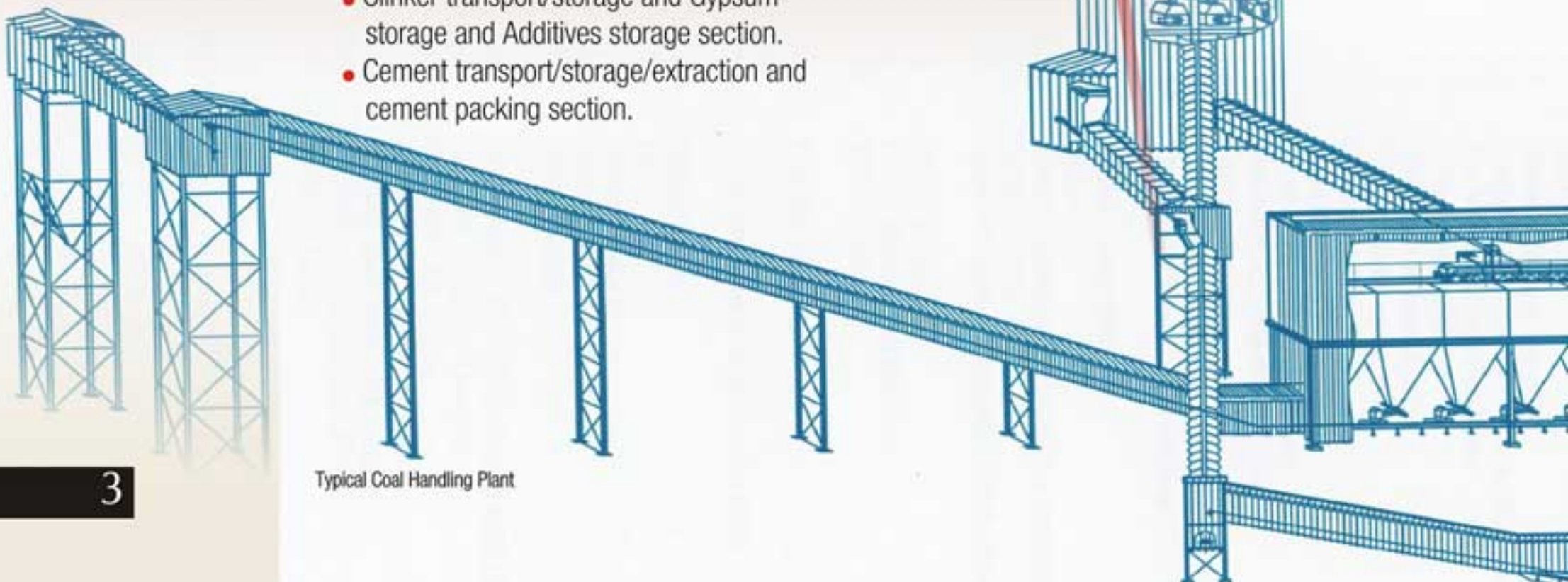
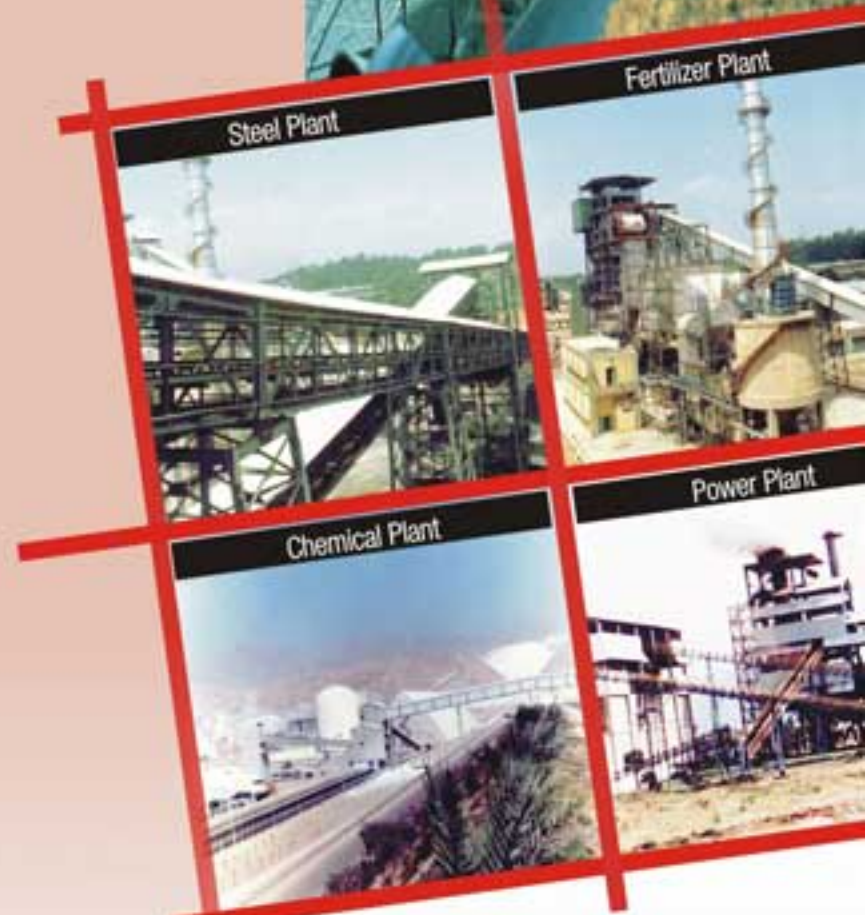


## Cement Plants

Indiana has earned excellent credentials in designing, manufacturing, supplying and installing material handling systems for many a cement plants. Whether it is modernization, expansion or a new project, Indiana understands the requirements as it has a rich experience in supplying the required equipments like Belt Conveyors, Screw Conveyors, Bucket Elevators, Deep Bucket Conveyors, Crushers, Screens, Reciprocating Feeders, Rotary Feeders, Belt Feeders, Apron Feeders and other equipments/accessories.

Indiana designs, manufactures and supplies equipments for every important section such as

- Lime stone / additives crushing section.
- Raw material onveying /storage/ extraction and feeding section.
- Raw material grinding, transportation and kiln feed section.
- Coal crushing/grinding/feeding section.
- Clinker transport/storage and Gypsum storage and Additives storage section.
- Cement transport/storage/extraction and cement packing section.



Typical Coal Handling Plant



## Coal and Ash Plants

Coal passes through many different forms till it turns into cold ash. With its versatile experience, Indiana has designed, supplied and installed systems to handle coal in all forms for several boiler installations.

Indiana designs all equipment to exactly meet the operating conditions and physical requirements of important sections such as Raw coal conveying section. Coal crushing section Crushed coal conveying & storage section. Ash conveying & storage section

## Fertilizer Plants

Indiana has achieved great expertise and credentials in designing, manufacturing, supplying and installing material handling systems for almost all fertilizer plants. Indiana is well versed with the requirements of all fertilizer handling equipments involving supply of the required equipments like Belt Conveyors, Bucket Elevators, Super capacity Elevators, Rotary Feeders, Belt Feeders, Apron Feeders, Chain conveyors, Fines conveyors and other equipments. Indiana designs, manufactures and supplies equipments for every important section such as:

- Raw material and Offsites handling section.
- Product handling, conveying/elevating, storage and feeding section.





## Belt Conveyors

Every Indiana Conveyor is custom designed and engineered for total reliability even under the most demanding service conditions. Indiana has in the last three decades; designed, manufactured, supplied, installed and commissioned majority of belt conveyors for various applications. Such a vast experience has put Indiana in a very favorable position to make most appropriate techno-economic selection of a belt conveyor for any industry such as steel, cement, coal, fertilizers, chemicals, food grains, engineering and port trusts.

Standard belt widths offered ranging from 400 mm upto 2000 mm as per IS 11592 1983 as well as CEMA standards. However, belts with intermediate widths are also supplied depending upon customer requirements.

Various types of supporting structures are offered starting from a simple stringer with short supports to the more complex conveyor gantries /galleries with walkways on one side /both sides and sheet cladding. All structures are designed for high strength to weight ratio and also for minimum deflection and vibrations.

Standard drive unit and electrical safety switches of superior quality with proven performance provided. Integral hold back in a gearbox and/or brakes is provided in inclined conveyors as applicable.

**Auxiliary equipments** Standard trippers & shuttle conveyors requires utmost attention as these increase the usefulness of a conveyor system. These are designed and manufactured for discharge or distribution of materials from the belt at one or more points or over length.

## Screw Conveyors

Indiana manufactures screw conveyors based on CEMA / IS 5563 / other relevant standards. Indiana has manufactured screw conveyors for virtually all applications, materials and capacities, including those where others have written off screw conveyors as being unsuitable. Equipped with custom-built machinery, Indiana offers delivery

Schedules that not other manufacturer can match and at economical rates which are realistic. All this is possible because of in-house standardization at various stages. The quality of Indiana Screw Conveyors is acknowledged as the best in the field with complete reliance on its performance. Screw flights are formed and available in various configurations and thicknesses to match the applications. Hanger bearing assemblies are available in different designs to cover all applications right from intermittent light duty to continuous heavy duty. Indiana makes horizontal /inclined as well as vertical screw conveyors. Standard screw diameters are offered ranging from 100 mm Upto 1250 mm. Even other diameters as per customer's requirement are also offered.





## Bucket Elevators

Indiana engineers have, over the last three decades, accumulated experience in elevating a variety of bulk solids and in the process solved many complex problems faced by customers. Indiana bucket elevators are made to a standard high quality design based on IS / DIN Standards. Indiana's specialty are Super capacities chain type Bucket elevators for Fertilizer plants that have gained customer delight. Casings are fabricated from steel sheets & liberally stiffened to give added load carrying capacity and true alignment. Buckets are made in various shapes and sizes with edge reinforcements wherever necessary. Chains are normally used for elevators with heavier duties, high capacities and lifts. Belts are recommended for handling free flowing materials as also for corrosive materials while pin and bush type chain is normally used. Link chain & U-bolt combination is provided on heavy-duty elevators depending on the applications.



Following types of elevators are included in Indiana's manufacturing programme to cover most of the applications:

1. Centrifugal discharge belt / chain (Pin and Bush or Link chain) type.
2. Continuous discharge belt / chain (Pin and Bush chain) type.
3. Positive discharge chain type.





## Roller Conveyors

Gravity and Power-driven roller conveyors are manufactured and supplied for industrial use. These are also used in packing plants. The end bearings of rollers depend on the load and duty conditions as well as customer preference include standard ball bearings in machined housing, nylon bushes, non precision (uncaged) ball races, etc. The steel section frames have sufficient strength to ensure that deflection under load does not adversely affect the distribution of the load over the rollers. In power-driven roller conveyors, individual rollers are driven with duplex roller chain and sprockets Powered through geared motor drive unit for conveying. Special ball transfer units or 90 degree bends are offered to make conveying materials in various profiles as required in packing plants.

## Slat Conveyors

Slat conveyors are used for packing plants mostly handling bags fertilizers, cement, and other similar materials. Generally, the slats are of wooden or metal mounted on double strand roller type pin and bush chain is supplied moving on guides.



## Portable Conveyors

Indiana manufactures portable conveyors of belt as well as chain slat type. Portable belt conveyors can be made either with flat idlers or troughing idlers depending upon the load. The conveyor boom is usually fabricated from steel angles/pipes in order to give a light but strong and sturdy structure. Height adjustment facility is provided with manual / electric winch or mechanical/hydraulic pull jack. The complete conveyor structure is mounted on two wheels with a swiveling castor wheel and tow bar arrangement at the back. An inclined portable conveyor, with a near-horizontal profile at the discharge end is commonly used for lorry loading and unloading applications.

Apron Conveyor



Rollers for Roller Conveyor





## Apron Conveyors

They are recommended for handling materials containing large, heavy or sharp lumps, hot materials, and for installations where material falls from a height causing an impact. Standard apron widths are from 160 mm upto 1250 mm mounted on Double strand heavy duty pin & bush chains with outboard rollers running on rails / tracks.

## Rotary Feeder

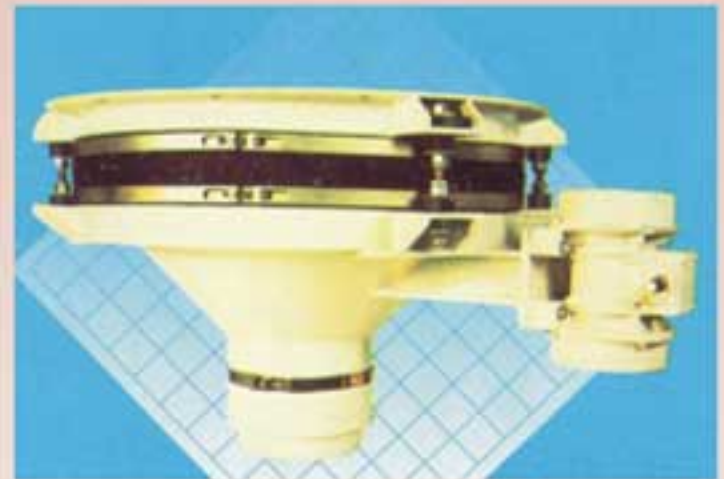
The Indiana Rotary Feeder is designed to transfer dry granular solids and powders between parts of a system at equal pressure, or with minimum air loss under differential pressure conditions.

Since no single type can perform all duties, Indiana has developed three basic types: Drop through type, Blow through type and Offset type. These are available in Cast Iron, S.S., Alloy Steel and M.S. fabricated versions. Standard flange sizes ranging from 150 mm to 350 mm diameters in casting version and higher sizes like 400 mm to 710 mm are offered in fabricated version as per standards.

## Bin Activator

Indiana's Bin Activator is designed to avoid unscheduled flow interruptions from a silo by breakdown of shear strength thus inducing a smooth flow. The standard range is available from 400 mm dia to 3000 mm diameters in either mild steel or stainless steel construction.

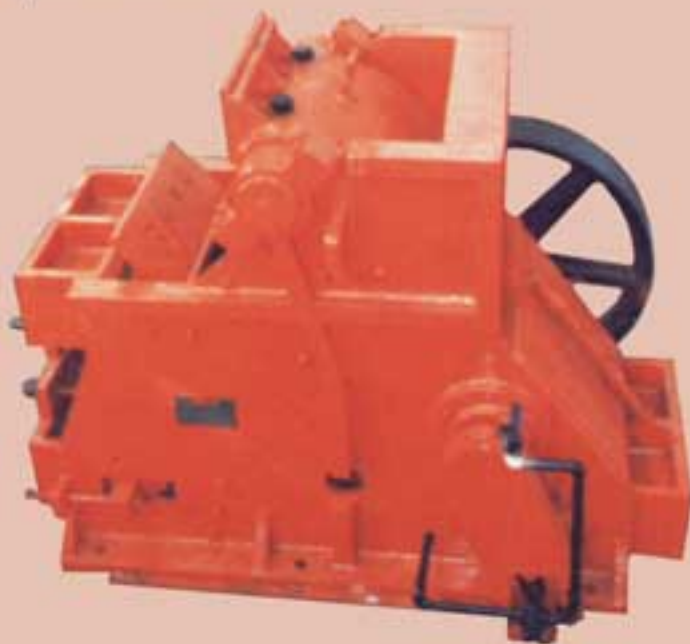
Vibrator motor breaks the vertical bridge of material between the baffle cone and the dish to feed the material into the discharge cone. The vibrations can be increased or decreased to get a controlled rate of discharge.





## Jaw Crusher

Indiana Jaw Crusher is designed for primary/secondary crushing of hard rock with minimum rubbing action. This is achieved by incorporation of an ingenious linkage system which ensures sure that the jaw plates move squarely against the rock. The standard range includes crushers 400mm x 175 mm upto 1050 mm x 750 mm.



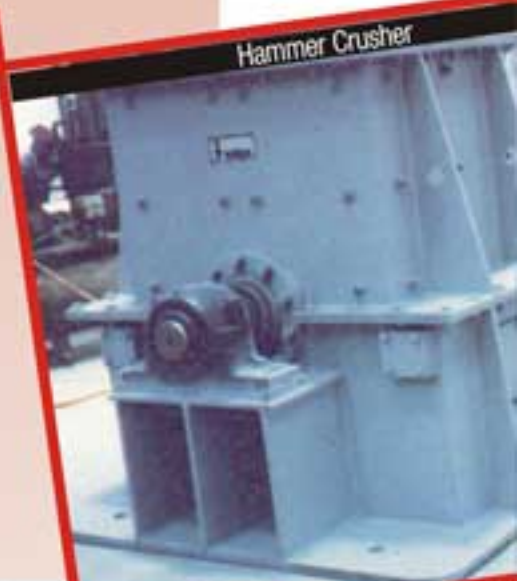
## Hammer Crusher

Indiana Hammer Crusher/mill achieves breakage by precision from swing hammers linked to high-speed rotor that strike the material fed into the crushing chamber. It is used as a primary machine when fitted with heavy duty, double or triple head hammers, and as secondary or tertiary machine with lighter single or double head hammers. Offered in various sizes upto 1200 mm dia x 1400 mm widths.



## Roller Crusher

Indiana Roller Crusher is ideally suited for secondary or tertiary crushing with controlled sizing. It is a very versatile machine due to its capacity to produce more with lower power consumption. The maintenance of this machine is far more easy compared to other machines. These machines are produced in different varieties depending upon the requirements of the users.





## Vibrating Screen

Indiana Vibrating Screen is designed with a high ratio of capacity to screen area. All the important factors for the design of vibrating screen namely, eccentric throw, speed, inclination, and directions of rotation are considered for achieving the best results. Large roller bearings with dust and watertight seals are used. The screen body is suspended on springs to eliminate vibrations to the supporting structure. Single, double and triple deck versions are available.

## Chain Conveyors

Chain conveyors are used to handle granular and medium lumpy materials such as ores, coal, carbide and similar materials. The most common design is that of a Double Strand Link or Pin & Bush type chain with scrapper plates mounted in between. Special purpose chain conveyors are also manufactured to suit individual requirements. Special fabricated / forged chain and attachments are used on bulk flow conveyors (Redler type), while link chain are used on conveyors for coal mines and other applications.

## Deep Bucket Conveyor

These are recommended for heavy-duty applications generally involving hot materials like Clinker, Carbide, and other similar materials. Deep bucket conveyors are fitted with specially designed chains working in two parallel strands, suitably interconnected and fitted with outboard rollers running on steel tracks.





## Idlers

Engineering skills acquired over the past three decades have been incorporated in design, engineering, and manufacturing of idler rollers.

Idlers greatly influence belt tensions, power requirements, belt life, capacity and operational success of a conveyor. Indiana idlers are offered in various configurations to suit different duty conditions:

- Troughing Carrying idlers.
- Troughing self aligning idlers.
- Troughing Impact idlers.
- Flat Conveying idlers.
- Return idlers.
- Return Self Aligning idlers.
- Return Rubber Tread idlers.

## Rollers

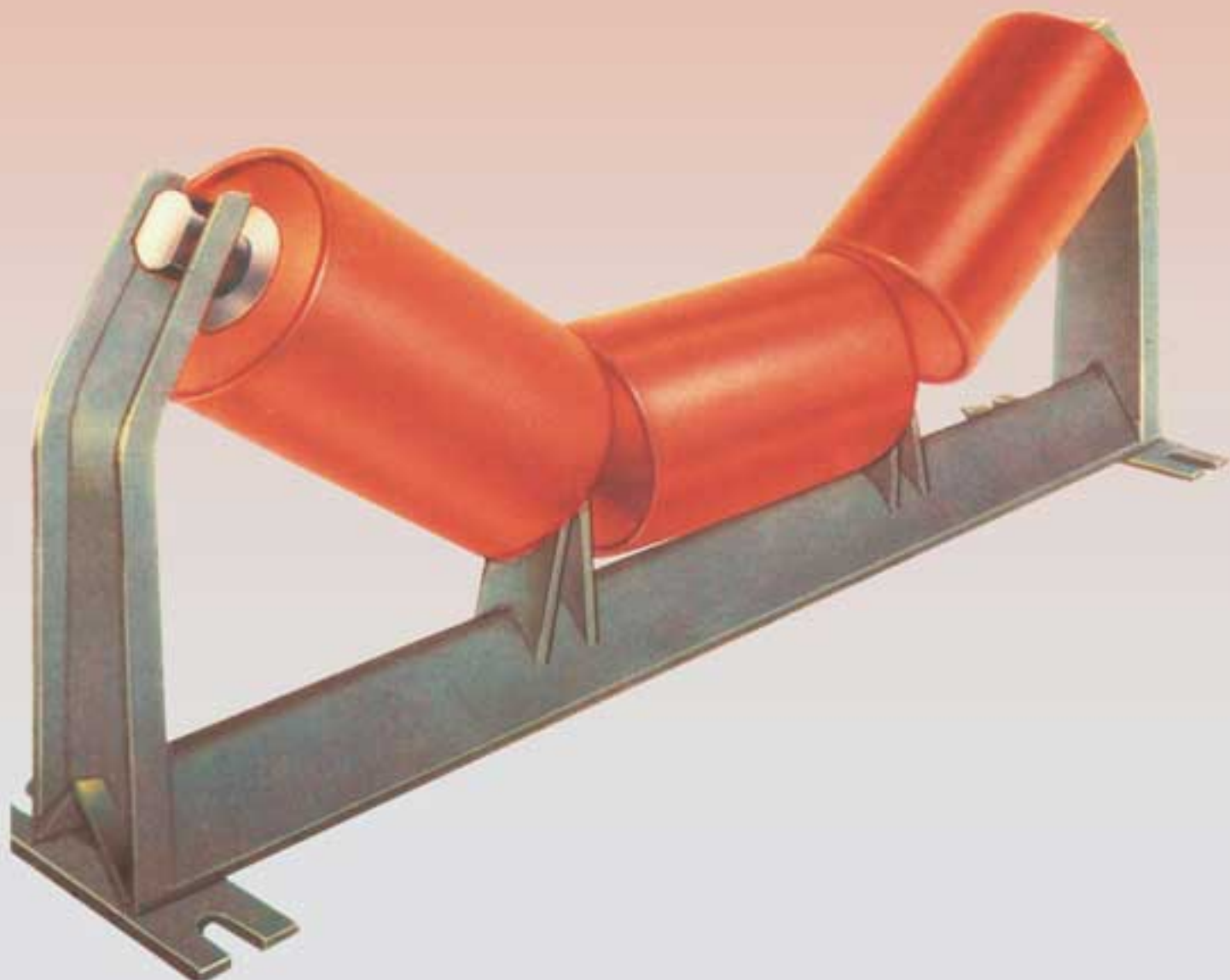
The shell is made from MS ERW black steel tube as per IS: 9295. Pressed steel housing are made from CRCA sheet with calibrated bearing seat. Automatic MG welding simultaneously welds these onto the tube. The shaft is precision machined from bright steel bar and a standard sealing system consists of a back seal, multi lip non contact double labyrinth, molded dust cover and a rain cap.

## Idler Frame

Idler frames are one piece fabricated steel construction with inverted angle and end supports with clearances as per IS/Relevant standards. The frame is jig welded for dimensional accuracy and interchangeability. The rigidity and accuracy of the frame ensures correct roller alignment and helps keep the belt properly trained. The inverted base angle gives a self-cleaning design-eliminating roll and belt damage due to material build-up.

## Garland Idlers

In keeping with latest international trends, Indiana also manufactures Garland Idlers and can offer these for replacement / new installations of larger conveyor widths and higher capacities & speeds.





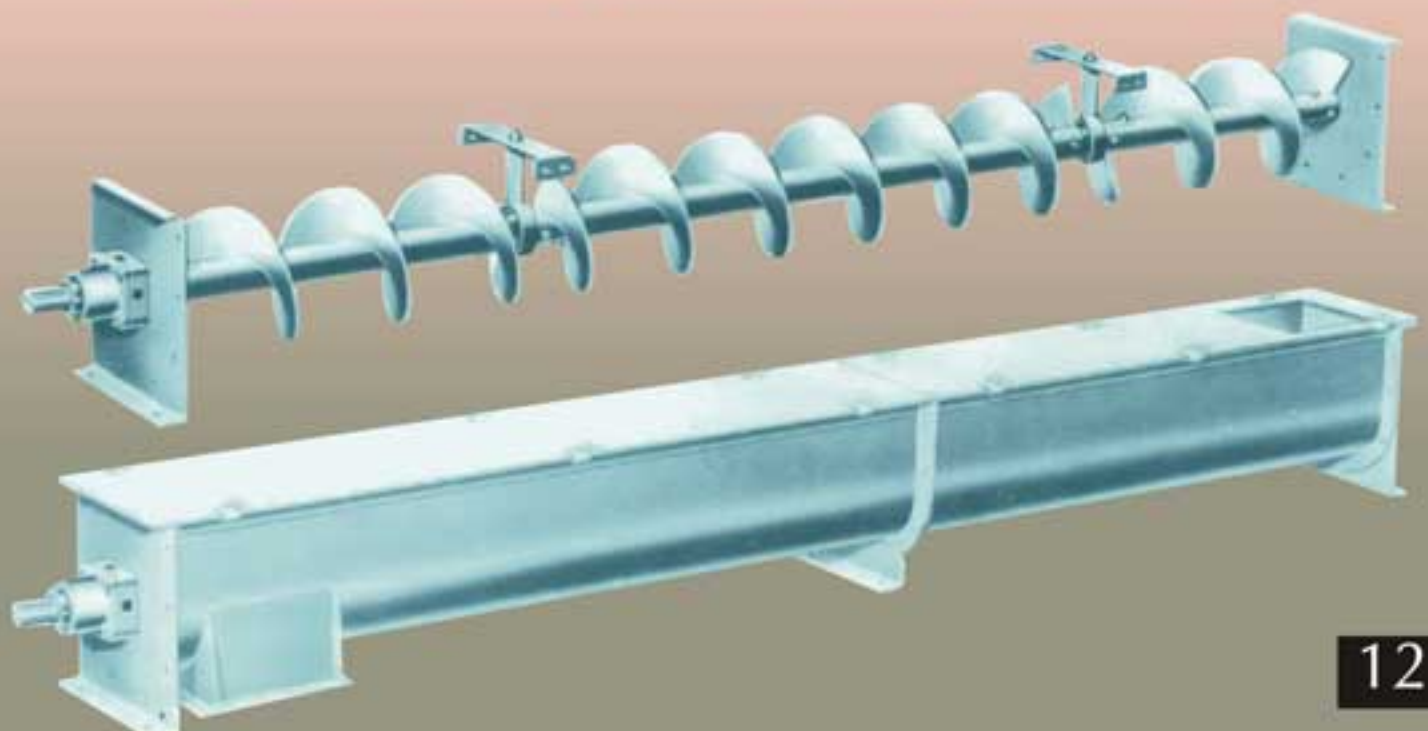
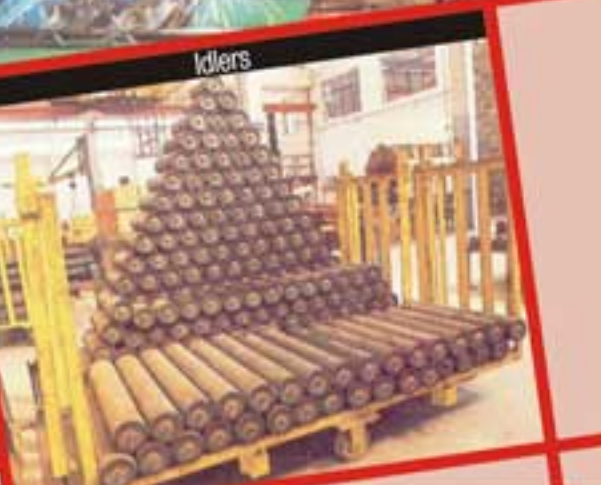
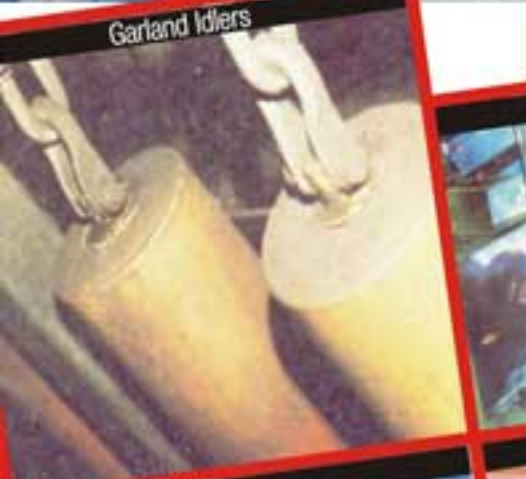
## Screw Flights

Indiana manufactures screw conveyor flights with pipes of various types and sizes as per customers requirements. Standard screw diameters are offered from 100mm upto 1250 mm. Standard flights as per relevant standards - Helical continuous, Ribbon flight, cut and folded flights, and paddle flights are offered.

## Pulleys

Indiana pulleys are of heavy-duty construction and suitable for continuous operation. Pulley assembly dimensions and tolerances are based on IS: 8531. Pulley shells are Either made from standard heavy tubes or fabricated from steel plates and depending upon the face width, two or three diaphragms are provided. Pulley shafts are of carbon steel and fully machined to precise tolerances. Assembly of pulley and shaft is usually accomplished through a bore and keyway, however, taper lock bushings are also offered. Heavy-duty split-type plummer blocks, equipped with self-aligning double row ball/roller bearings with adequate dust sealing arrangements are used.

Straight or crowned faces are available in all combinations of diameters and face widths. They may be furnished with rubber lagging usually grooved to resist slippage. Static balancing of pulleys ensures increased bearing life and reduced power consumption.





## Experience with Consultants

Indiana has successfully executed projects through many of the renowned engineering consultants such as

- M.N.DASTUR & COMPANY
- KVAERNER POWERGAS
- JACOB'S H & G
- EIL
- TOYO
- UHDE
- PDIL
- TCE
- HOLTEC
- LURGI
- MECON
- TICB
- DCPL
- KREBS
- HDO

### International consultants

JACOB'S INTERNATIONAL  
SEREGNT & LUNDY INC. USA  
and  
BECHTEL INTERNATIONAL INC.





## Major Clients and Industries Served by Indiana

### STEEL PLANT

Bhutan Ferro Alloys Ltd., Bhutan Consultants:  
M.N.Dastur & Co., Kolkata

Steel Authority of India Ltd. (Durgapur)

Indo Gulf Fertilizer & Chemicals Corporation Ltd.  
(Birla Copper), Consultant: Mecon, Bangalore.

Indomag Steel Technology Pvt. Ltd., A/c. R.S.P  
Consultants: Mecon/M.N.Dastur

Neelanchal Ispat Steel Nigam Ltd, Orissa.



### POWER PLANT

Kanoria Chemicals & Industries Ltd.,  
Renukoot, U.P. Consultant:  
Desein Pvt. Ltd., New Delhi.

Rama Newsprint & Papers Ltd., Surat  
Consultants: Development Consultants Ltd  
Kolkata.

Maharashtra State Electricity Board,  
Chanderpur, Maharashtra.

Gujarat Electricity Board, Baroda  
(for Wanakbori Thermal Power Station)  
Through Mecon, Ranchi.



### FERTILIZERS PLANT

Indian Farmers Fertilizers Co-op. Ltd. Kandla  
(Kachchh), Through Hindustan Dorr-Oliver Ltd.,  
Mumbai & PDIL Consultants, Baroda.

Godhvari Fertiliser & Chemical Ltd., Hyderabad  
Thro' Uhde India Ltd, Mumbai.

Oswal Chemicals And Fertilizers Ltd.  
Through Jacobs H&g Ltd., Mumbai.

Coromandel Fertilisers Ltd. (Visakhapatnam)  
Through Uhde India, Mumbai.

Rashtriya Chemicals & Fertilizers Ltd., Mumbai.

Bindal Agro Chem. Ltd., New Delhi. Consultants:  
Projects & Development India Limited, Baroda.



### CHEMICAL PLANT

Arab Potash Company Ltd., Jordan  
Consultants: Jacobs International, Ireland.

Kuwait Organics Fertilizers Co. Kuwait  
(export)

Punjab Alkalies & Chemicals Ltd., Punjab.  
Consultants: Uhde India Limited, Mumbai.



### CEMENT PLANT

Maihar Cements, Satna, M.p

Century Cements, Baikunth, M.p.

Vinay Cements Ltd., Shillong, Assam.



### GLASS PLANT

Videocon Narmada Glass, Bharuch, Gujarat.

Samcor Glass Co Ltd, Kota., Rajasthan.

Asahi Float Glass India Ltd, U.P.



### PETROLEUM PLANT

Reliance Petroleum Limited, Jamnagar

Numaligarh Refinery Ltd. (Assam) Through  
Engineers India Limited, New Delhi.

Rain Calcining Limited (Hyderabad) Consultant:  
Sergent & Lundy U.S.A.

Indian Petrochemicals Ltd., Baroda, Gujarat.  
Consultants: Uhde India Ltd., Mumbai.



### MINING

Essel Mining & Industries Ltd. Kolkata.







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