

# You Define, We Design!

Resolving Material Conveying Needs



Grasp. Think. Solve

## RESOLVING MATERIAL CONVEYING NEEDS

Statfield Equipments is one of the building blocks of the Yashprabha Group of companies, leader in the field of protection and control relays, annunciation systems, powder & liquid painting applications, complete paint shops, automatic storage systems and material handling solutions.

At Statfield's material handling division, we believe in "Grasp. Think. Solve." approach. Every enquiry is first analyzed by our engineers to understand customer's need. Designs are evolved after understanding existing and projected material handling criteria & with advanced manufacturing set up; ideas are transformed into reality with perfection.

We conduct in-house trials, before delivery under simulated conditions. Though experience suggests that our product seldom needs service and spares, we have a team of service engineers and a wide dealer network for support should such need arise.



## KEY FEATURE OF MATERIAL HANDLING SOLUTIONS

With the experience of over 5 decades and technological expertise SEPL proudly outstands with the features of products in material handling segment.

### Closed Track



Conveyor tracks are enclosed type and are formed sections. Chain gets appropriate guide with this arrangement ensuring a chain to remain dustproof.

Tracks are of greater strength and hence require overhead/ground supporting only at the distances of 3 mtrs.

### K Series Conveyor



K series conveyor is one-of-its-kind and the only overhead conveyor that is lubrication free. Wheels are of glass filled nylon and self lubricating bearings that ensure no metal-to-metal contact while movement of conveyor within the track and chain. This is designed to function in ambient temperature and very popular in the field of material handling in various industries.

### Power and Free conveyor



271- Power & Free conveyor consists of twin tracks arranged one above another. Upper track carries a continuously moving chain; while the lower track consists of free moving push-pawl trolleys for engaging and disengaging.

#### Features

- Queuing
- Article rail-routing with Spur Lines
- Rout Selection
- Stop and flow arrangements

### Caterpillar Type Positive Transmission Drive Unit



We promote positive transmission type caterpillar drive that functions over a considerably lesser power and hence remains lesser on the maintenance side. Incorporation of over tension limit switches (OTLS) in the drive unit enables motor protection under chain lock condition.

### Automatic Lubrication Unit



For S series where conveyor is to function at 220 degrees, lubrication is mandatory, we offer an automatic drop type controlled lubrication unit that ensures chain getting lubricated only at the points it is supposed to be. It can be programmed for periodic lubrication.

### WD410 - Mini Radius Conveyor

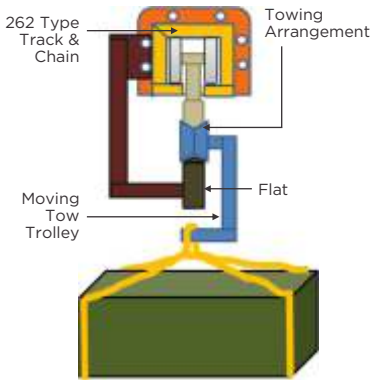
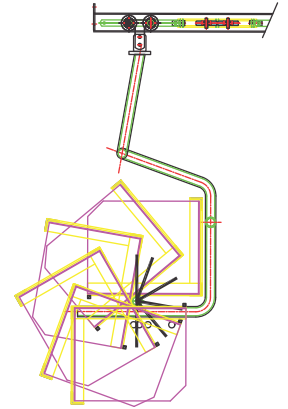


WD410 is a known conveyor that is driven by a sprocket drive and has pitch of 100 mm. With 10 articles hung in one meter this conveyor can make 180 degree turn in 600 mm.

**Accessories and automation associated with conveyORIZED material handling**

Automatic Jig Tilting for Material unloading - We have kilometers of overhead conveyor provided in a Tea Estates where tea leaves are required to be unloaded automatically. We are proud to state hereby that we evolved completely maintenance free system for jigs tilting which made tea estates today to function with 20% less manpower.

Automatic Crate unloading for Fruit Processing units - In fruit processing plants where standard crates are loaded on the conveyor manually, unloading was required to be done at the processing plant automatically. We have successfully equipped our conveyor jig 'A 180 degree tilt' with simple mechanical arrangement.



**Overhead Chain-Flat Arrangement for Towing Greater Load**

For loads ranging from 500 kg to 1 ton, undergoing processing of different sorts, 262-Flat Type overhead conveyor and its point load capacity of 1 ton is the right solution.

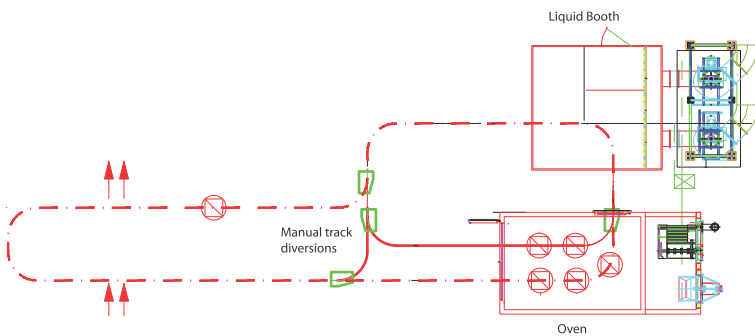
262-type conveyor which conventionally functions as a standard overhead chain conveyor with point loads up to 250 kg, is modified to suit the application where load up to 1 ton is to be carried. Flat - with its 125 mm thickness - can carry load up to 1 ton per point, and this load is hung over trolleys which are towed by overhead 262 type chain conveyor and looped horizontally as per the requirement.

This enhances the capacity of system and enables a material handling for greater load with better solution.

**Free Track Trolley - For Manual Material Movement**

When production is not more but articles are heavy, manual track and trolley type system is convenient. With combination of multiple pneumatic switch junctions a complex material handling can be eased with expert design.

Manual Spur conveyor track can function precisely in oven for multiple routing making maximum use of oven.



**Drop Sections, Turn Tables, Rout Selection and Powered Indexing**

**Drop Section:** A 271 type P&F conveyor can be equipped with Drop sections for vertical up-down movement of article hung at defined locations for defined timings and processes.

**Turn Table:** It can make the article movement in 90 degrees straight away. This can be done manually in case of free movement and even automatically in case of P&F conveyor.

**Rout Selection:** Articles hung online on a 271 type conveyor can be routed with number of track diversions for storage as well as processes and vice versa.

**Powered Indexing:** When articles hung are required to be rotated vertically at greater RPM for processing, a powered indexing is offered. Motorized indexing rack engages with the indexers and the movement opposite to the conveyor direction yields greater number of RPM in very small span.

## APPLICATIONS

### Painting Application for Long Section

We offer power and free conveyor when jobs of greater in length like aluminum sections are required to be powder coated with no luxury of space. With 271 type power and free conveyor sections can be hung one below the other and can be queued and baked at a same time without stopping the running conveyor. Same is used at unloading and loading making complete plant fit in a considerably lesser space.



### Automotive Lightening Industry

With automotive lightening manufacturers, biggest manufacturing process challenge is to maintain the inventory between two processes. For example, molding is done 10 times faster than its next process i.e. metalizing. So molding machine produces molds and are conventionally stored in trolleys until the clearance of next process. This method adds to the manpower requirement and priceless space gets wasted in trolleys.

With overhead conveyor installed, trolleys are eliminated from the shop floor and walk-ways are free..!



### Seating System Manufacturers

Material handling and storage of large foams is the biggest challenge seating system manufacturers face today. Foams are less in weight and greater in size and after molding unit they are required to be isolated for desolidification. Overhead conveyor plays a vital role in storage and desolidification of foams. Loops of hundreds of meters can be installed over the assembly for this process and conveyor can be taken down at desired location.



### Cycle Manufacturers

Paint shops are not new to cycle manufactures. Issues come along with paint shop are the material movement of frames and forks to the multi level shop floor & storage of painted material till the despatch schedule. Old set-ups would have lift/elevator and manual trolleys for material handling. SEPL's overhead conveyor with its bi-planner property makes it easy to move the material on the shop floor.



### Food Processing Companies

General food/fruit processing companies have set-ups spread over acres of land. Fruits unloaded from the trucks are inspected, filled in the standard crates and are taken over to processing plant meters away from the collection area. Ripening chambers - multiple in numbers - are attended on a way for processing the fruits. ▶

For all this, conventionally tractors and trolleys were used until SEPL introduced a lubrication free material handling conveyor with automatic crate loading, unloading system.



### Cylinder Manufacturers

◀ Cylinders are manufactured in very dusty environment as major process requires forging, tooling etc. The set-up also consists an overhead conveyor with coating plant. Apart from coating conveyor, it is found with cylinder manufacturers that cylinders are required to be cured after coating, and also stored till the despatch schedule.

With SEPL's overhead conveyor, cylinders are not only cured but conveyor is designed in such a way that even inventory is managed with material handling.

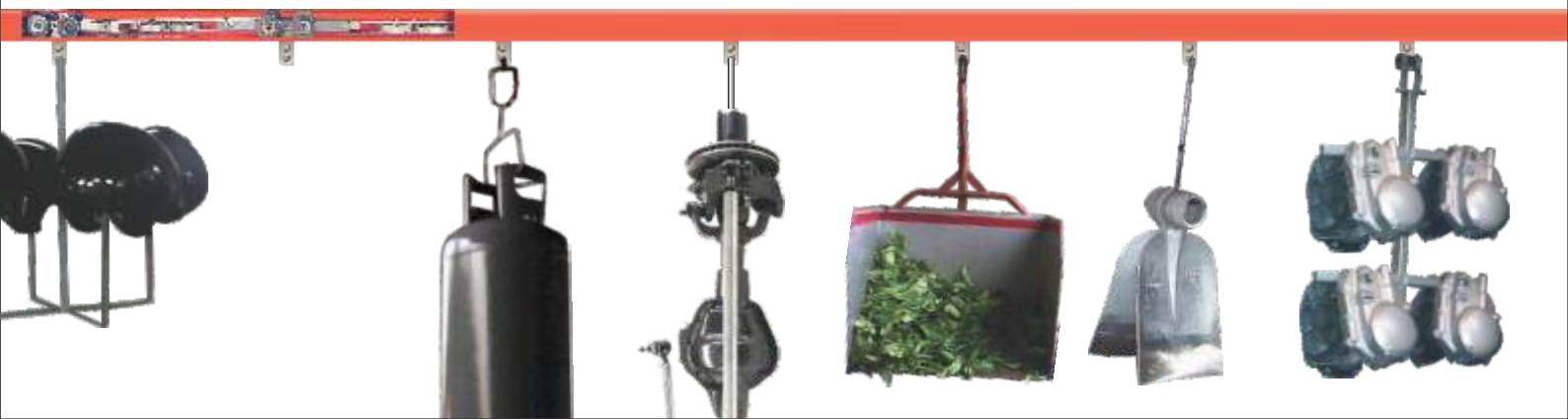
### Foundries

Red-hot Castings manufactured out of foundries are often dumped on the ground for cooling off until the further process of fine chipping. With SEPL's Overhead conveyor for foundries, castings are now cooled off by conveying articles at the top. Red-hot castings are loaded on to a specially designed jig and conveyor is designed to loop overhead until the same are cooled. ▶



### Automotive Ancillaries Manufacturers

◀ One of the major applications of overhead conveyor is Powder/Liquid coating in automotive ancillaries. With these, articles of almost every size can be hung to the conveyor and based on the sizes, conveyor can be selected out of 65 different types of chains dedicated for such applications based on article pitch and point load.



# TURN KEY MATERIAL CONVEYING PROJECT

## Close Loop Material Handling with Ground Conveyor for Heavy Weight Articles

With loads of over 1 tone material handling faces great challenges.

With a requirement of safes having weight of one ton each and 150 nos are required to be moved all over their shop floor from assembly to finish coating. The total travel is in the range of 500 mtrs. is becomes a challenge when such article requires a movement in 90 degrees without changing the orientation, which no standard conveyor can provide.

With a combination of various conveyors a smooth movement of 150 trolleys weighing 1.2 tons each is achieved.

**"Shuttle"**, It is designed in such a way that trolleys towed from one tow conveyor, is transferred to another tow conveyor at different location .It has two drives. One is for perpendicular travel to tow conveyor and other for parallel to tow conveyor. Total 5 Shuttles are provided.

**"Trolley"** Each trolley has queuing arrangement in any direction of travel. Each trolley is provided with specially designed auto lock for Safe door to keep it in open position during transport on trolley. Total 200 trolleys are provided.

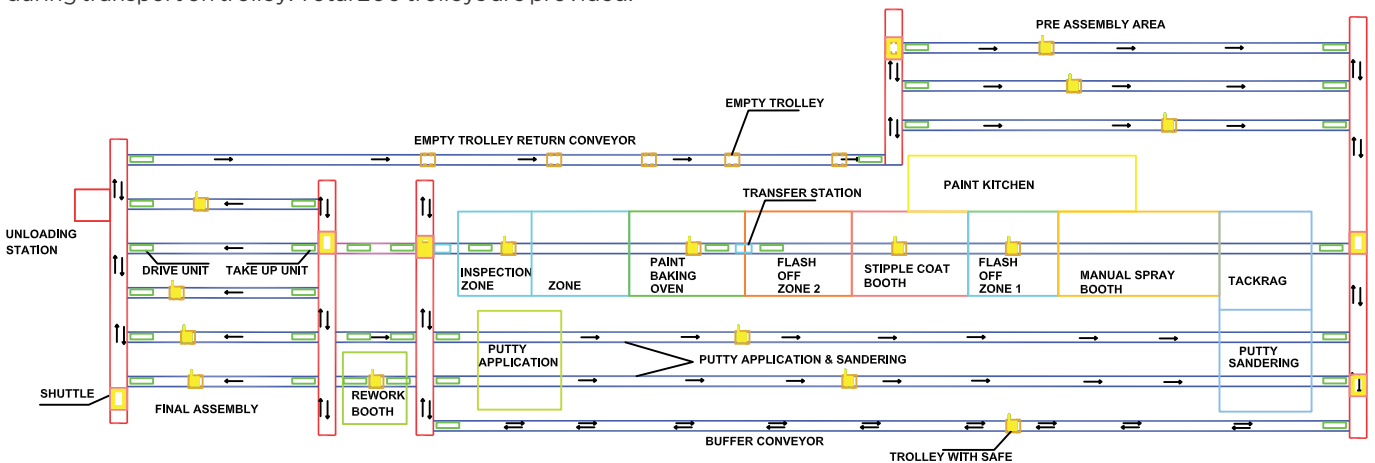
**"Tow conveyor"** The trolleys are moved by tow conveyor. Total 17 tow conveyors are provided. Total length of tow conveyors is more than 500 meters. All conveyors are provided with auto lubrication system.

**"Transfer Stations"** In paint line there is a change in tow conveyor speed at two points. To achieve this, 2 transfer stations are provided.

**"Control Panel and control stations"** PLC based control panel with SCADA system is provided. Additionally 5 control stations are provided, one in each section, for changing sequence as per requirement of each section and for manual override.

The total material handling system is a close loop system. After travelling through various stages the empty trolley returns to original position of Pre Assembly section

The entire material handling system is PLC controlled and has number of safety devices to avoid accident in case of mal functioning of any control system.



## RANGE OF GROUND CONVEYORS

With turnkey material handling solutions requirements of ground conveyors like roller type conveyor, slat type conveyor etc are always there. Requirements of these sorts can also be furnished with our standard line ground conveyors. Article load & envelops, speed of material movement are the major factors considered while designing these conveyors.



# TURN KEY MATERIAL CONVEYING PROJECT

## Synchronised Conveyor Combination for Long Members

One of our customer needed a unique material handling System for long members of 8000 mm in length and weighing about 200 Kg/each.

We have evolved a system which remained an alternative to Robotic material handling.

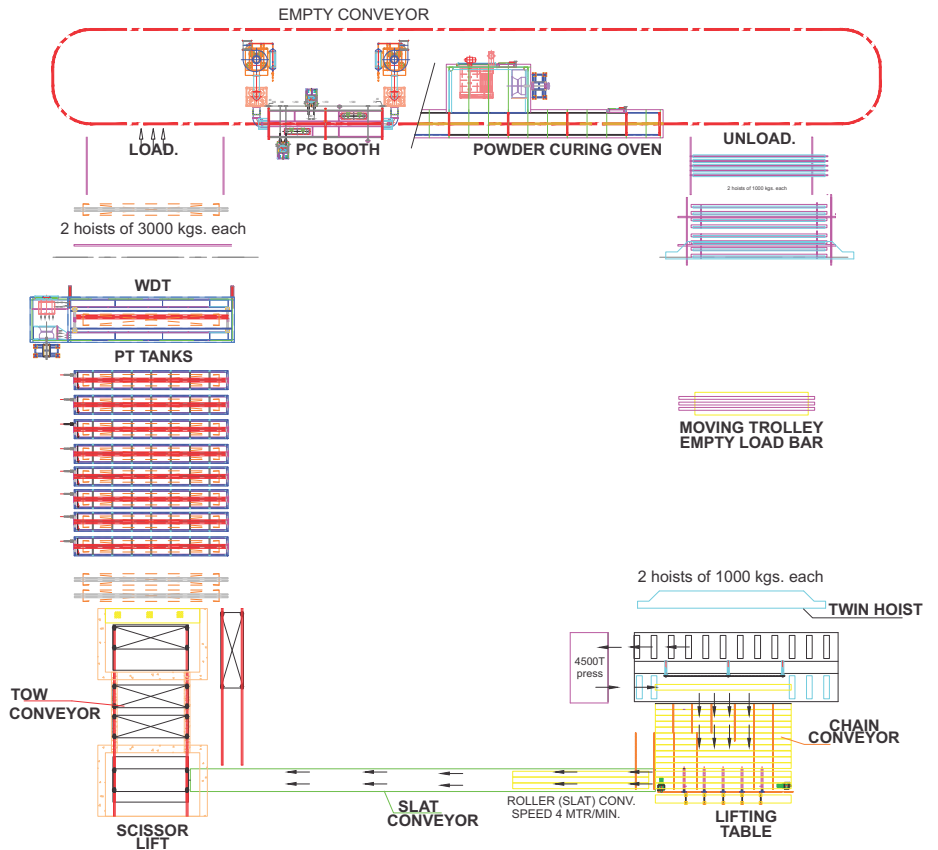
The total system involves right from out feed of blanking press to storage after final painting.

The total system comprises of following stages.

From blanking press - Back to forming press-Carry them for storage-Load on jig for PT-Load on overhead conveyor for powder coating-Unload for storage after finish painting.

The system includes, pusher arrangement, chain conveyors, twin hoists for lifting, auto transfer and lifting tables, slat conveyors, scissor lift, storage trolleys, auto transfer from slat conveyor to storage trolleys, tow conveyor for trolley movement, trolley queuing arrangement and arrangement for bringing back trolleys and jigs to home position.

All the operations are synchronised by PLC control to minimise manual control.



## INVERTED VERSION OF OVERHEAD CONVEYORS

Material movement in the manufacturing or a process industry can also be required to be on ground.

Any ground conveyor in today's time, be it a roller conveyor, slat conveyor or even a chain conveyor; needs independent driving arrangement at every turn. If not a driving motor, it needs an idler sprocket or a guiding arrangement.

Conventional ground conveyor can be converted in to an inverted range of overhead conveyor with following advantages,

- A single caterpillar drive
- Flexibility with turning radius
- No requirement of driven or idler arrangements for guiding the horizontal turns
- Cost effective solution



## CONVEYOR SELECTION CHART

No.	Conveyor Name	Conveyor Type	Turning Radius mm	Point Load Kg	Chain Pitch mm	Bi-planner	Lubrication Type	Drive Type
1	261 (S-Series)	OH Conveyor	600, 800, 1000	50, 80, 125	300, 400,500	Yes	Auto Type	Caterpillar
2	261 (K-Series)	OH Conveyor	600, 800, 1000	50, 80, 125	300, 400,500	Yes	Not Required	Caterpillar
3	WD-410	OH Conveyor	300	10-15	100	Yes	Auto Type	Sprocket
4	WD-410 (inverted)	Ground Conveyor	300	10-15	100	No	Auto Type	Sprocket
5	261 (S-Series) Inverted	Ground Conveyor	600, 800, 1000	50, 80, 125	300, 400,500	No	Auto Type	Caterpillar
6	261 (K-Series) Inverted	OH Conveyor	600, 800, 1000	50, 80, 125	300, 400,500	No	Not Required	Caterpillar
7	262	OH Conveyor	1000 , 1200	125,250	500	Yes	Auto Type	Caterpillar
8	262-Tow Type	OH Tow Conveyor	1000	1000, 1200	500	No	Auto Type	Caterpillar
9	Special Purpose Slat Conveyor	Ground Tow Conveyor	1000	1000, 1500	As per article Size	No	Not Required	Sprocket
10	271	P&F OH Conveyor	1000	300	As per article Size	No	Auto Type	Caterpillar

## TRANSPORTER FOR AUTOMATIC PRETREATMENT

The use of transporter is mainly aimed at improving productivity and quality in pretreatment, autophoretic, electro deposition & similar type of multi tank dipping processes, where dipping & transfer of items is either being done manually or by hoist.

- No chance of error.
- Guaranteed consistency.
- Cuts cost leading to increase in profits.
- Monitoring at every stage possible.
- Complete record of process available.
- Remote supervision is possible.

### Control

Transporters based on the dip timing requirements are categorized into two segments, Fixed Type cycle for fixed dip timings and Variable type cycle with variations in the dip timings.

**Fixed Cycle** - An arithmetic methodology is designed and developed at SEPL with which a chart is prepared with varying tank sequences and timings. This is called as Time Motion Chart - it provides maximum possible achievable load per hour ensuring enhanced production.

**Variable Cycle** - For articles of various sizes and shapes dip timings and even processes and tank sequence may vary. In this cycle, based on predefined sets of dip timings various cycles and tank sequences can be followed by Transporter and it gets programmed for movements ensuring maximum possible load per hour.

Both control schemes are evolved with Programmable Logic Controller and Human Machine Interface; a customized SCADA system can also be facilitated with computer for real time machine movement analysis and reports of timing, production etc.

## OTHER PRODUCT RANGE

- Instamat - Automatic Vertical/Horizontal Carousel.
- ASRS - Customised Automatic Storage & Retrieval Systems.



We reserve the right to modify / change the above data / specifications without prior notice.

## Statfield Equipments Pvt. Ltd.

### Material Handling & Storage Division

**H. O. & Works:** S. No. 1073/1-2-3, Pirangoot, Tal. Mulshi, Dist - Pune 412 111. (India)

**Mob.:** +91 9552546579 **Tel.:** +91-020-22922180/66570100

**Fax:** +91 020-66524695

**E-mail :** akrajderkar@statfieldequipments.com

H.O. & works closed on Thursday

**City Office:** 9-10, Laxman Villa, Near Jog Hospital, Paud Road, Pune- 411 038.

**Tel.:** +91-20-25431450, 25447147

**Fax:** +91-20-25432349.

**Regional Offices :** Mumbai, Bangalore, Delhi

