

TECHNICAL SPECIFICATION

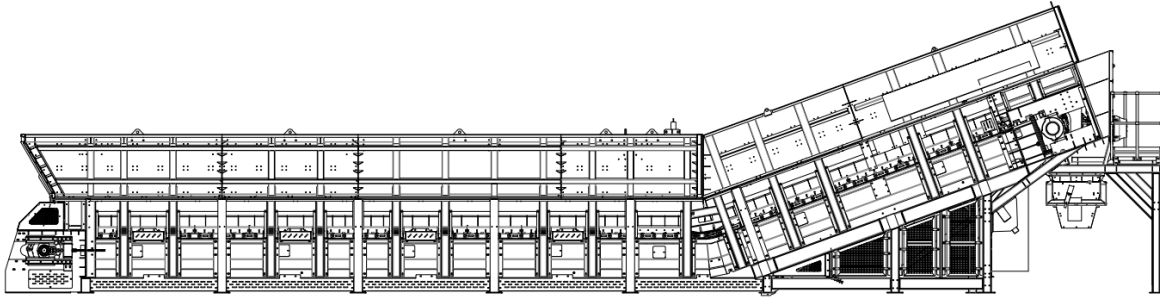
STATIC TITAN SIDE TIP UNLOADER - S800-6 ST / S1600-8 ST



TITAN


Telestack[®]
Mobile Bulk Material Handling

TITAN – STATIC BULK RECEPTION FEEDER



The Titan is a static or skid mounted **surface feeder** designed to accept bulk material from Side Tipping Road Trucks. Titan Bulk Reception Feeders incorporate a heavy-duty apron chain belt feeder which ensures the surge of material discharging from the truck can be transferred in a regulated and controlled manner. The chain and sprocket driven belt ensures that there is no stalling of the feed conveyor, compared to regular 'roller type' belt feeders. The Titan Bulk Reception Feeder is designed to be loaded directly primarily from side tipping trucks, however, can also be fed by wheel loaders, grab cranes, excavators etc. It is used to transfer material/feed auxiliary equipment and reclaim to other conveyors.



Our solutions offer the most efficient method of transferring bulk material from trucks, rail wagons, wheel loaders or discharging grab cranes to auxiliary equipment in a range of applications and industries. The range offers greater flexibility than alternative infrastructures while maintaining performance and minimising any civil requirements.

- Eliminate Double Handling of Material.
- Various Designs to suit a wide range of applications.
- Over 10 years' experience supplying Telestack Bulk Reception Solutions.



TITAN – WHY USE A SIDE TIPPER?

Conventional “**Deep Pit**” or underground truck tipping hoppers require expensive civil works to install and cannot be moved or relocated as your plant expands. A Surface Feeder will allow you, the client, to provide a semi-permanent solution that has the added advantage of being fixed during operation, but also have the ability to be relocated at a later date.

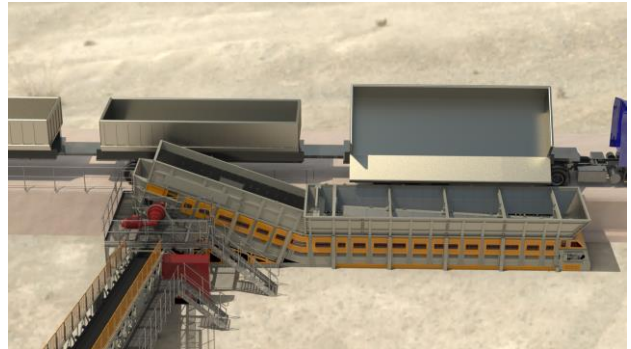
Other Rear Tipping truck unloaders are also disadvantaged by comparison as the cycle times of these setups are much longer than that of a Side Tip solution. When working with a rear tipping process the truck driver must slowly manage the tipping of the material to ensure that overspill does not occur. However, the feed hopper of the Titan Side Tip unit is designed to receive a much larger load under a controlled tipping procedure thanks to the 10m long reception hopper.

Advantages of the Side Tipper Truck Unloader:

- Highly reduced truck cycle time and thus, increased system throughput.
- Ability to be paired with tipping rail wagons providing them with a semi-permanent unloading option.
- Large feed hopper suited to cater for all road going side tip trailers measuring up to 10m in length.

As shown, **right**, other examples of side tip unloaders require a deep wall / high bench setup. This requires expensive and time-consuming civils to be implemented.

All costs which are unrequired when using a Telestack Side Tip Unloader.



TITAN – TYPICAL APPLICATIONS

- Intake point for a material processing plant (i.e., Cement Clinker, Coal, Cereal, Biomass, Aggregate, Ore's, etc.)
- Unloading into side tipper unloader to feed conveyor systems into bulk storage sheds to eliminate use of
- Unloading into side tipper unloader to feed stacker on quarry / mine sites to build up large stockpiles.
- Unloading into side tipper to reclaim material onto overland conveyor.
- Loading material at rail depots directly into rail wagons or containers to eliminate use of front-end loaders.
- Unloading into side tipper to feed ship or barge loading systems.



TITAN Side Tip - Bulk Reception Feeder feeding 20m Fixed Link Conveyor feeding TS 52 Radial Telescopic Stockpiling Conveyor, Stockpiling Material.

TITAN – THROUGHPUT EXPLAINED

Cycle Timing

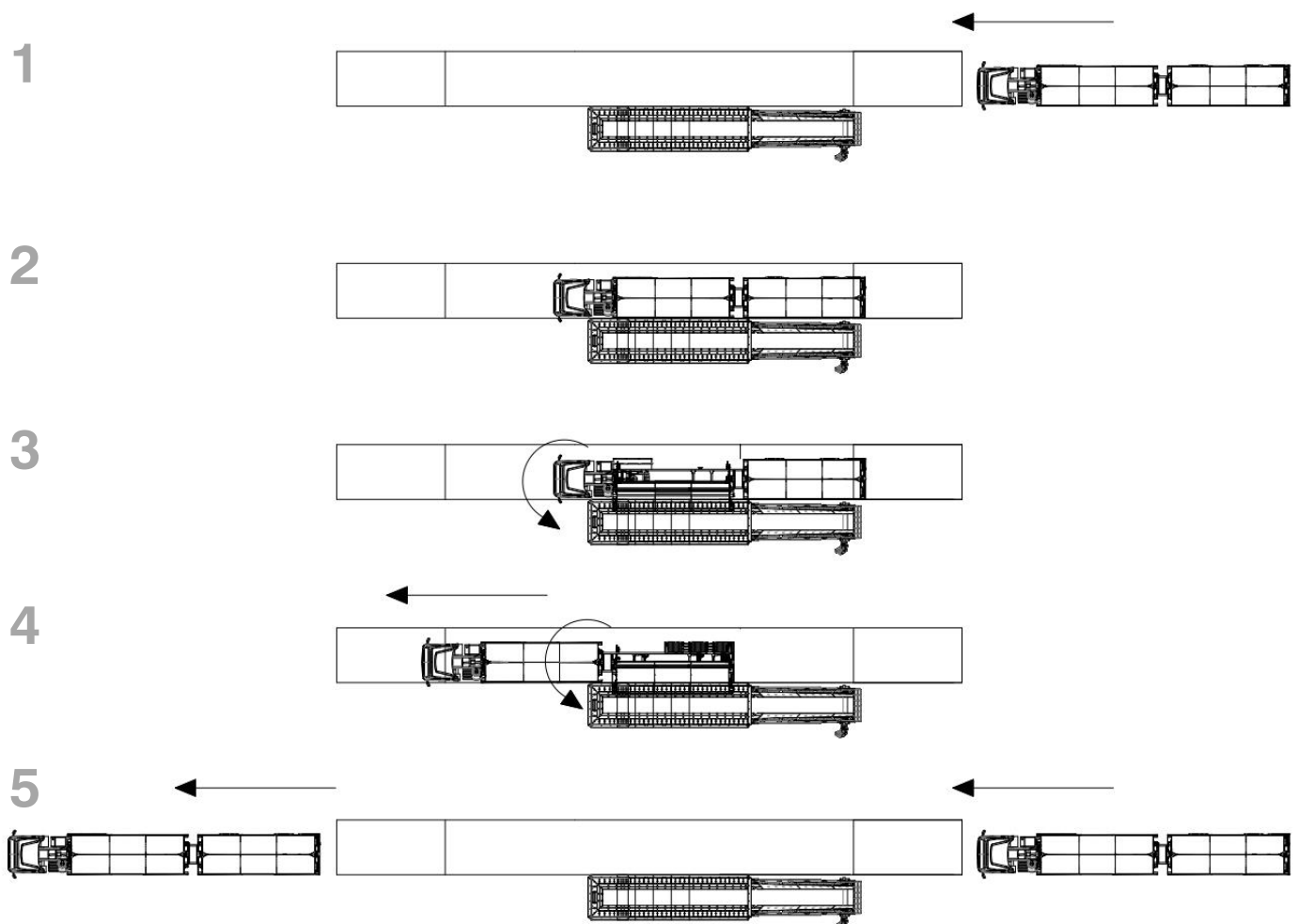
Cycle timing will define the throughput of any Titan feeder. The throughput of your system will be calculated based on: **The total payload of the discharging truck** and **the total cycle time needed to discharge the load.**

This calculation will then give the approximate total tonnes per hour through the system. A sample cycle time is displayed below:

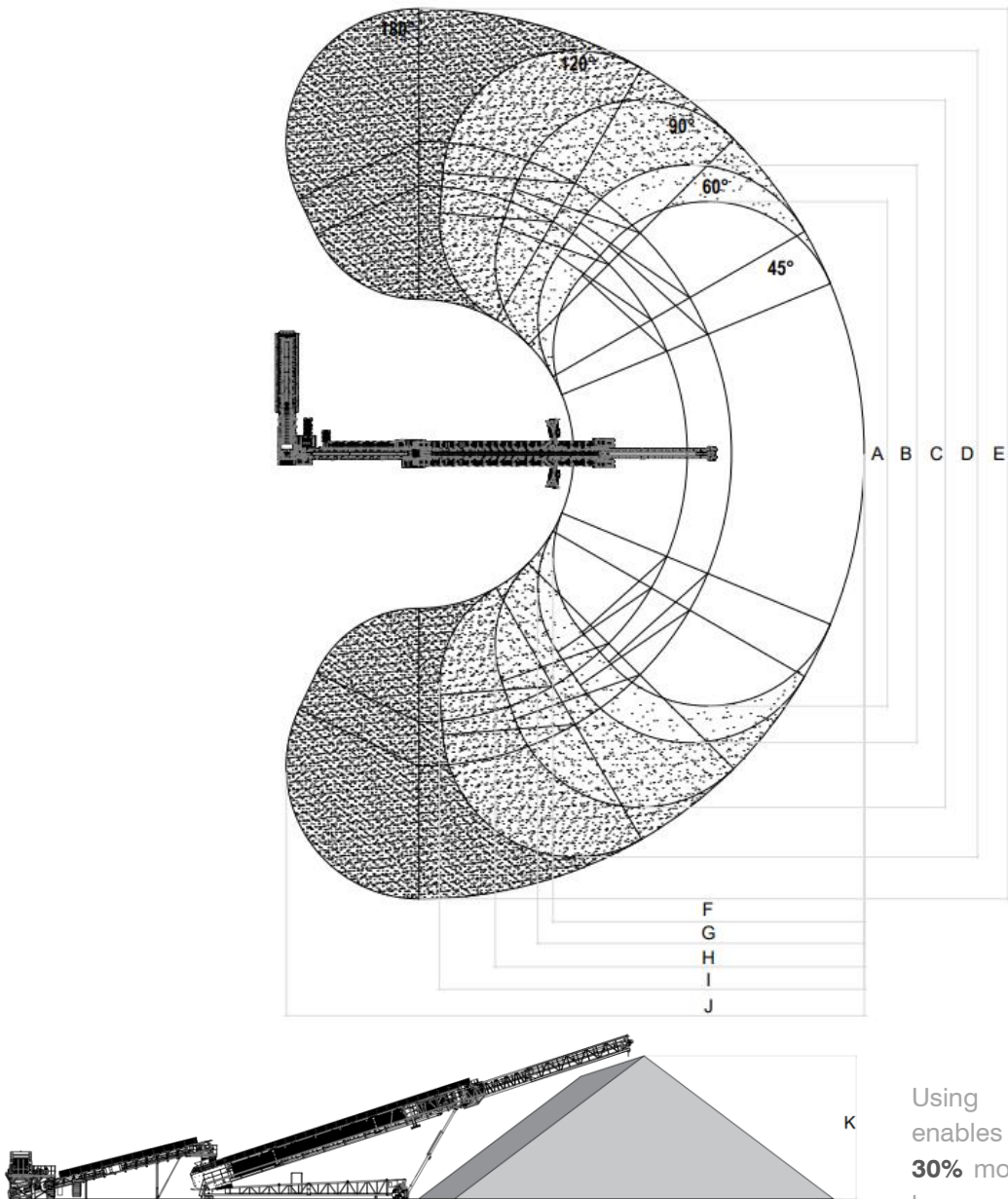
1. Truck drives up ramp and positions body 1 in side loading position.
2. Truck tips load 1 all at once & raises truck body.
3. As the tip in area of the feeder clears the Truck drives forward and positions body 2 in side loading position. It will then wait in this position until the feeder area has cleared of material.
4. At this point the truck tips load 2 all at once & raises truck body and drives clear.
5. The feeder then clears, ready for the cycle to begin again.

Factors affecting Throughput

- Material Density Truck Specification
- Ramp Height / Angle
- Material Flow Characteristics
- Truck Capacity
- Secondary System Requirements
- Traffic Management



TITAN ST, Link & TS 52 – Stockpile Capacity



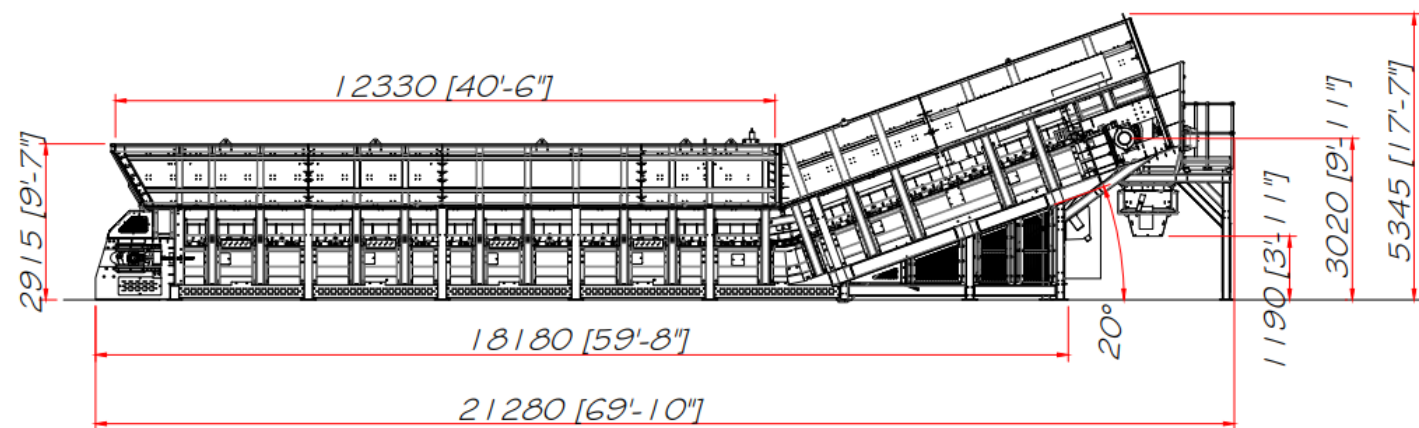
Using the Telescopic feature enables the user to stockpile up to **30%** more than conventional fixed boom radial stacking conveyors.

All stockpiling capacities are calculated based on material, with a bulk density of 1.6 tonnes per m3 (100 lb/ft3)
Stockpile angle of repose 37°

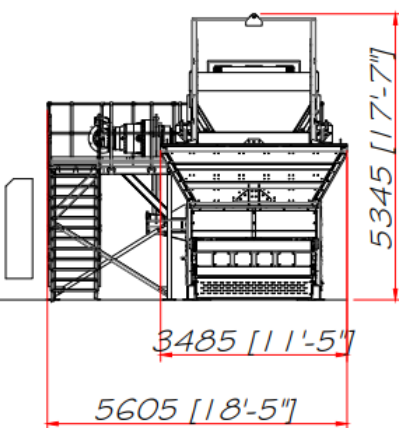
Detail	Stockpile Dimensions		Stockpile Capacity (Volume)		Stockpile Capacity (Mass)	
	Metric	Imperial	m³	yd³	Tonnes	Ton
A	80.75m	265' 1"	0°	10,571	12,931	14,224
B	92.47m	303' 7"				
C	113.20m	371' 8"				
D	129.10m	423' 11"				
E	142.50m	467' 11"				
F	49.77m	163' 5"				
G	52.24m	171' 6"				
H	59.05m	193' 11"	45°	29,649	36,269	39,980
I	67.95m	223' 1"				
J	92.47m	303' 7"				
K	16.00m	52' 6"				
			60°	36,220	44,307	48,840
			90°	49,363	60,386	66,564
			120°	62,507	76,464	84,287
			180°	88,794	108,621	119,734

TITAN ST – TYPICAL WORKING DIMENSIONS

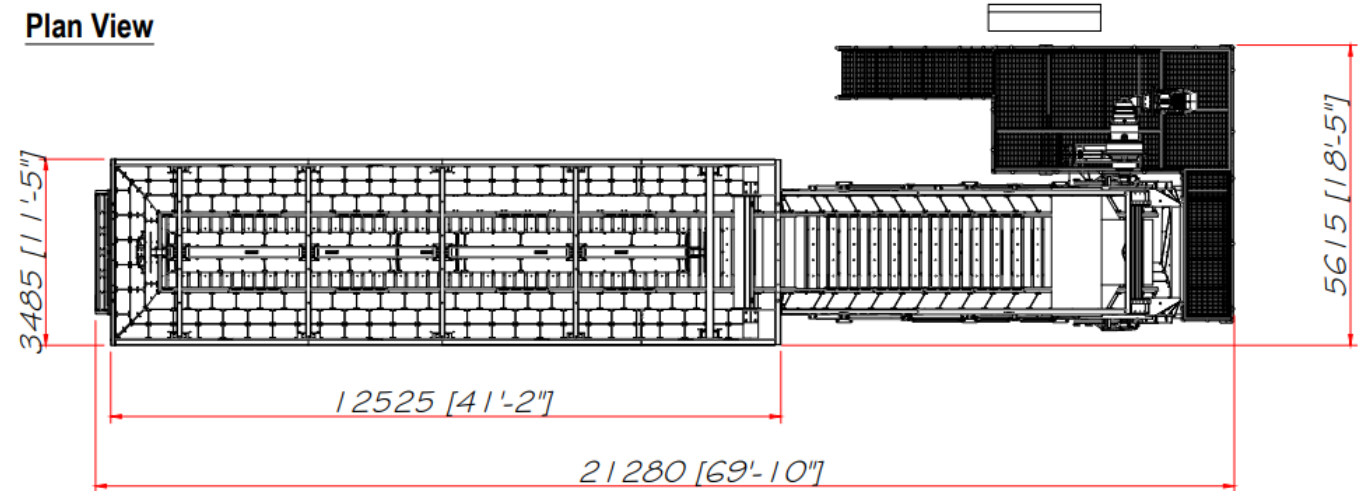
Side View



Rear View



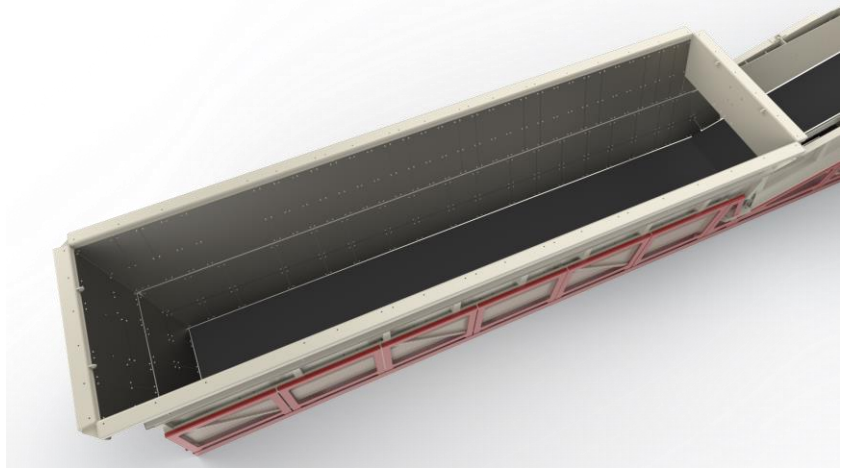
Plan View



TITAN ST – STANDARD FEATURES

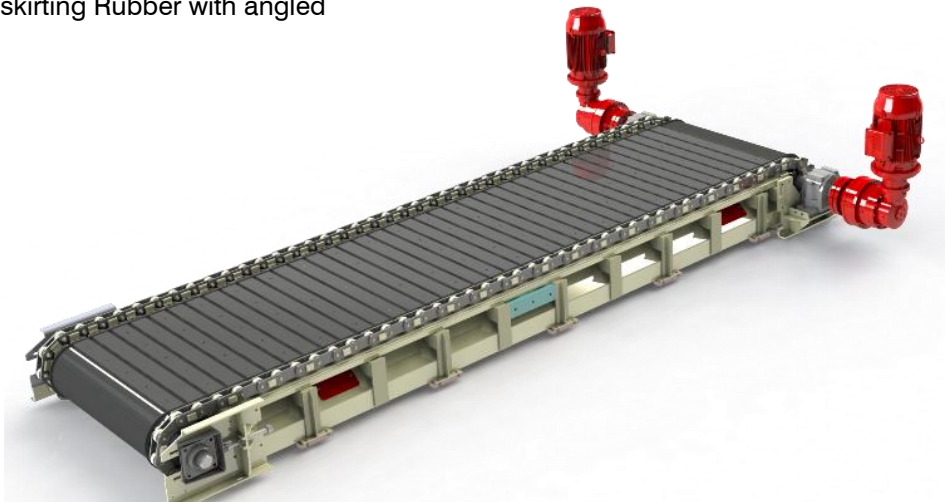
Hopper Feeder

- High Capacity Hopper with 70 Degree tapers on sides, designed to accept full trailer load of material.
- Hopper Width 2.45m (8')
- Hopper Length 10m (32' 6")
- Feed in Height 3.07m (10')
- (Hopper length width and height can vary depending on trailer size and application.
- Optional Heavy Duty fall break system, designed to reduce the load on belt when loading with dense material or high capacity trailers (capacity sacrifice).
- 6mm mild Steel liners with countersunk bolt fitment.



Chain Belt Feeder

- 1400mm (56") wide Apron chain belt feeder.
 - 800-6" and 1600-8" chain options.
- Heavy duty trapezoidal apron bars with belting bolted on top of these which enable strength characteristics of apron pan feeder and sealing properties of standard belt feeder.
- Twin electric motors, with direct drive high torque planetary gearboxes c/w covers.
- 150mm x 12mm skirting Rubber with angled seal to belt.



CHAIN SIZES

1

6" (152mm) pitch, 800kN
chain with 8 Tooth Sprockets
at the head and tail of feeder.

2

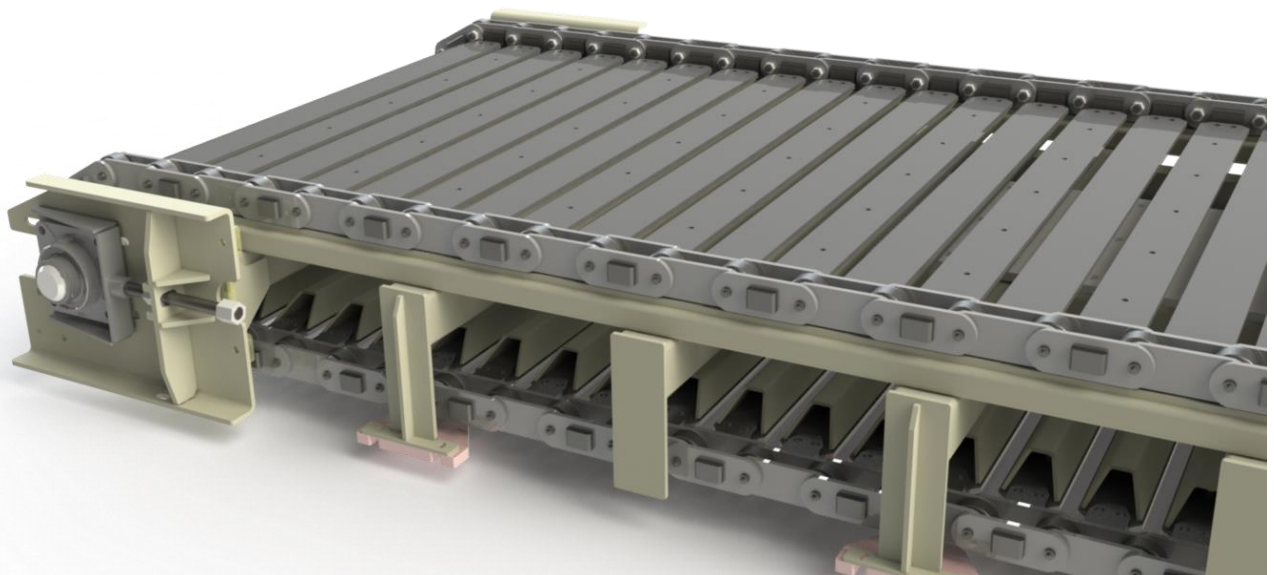
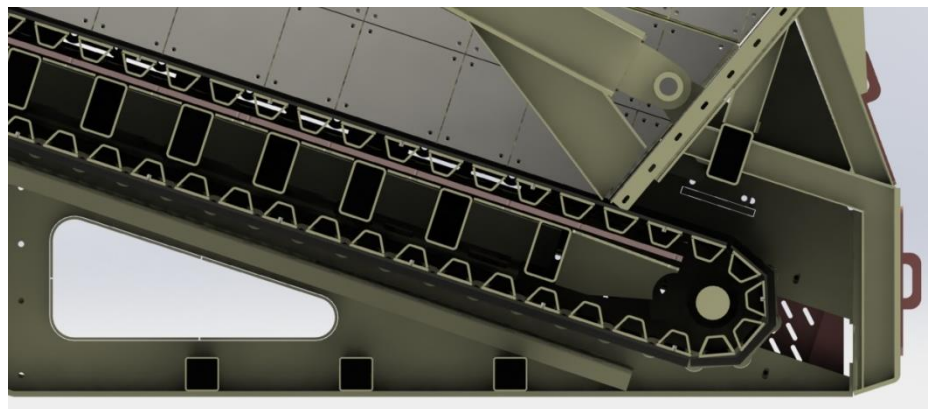
8" (204mm) pitch, 1600kN
chain with 8 Tooth Sprockets
at the head and tail of feeder.

The pitch and chain
strength (**kN**) is selected
based upon the
application parameters.
These include material
characteristics, TPH
requirements and Truck
specification.



TRAPEZODIAL BARS

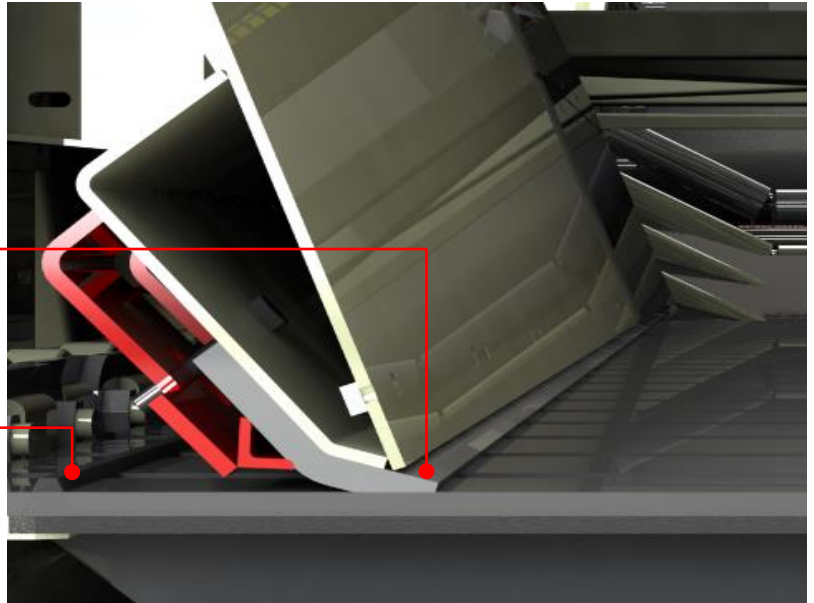
Trapezoidal/Apron Bars running
across the feeder and connected to
both drive chains carry the weight of
the material. Trapezoidal/apron bar
design is selected based upon the
applications parameters.



SEALING

Stage 1 - Rubber skirting to contain material in the hopper and maintain a positive seal. This design allows for wearing of rubber and maintains sealing over period of time. Adjustable skirting that can be reconfigured after wear to maintain the positive seal in the hopper.

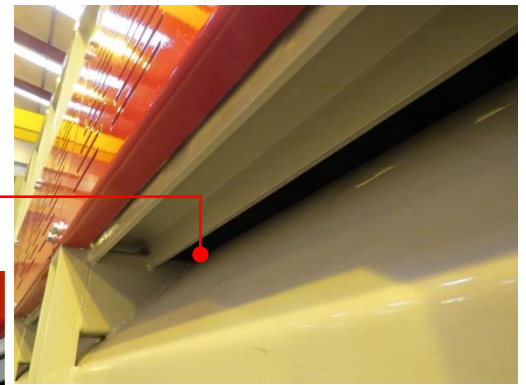
Stage 2 – 25mm (1") Rubber side wall is a secondary containment system. If stage 1 skirting is breached/worn, this sidewall will contain escaped material and transfer it to the discharge chute.



VENTILATED CHASSIS

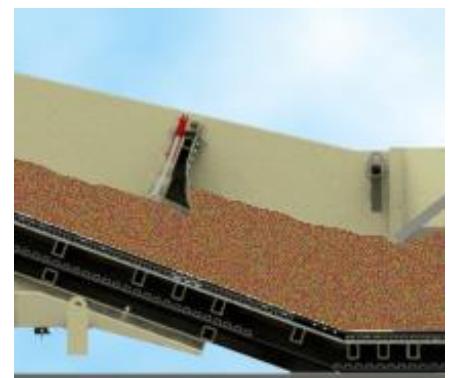
DESIGN - This additional feature allows spilled/escaped material to safely exit the feeder to prevent the possibility of material 'building-up' on the chain section causing excessive wear.

This provides a visual warning of material on the ground. Indicates that sealing needs reconfigured or replaced



MATERIAL LEVELING BLADE

Adjustable material levelling blade /Plough located on the incline section of the feeder controls the flow of material. This provides a constant supply/ constant bed depth travelling to the transfer chute.

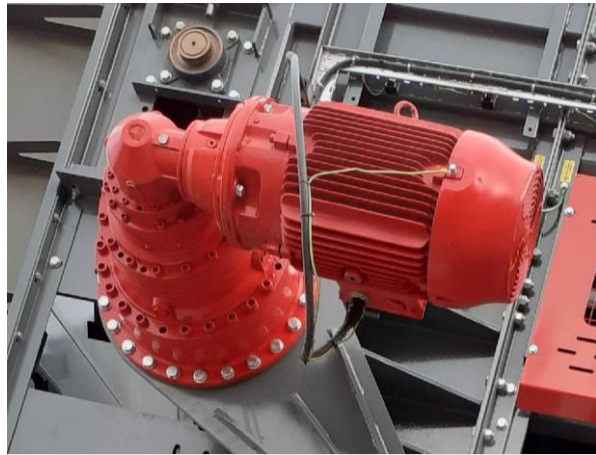


DRIVES & BEARINGS

SHAFT MOUNTED ELECTRIC DRIVES

Electric Drive Motors, IP 66 and IE3 Efficiency as Standard.

All motors are sized and specified based on individual application, commodity and project parameters, as this will vary from project to project.



ELECTRIC SHAFT MOUNTED DRIVE

BELTING

1400mm (55") Wide Belting

Belt bolted to apron chain cross members with countersunk screws, belting selected based application parameters



WEAR RESISTANT BELTING

Robust design means it performs well when handling heavy and abrasive materials. High wear and cut resistance, excellent impact protection and stretch resistance when faced with materials such as gravel, ores etc.

CLEATED BELTING

This belting is used for transporting free flowing material normally over steep angles. The integrally moulded cleats ensures minimal rollback of free flowing material.

HEAT RESISTANT BELTING

Typically used in various industries when transporting hot and abrasive materials. Can perform with temperatures up to 200°C and suitable for handling hot materials such as clinker, cement, coke, slag etc.

OIL RESISTANT BELTING

To prevent against swelling when transporting oily materials, this belting prevents the belt curling on the conveyor where it would become ineffective at transporting material.

FLAME PROOF BELTING

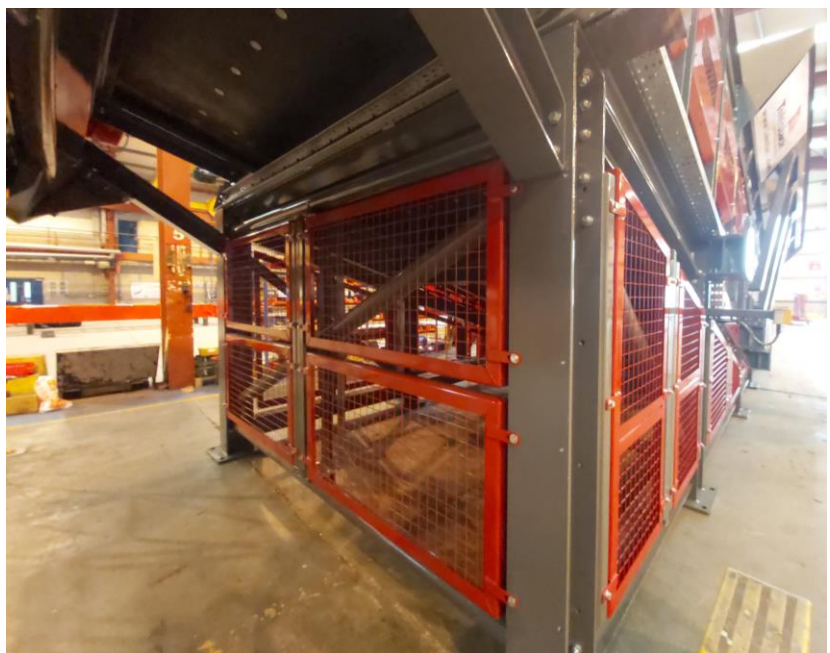
Specifically used in applications where the risk of fire and spread of fire needs to be prevented or controlled, such as mines, confined or enclosed spaces that could be a potential safety risk for the operators.

COLD TEMPERATURE BELTING

Specifically used in applications where the Titan feeder will be faced with adverse weather conditions and sub-zero temperatures.

SUPPORT STRUCTURE

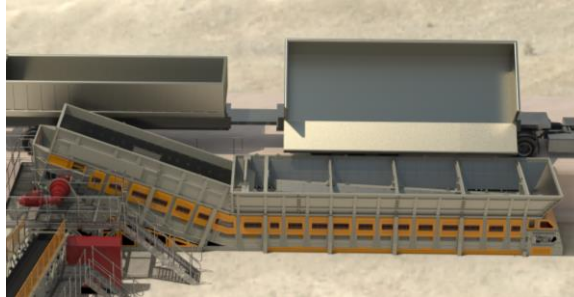
Static bolt-down or skid mounted structural steel support structure fixed in place for maximum stability and strength. Structure is collapsible for ease of reallocation and can be easily



SCRAPERS & GUARDS

Secondary Scraper - located at the head of the chain feeder to clear any unwanted or excess material from the belt, and direct into the transfer chute.

Maintenance Guards – Easily removable guards on the side of the machine, to provide unhindered access to the chain feeder during maintenance.



PAINT SPECIFICATION

PRE-PAINT PREPARATION

- All steel work Degreased/Cleansed
- Shot blasted in accordance with standard SA 2.5
- Steel shot blasted with synthetic mineral silicate using a grain size of 0.2 – 1.5mm, to give a high cleaning rate and etch acceptable for coatings.

Option ID	Micron Finish	Coats					Finish range DFT (µm)
		1	2	3	4	5	
Telestack P1 (Standard)	140	K3	PU	PU (Flash)	N/A	N/A	120µm - 155µm
Telestack P2 (Marine)	250	Zinc	K3	PU	PU (Flash)	N/A	250µm - 300µm
Telestack P3 (Special)	300	Zinc	K3	K3	PU	PU (Flash)	275µm - 325µm

- **A – K3 – High Build Two-Pack Epoxy Primer** - A high performance two-pack epoxy primer designed to meet the exacting requirements of the agricultural and construction equipment markets, used in all applications.
- **B – Zinc Rich Epoxy Primer** – Zinc based epoxy primer with capability for high build application, used in Marine and very abrasive applications.
- **C – PU - High Solids Two-Pack Polyurethane Finish** – High performance Two-pack polyurethane designed to meet the exacting requirements of the ACE and materials handlings market, can be used in all applications.

COLOUR

1. RAL - 7032– Telestack Cream
2. RAL - 3001 - Telestack Red

All steel work fully painted, including inside edges of holes/cut-outs, along edges and underneath/hidden faces not normally viewed.

**(All externally purchased items shall have a nominal DFT of 50-100 µm, as delivered to Telestack. If additional paint is required this must be discussed up front with the sales team.)*

TITAN ST – DISCHARGE CHUTE OPTIONS

The transfer chute of the Titan Bulk Reception Feeder is typically mounted perpendicular to the subsequent conveyer system. The customised design of the transfer chute allows it to be compatible with a number of different discharge options such as:

Belt Conveyors

- Horizontal
- Inclined (Shown Right)

Screw Conveyors

- Single
- Twin

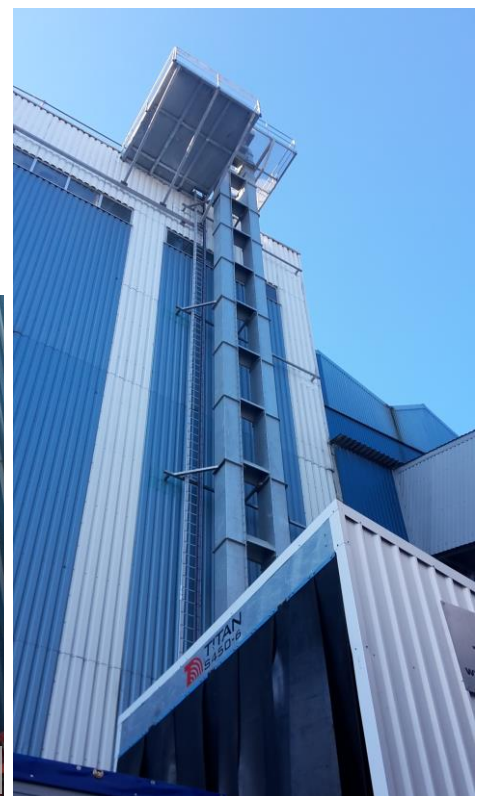
These discharge conveyors transfer material onto outgoing systems i.e. primary screener or bucket elevator system. A material levelling blade regulates the flow entering the transfer chute meaning that a constant and controlled flow will be transferred onto the outgoing system. *(Other discharge options such as: Vibrating Chute, Oversize Rejection Grid are available.)*



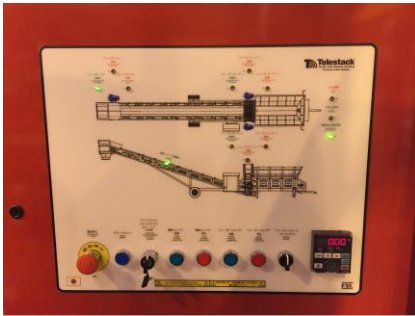
TAPPERED CHUTE ONTO INCLINE CONVEYOR



TWIN SCREW CONVEYOR FEEDING BUCKET ELAVATOR



TITAN ST – OPTIONAL EXTRAS



IP66 Rated Integrated Control & Enclosure



Radio Remote Control (Start/Stop Feeder)



Stainless Steel Enclosure



Tail Shaft Rotation Monitor



Pull Chords Surrounding Machine



20m "Jump" Conveyor

Other Options:

- **Spray Bar Water Mist System** – Feed in Area and discharge area optional locations
- **Feeder & Wear Liners**
 - ABRO 400 – 6mm
 - ABRO 400 – 10mm
 - Low Friction Plastic Liners – 10mm
- **Belting Upgrade**
 - Ep 630 – 4Ply 6+2mm
 - EP800 – 5Ply 8+2mm
 - Oil Resistant belting
- **Paint Finish**
 - Marine Environment Paint Specification.
 - Customer Specific Colour.
- **Dust Enclosure**
 - Cladded dust enclosure to minimise dust emissions.
 - Rubber flap entry curtain.
 - Galvanised steel dust covers on inclined section of feeder.
 - Galvanised steel dust covers on optional jump conveyor.
- **Dust Enclosure**
 - Cladded dust enclosure to minimise dust emissions.

SAFETY & INDUSTRY STANDARDS

All Telestack machines are compliant with the following standards:

1. **BS EN 618:2002 +A1:2010** - Continuous handling equipment and systems.
2. **BS EN 953:1997+A1:200** - Safety of Machinery - Guards
3. **BS EN ISO 13857:2008** - Safety of Machinery - safety distances to prevent hazard zones being reached by upper and lower limbs.
4. **BS EN ISO 12100:2010** - Safety of Machinery - General principles of design - Risk assessment and risk reduction
5. **BS EN ISO 13850:2008** - Safety of Machinery – Emergency Stop Equipment
6. **BS EN 60204-1:2006 + A1:2009** - Safety of Machinery – Electrical Equipment of Machines
7. Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed conveyors
8. **CE Certified** 

QUALITY & MANUFACTURING STANDARDS

Scope of Supply - The Design, Manufacture, and Installation of Bulk Material Handling Systems – Servicing Ports, Mining and Quarrying Industries on a Global Scale

9. **ISO 9001:2008** - Quality Management Systems Certified
10. **ISO 14001:2004** - Environmental Management Certified
11. **OHSAS 18001:2007** - Occupational Health and Safety Management

TITAN ST – TRANSPORT & INSTALLATION

Containerisation

- Machine can be flat packed into 40ft High Cube containers and transported globally.

Flat-Bed/Trailer Transportation

- Shipped in 2/3 large pre-assembled sections for quick setup on site.

Assembly

- All sections are bolted together so no welding is required on site.
- All units are pre-wired with each unit using plug-&-socket technology for interlinking the sections and auxiliary equipment, eliminating complex electrical work on site.
- The units include fully built and tested systems, eliminating complex assembly on site.



Testing & Training

- All units are fully assembled, quality checked, tested and broken down before they left the factory significantly reduce commissioning time on site.
- Telestack can supply, if required, an installation engineer to oversee the process, dry/wet commission the unit and provide detailed training for the operators.

AFTERSALES

Dedicated Facility with A Dedicated Team - Telestack after-sales department quickly solve problems to ensure the safe and efficient operation of Telestack equipment in the field and support regular maintenance and uptime of the product. Parts packages are tailored to suit the equipment, the application and the location.

The Correct Part First Time, Every Time – Our spare part team does extensive research into ensuring that you receive the correct parts ASAP. Telestack will go above and beyond to get your machines up and going. All of our Telestack Spares teams do extensive internal training regarding the spare parts on your machine.

Consistent Quality that you Have Come to Expect from Telestack – Consistent quality is at the heart of what we do. Internal quality checks exist to ensure that you receive the correct part and that is of sufficient quality.

What We Do – Within the Spares department we continuously build and develop strong relationships with our customers, putting your needs at the fore. Particularly in relation to after sales support, spare parts queries, shipping and transport and assistance with technical knowledge where possible. We have a team dedicated to assist you with all issues relating to after sales

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**THE
POWER
TO MOVE
MATERIALS**

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