



ProStack[™]
A TEREK BRAND
BULK HANDLING SOLUTIONS



PORTS & TERMINALS



Terex launched the ProStack range in 2020 to offer a comprehensive portfolio of products to specifically address the needs and challenges of handling dry bulk material. Our vision, whilst working alongside strategic partners is to develop a portfolio of products that will continue to meet changing industry needs through innovative design solutions, quality equipment and exceptional aftersales support.

Leveraging the extensive Terex manufacturing and support networks, ProStack's product portfolio offers bespoke, application based conveying solutions that give the operator high efficiency and flexibility in the import and export of dry bulk cargo.

Central to ProStack development has been investment in new manufacturing facilities. ProStack equipment is manufactured at a state of the art facility in Campsie, Northern Ireland. Opened in 2019, the £12million factory spans 135,000 square foot. The facility is home to a highly skilled engineering team that leverages cutting edge engineering capabilities and technology, and leads the development of ProStack bulk material handling and product stockpiling equipment. Additional to this, we have support from facilities in North America and India to bring the high levels of service our customers expect from Terex.



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Product Overview

Telson Telescopic Conveyor Series

The Telson conveying series is designed for high and optimum efficiency when shiploading. Radial telescopic shiploading allows the equipment operator to load, trim and hatch change from one fixed feed in point. With the feed in point staying fixed, the result is less machine movements whilst loading' resulting in increased efficiency and greater reduction in the risk of demurrage penalties during the shiploading process. Combined with hydraulic raise lower features as standard, the conveyor can transport into the vessel, complete set up, load and manoeuvre with ease.

The addition of mobility greatly increases the value of the Telson series, allowing the equipment to be rapidly deployed to the quayside and also put back into storage when the loading process is concluded. This maneuverability and small footprint allows the berth to be re-purposed when shiploading is not in operation. Telson conveyors can load, unload or stockpile within the port. The ability to tailor our telescopic conveyors to suit any job is what sets us apart.



Manta Port Hopper Series

Building on the extensive series of ProStack equipment focused on the export of bulk cargo, the Manta range allows us to offer mobile solutions for the import and unloading of bulk material. The ProStack Manta range is a market leading range of standard, heavy duty and customized environmental ship unloading hoppers.

Loaded with a crane and grab, Manta hoppers are a robust, reliable and efficient bulk handling solution, customised to the product, terminal and specifications of our clients. The innovative Environmental Hopper combines reliability with state-of-the-art dust control features; it is a world leader in clean bulk handling.

Hornet Bulk Reception Feeder Series

The Hornet series is purpose built to accept load from rear tip, articulated and belly feed trucks. Allowing the port operation to tip directly into conveyor rather than on the quayside, allows for truck-to-ship loading. As the product is not tipped onto the quayside, cross contamination, double handling and product degradation is greatly reduced resulting in high quality product.

At the heart of the Hornet design is the ability to be tailored and customised depending on the specific application. An extensive options catalogue allows the equipment to be placed in different loading configurations and customer specifications

Customisation includes but is not limited to conveyor belt specification, static options, extended ramp length and width, dust containment systems, radio control systems and finishing options.



Ranger Tracked Conveyor series

The growing series of tracked conveyors which includes tracked mounted conveyors and high/low level feeders, are an increasing presence in ports and inland river terminals. Latest innovations such as the 360 degree orbital chassis, provide a flexible, efficient and low cost shiploading alternative for small port operations. Feeding with front end wheel loaders, dry bulk material can be loaded directly onto vessel, or used as an ancillary feed device to load larger ProStack shiploading equipment.

Telson vessel loading capabilities

Taking into account the multitude of variations from vessel beam, quayside space to vessel freeboard, ProStack offer a complete range of conveyor lengths to cover all loading scenarios. This variability in length allows the range to load from small barges in inland river terminals to deep ocean going vessels such as baby capsizes. Coupled with ProStack's comprehensive back catalogue offering, these bespoke shiploading systems ensure optimum operational performance for the end user

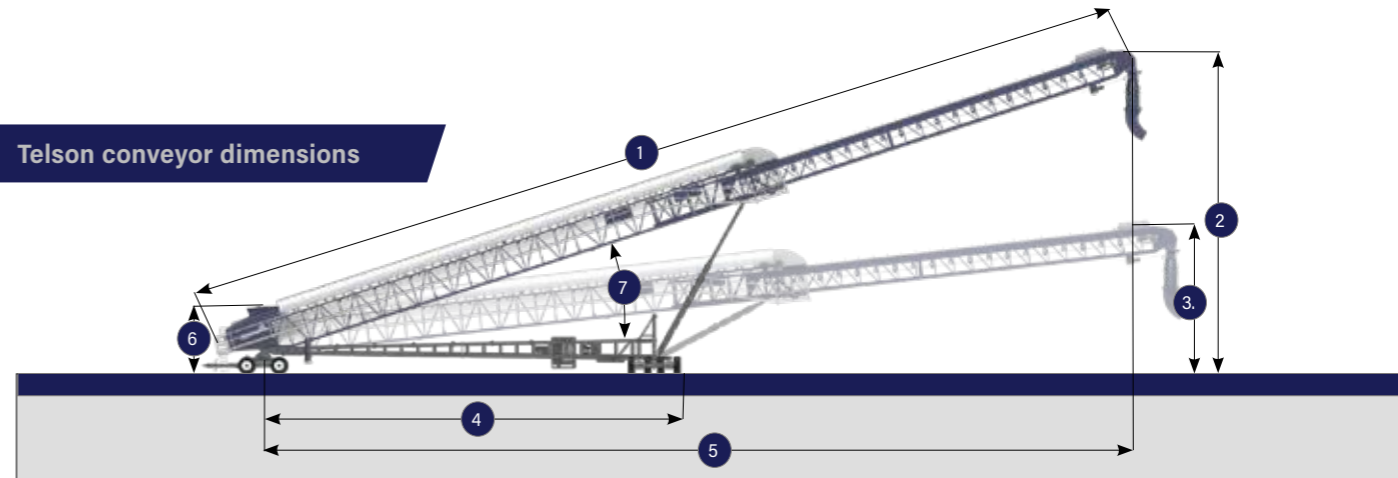
Each Telson conveyor can be customised to suit the demands of individual ports or terminal, with careful focus being placed on the individual application of material(s) being conveyed.

The below diagram shows the compatibility of the Telson range with a variety of vessel sizes.

VESSEL LOADING & SIZES

	Holding Capacity (DWT)	Typical FreeBoard Height	Telson 32m (110ft)	Telson 42m (140ft)	Telson 46m (150ft)	Telson 52m (170ft)	Telson 58m (190ft)
Barge	0-5,000	0-4m	x	x	x	x	x
Coaster Vessel	0-10,000	2-6m	x	x	x	x	x
HandySize	24,000-40,000	6-8m		x	x	x	x
HandyMax	35,000-50,000	7-10m		x	x	x	x
Panamax	60,000-83,000	12-14m				x	x
Baby Cape	83,000-120,000	14-18m					x

Telson conveyor dimensions



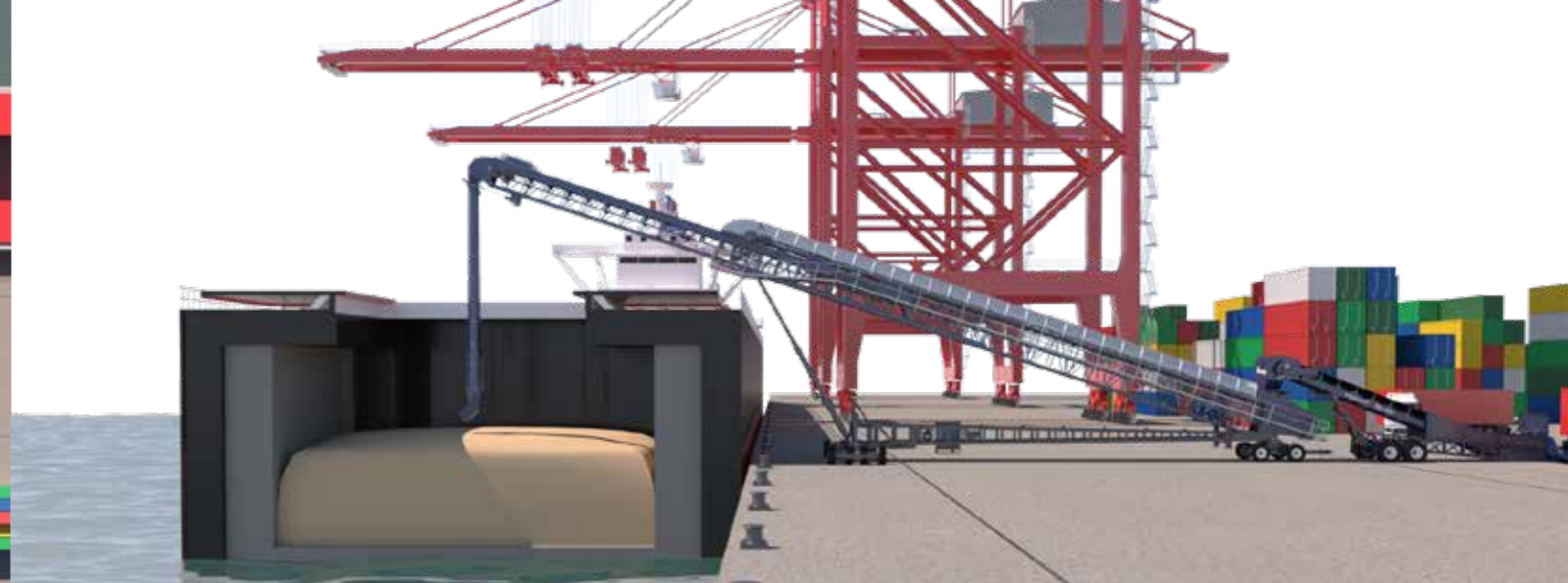
The comparison table below shows the variation in sizes of ProStack Telson conveyors and the different dimensions.

CONVEYOR DIMENSIONS

		Telson 32m (110ft)	Telson 42m (140ft)	Telson 52m (170ft)	Telson 58m (190ft)
Conveyor Length	1	32m (110ft)	42m (140ft)	52m (170ft)	58m (190ft)
Maximum Discharge Height (Extended)	2	11.84m (38'-10")	14.32m (47')	18.27m (59'-11")	19.5m (63'-9")
Minimum Discharge Height (Extended)	3	5.52m (18'-2")	7m (22'-11")	10.96m (35'-11")	12m (39'-4")
Chassis Length (Kingpin to Swing Axle)	4	12.53m (41'-1")	18.34m (60'-2")	22.45m (73'-8")	22.47m (73'-9")
Maximum Reach (Kingpin to Discharge point)	5	29.26m (96')	39.88m (130'-10")	47.5m (155'-9")	53.56m (175'-8")
Feed In Height	6	2.83m (9'-3")	2.7m (9'-1")	3.47m (11'-5")	3.85m (12'7")
Operational Angle Range (Degrees)	7	(8-18)	(8-18)	(8-18)	(8-18)
Operational Width	8	6.8m (22'-4")	6.8m (22'-4")	10.48m (34'-5")	10.48 (34'-5")



Telescopic and Radial functionality



QUAYSIDE-WORKING DIMENSIONS

	Telson 32m (110ft)		Telson 42m (140ft)		Telson 52m (170ft)		Telson 58m (190ft)	
Minimum Quay Length	18.7m	61' 4"	23.8m	78' 1"	29.8m	97' 11"	30.6m	100'
Undercarriage Length	12.53m	41' 1"	17.7m	58' 1"	22.62m	74' 3"	22.73m	74' 7"
Clearance Distance	6.16m	20' 3"	6.1m	20'	7.22m	23' 8"	7.82m	25' 8"
Reach Length (Fully Raised)	10.58m	34' 8"	15.7m	51' 4"	17.57m	57' 8"	23.02m	75' 6"
Reach Length (Fully Lowered)	12.16m	39' 10"	17.4m	57' 1"	20.29m	66' 7"	25.48m	83' 7"
Discharge Height (Fully Raised)	11.84m	38' 10"	14.32m	47'	18.27m	59' 11"	19.5m	63' 9"
Discharge Height (Fully Lowered)	5.52m	18' 2"	7m	22' 11"	10.96m	35' 11"	12m	39' 4"

SHIP-LOADING DIMENSIONS

	Telson 32m (110ft)		Telson 42m (140ft)		Telson 52m (170ft)		Telson 58m (190ft)	
Radial Conveyor Arc Distance @ 90 Degrees								
Distance from Shiploader Feed-in point to Quayside	18.7m	61' 4"	23.8m	78' 1"	29.8m	97' 11"	30.6m	100'
Maximum Radial Arc Linear Length @ 90 Degrees	40.9m	134' 6"	58.99m	193' 6"	70.19m	230' 3"	75.48m	257' 8"
Minimum Radial Arc Linear Length @ 90 Degrees	24.66m	80' 11"	35.38m	116' 1"	43.28m	142'	43.5m	142' 7"
Radial "Travel-In" Distance of Telescopic Stinger Conveyor	11.54m	37' 10"	16.68m	54' 9"	19.03m	62' 5"	24.79m	81' 3"
Typical Radial Arc Angle (Degrees)	90		90		90		90	



Mobile Systems

The Mobile ship loading technology and systems developed by ProStack are tailor-made to suit the requirements of the customer. Mobile Telescopic conveyors, Feeders and Tracked conveyors can be rapidly deployed onto any level quay side.

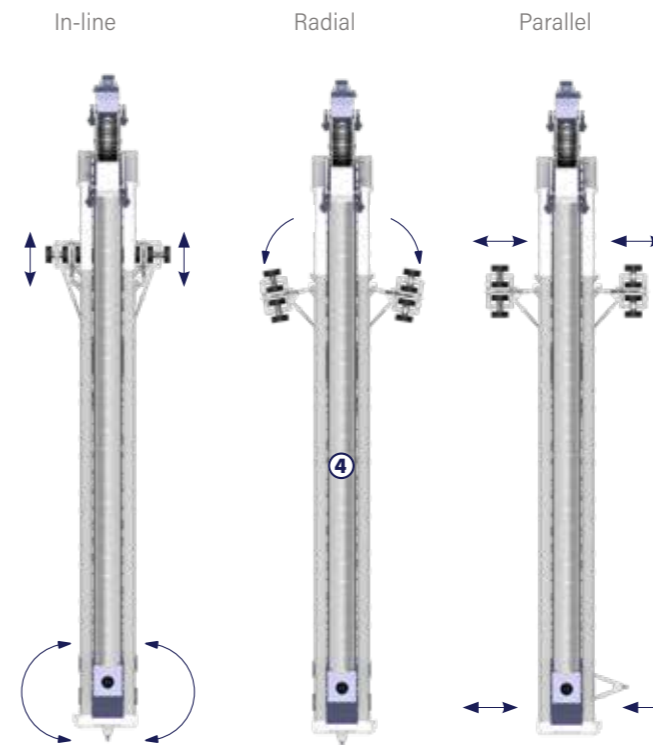
Mobility offers the key to operational flexibility as each ProStack conveyor can easily be moved from the quayside when not in operation meaning the berth can be used for other operations

During the ship loading process the operator has full control of product placement through the luffing, radial and telescopic features of the Telson Conveyor. The mobility of the Telson and Hornet range allow for fast deployment and efficient operational movements between cargo holds.

The undercarriage is designed to be used in the following mobility configurations:

- ① **PLINTH MOUNTED**
(Wheeled Radial & Site Towable)
- ② **TRACKED TUGGER**
(Wheeled Radial & Self Propelled Tracked Tugger)
- ③ **WHEELED TUGGER**
(Wheeled Radial & Self Propelled Wheeled Tugger)
- ④ **ALL DOCK TRAVEL**
(Self Propelled, Wheeled All Dock Travel System)

Dock travel systems



Telson shiploading technology

Hatch loading, trimming and changing are the key drives of operational efficiency when loading ocean going vessels. The Telson Telescopic Shiploader series combats these challenges by including the following technology:

1. Radial Axel Drive

Powered radial drive allows the conveyor to move left / right, allowing for multiple hatch loading from one fixed feeding position.

3. Hydraulic Luffing

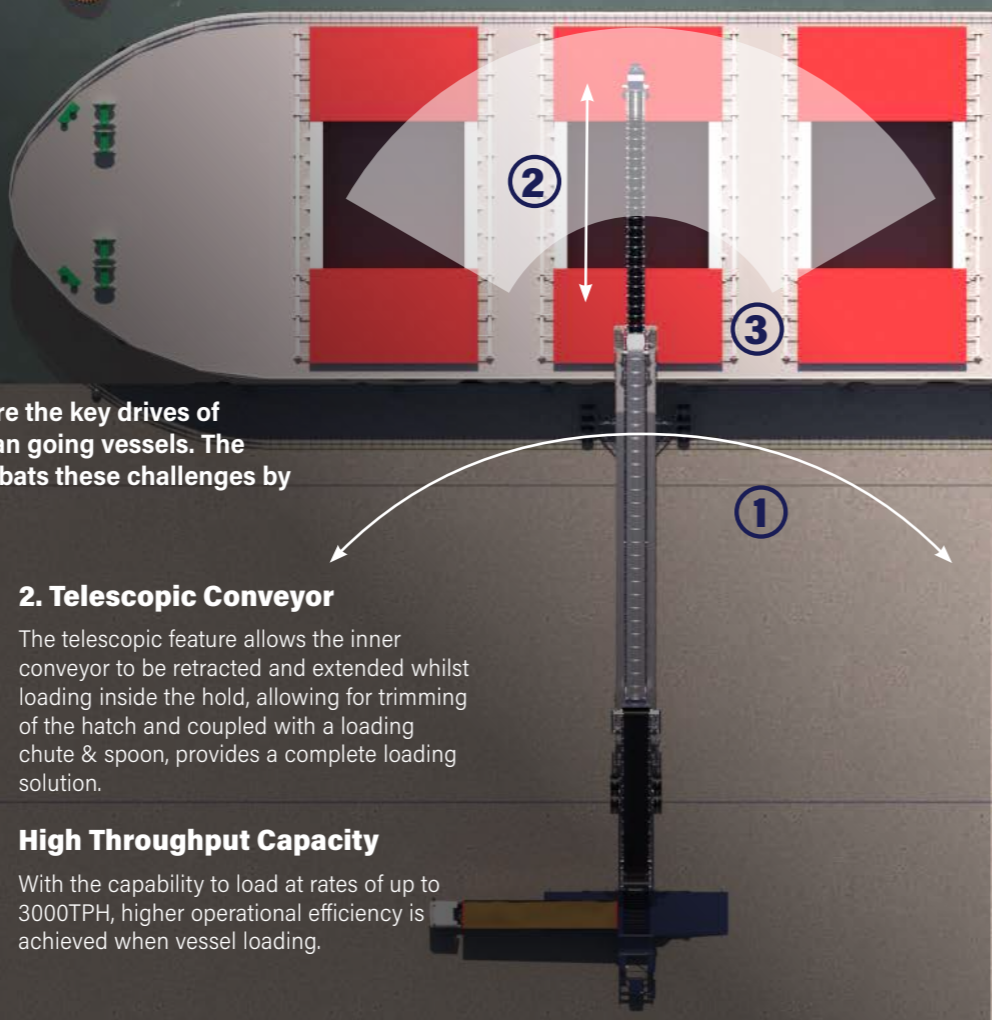
As standard, the Telson conveyor undercarriage will contain hydraulic cylinders which are in use as the conveyor transports into the hold. It can be used for height adjustment as the vessel becomes in ballast, and will allow the conveyor to fold down to a small footprint when in storage position.

2. Telescopic Conveyor

The telescopic feature allows the inner conveyor to be retracted and extended whilst loading inside the hold, allowing for trimming of the hatch and coupled with a loading chute & spoon, provides a complete loading solution.

High Throughput Capacity

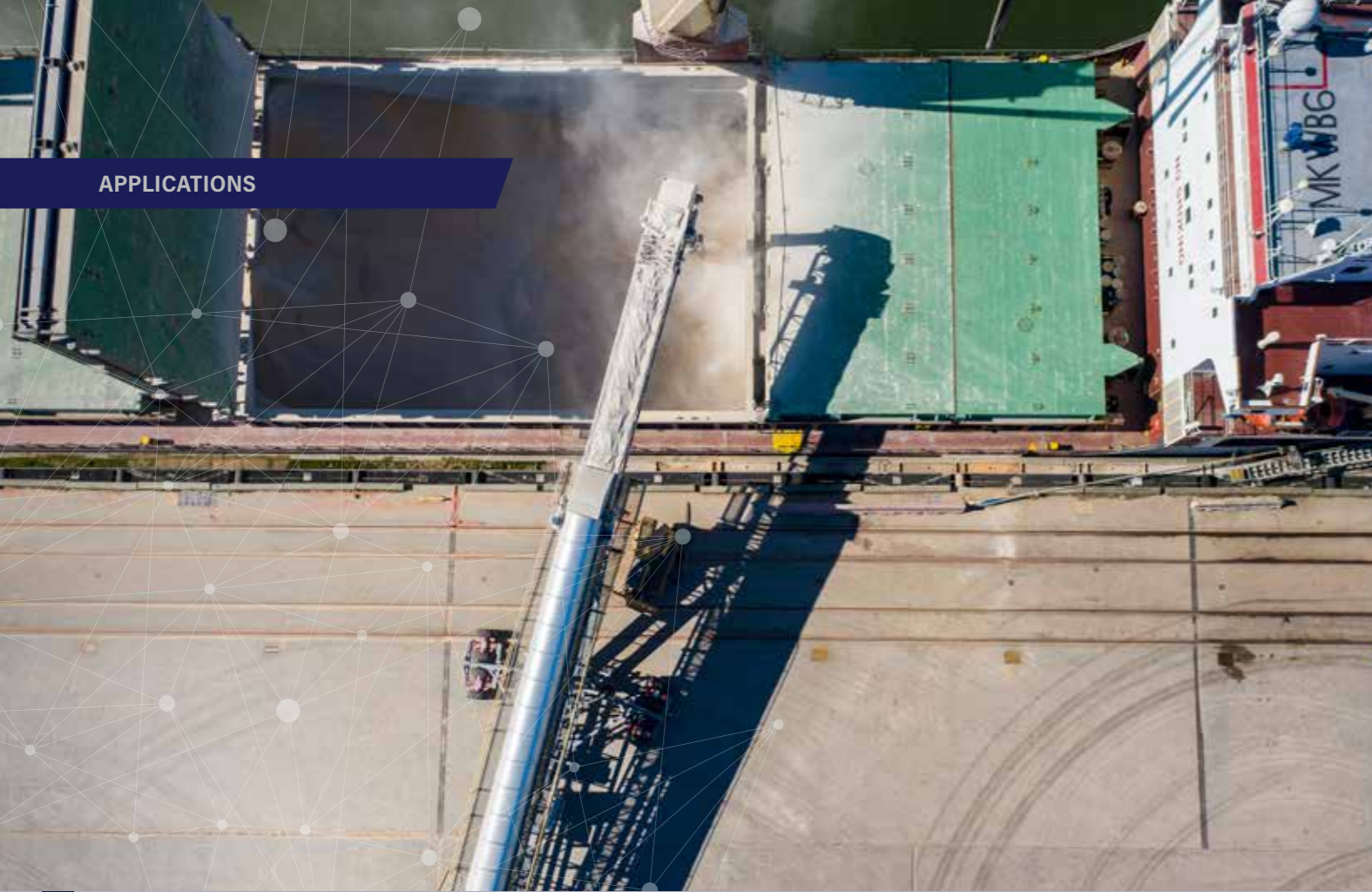
With the capability to load at rates of up to 3000TPH, higher operational efficiency is achieved when vessel loading.



Telson

- 1. Inner (Stinger) Conveyor
- 2. Outer Conveyor
- 3. Undercarriage
- 4. Dust Covers – Canvas Retractable on stinger & Galvanised Steel on Outer
- 5. Under Trays
- 6. Wheeled Bogie
- 7. Radial Axle
- 8. Hydraulic Raise / Lower Undercarriage
- 9. Control Panel
- 10. Sealed Feed in point
- 11. Fully Sealed Transfer Point
- 12. Fully Sealed Discharge Point
- 13. Telescopic Loading Chute
- 14. 360 Degree, rotating loading spoon
- 15. Galvanised Maintenance Catwalks

APPLICATIONS



STOCKYARD MANAGEMENT



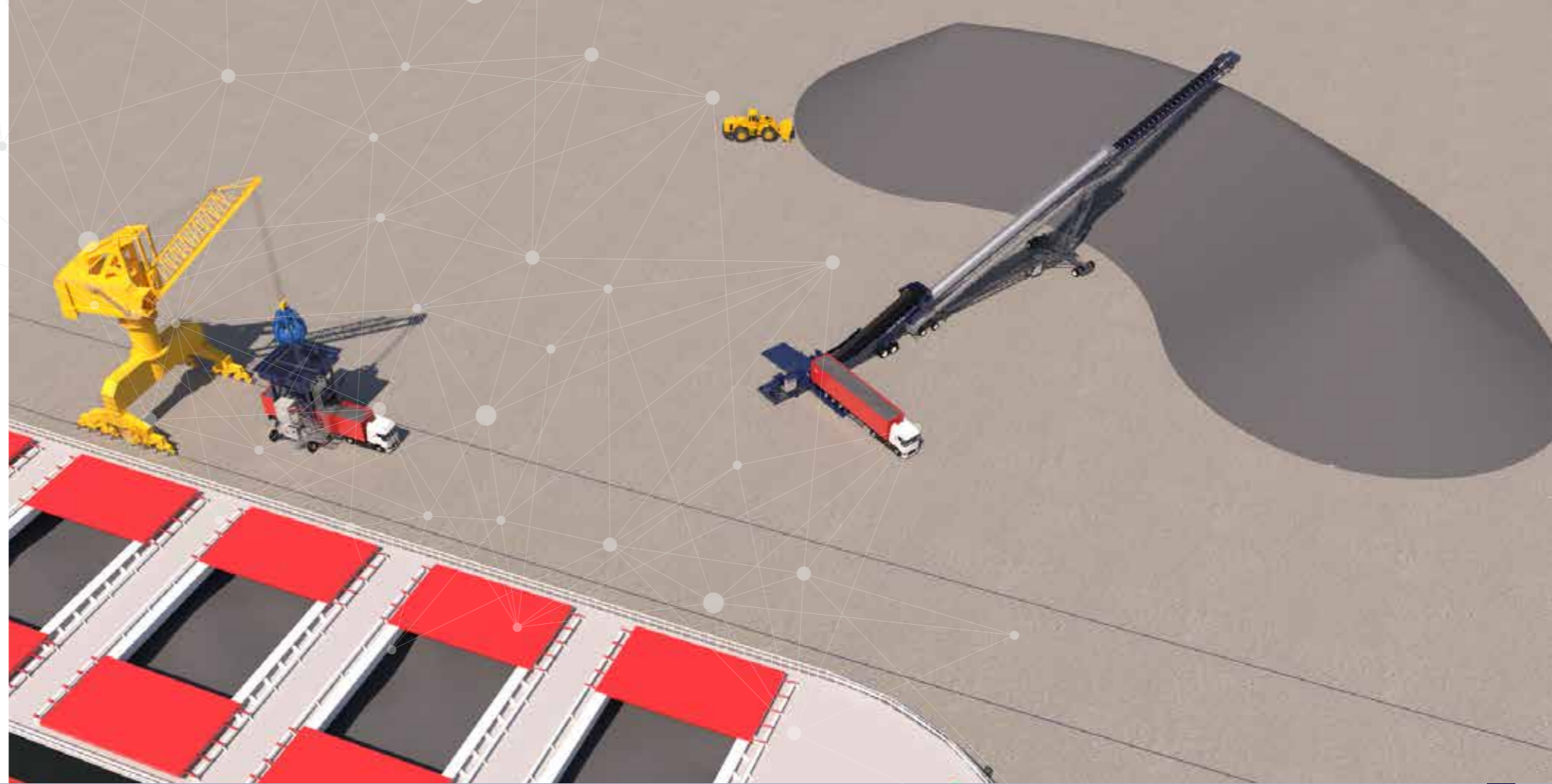
Stockyard Management allows operators to effectively manage material by stockpiling in an efficient and coordinated manner.

ProStack Example:

The high mobility of ProStack equipment means that our products can be used together to effectively stockpile material, increasing uptime and ultimately profits. Machines can be redeployed away from the Quay, transporting material to a different location. Our range of products allows the operator to cover both import and export of bulk materials with minimal capital outlay in costly infrastructure.

Imported bulk products are offloaded by crane or from a geared vessel ship to the Manta hopper which meters loads directly to trucks. This material is then transported to the stockpile area and fed directly from truck to the Hornet truck unloader, which feeds a Telson telescopic conveyor to stockpile or fill warehouse.

The equipment mobility then allows Hornet and Telson to be redeployed back to the quay side to load vessels directly from trucks for export.



BULK RECEPTION FEEDERS

The Hornet series is purpose built to accept load from rear tip, articulated and belly feed trucks. Allowing the port operation to tip directly into conveyor rather than on the quayside allows for truck-to-ship loading. As the product is not tipped onto the quayside, cross contamination, double handling and product degradation is greatly reduced resulting high product quality being maintained.

Throughout the process, the Hornet series can either be used to load directly into vessel or more commonly be used to directly feed larger ProStack shiploading equipment. This extensive range sees the series being used in a variety of application from shiploading to the unloading of vessels, trucks, rail wagons and more.

At the heart of the hornet design is the ability to be tailored and customised depending on the specific application. An extensive options catalogue allows the equipment to be placed in different loading configurations and customer specifications.



Total Port Solutions

Range Includes:

- Back catalogue
- Trippers
- Ship to Shore
- Overland Systems
- Silos
- Intake feeders





A new addition to the ProStack Portfolio Manta is a market leading range of Standard, Heavy Duty and customized Environmental ship unloading hoppers.

Loaded with a crane and grab, Manta hoppers are a robust, reliable and efficient bulk handling solutions - customized to the product, terminal and specifications of our clients.

Manta loading hoppers are state-of-the-art bulk handling solutions for ports, logistics hubs and industrial applications. Designed to meet demands of a busy bulk terminal, the hoppers have proved more reliable, robust and better at controlling environmental dust than any other unloading hopper system on the market.

Manta loading hoppers are bespoke designed for each client and each application, to ensure they are made to meet the specific environmental requirements, and flow characteristics of the product being handled. With various chassis arrangements available the hoppers can be towed, have self-driving on wheels, be rail-mounted or static mounted, depending on the process and dock requirements. bulk handling.

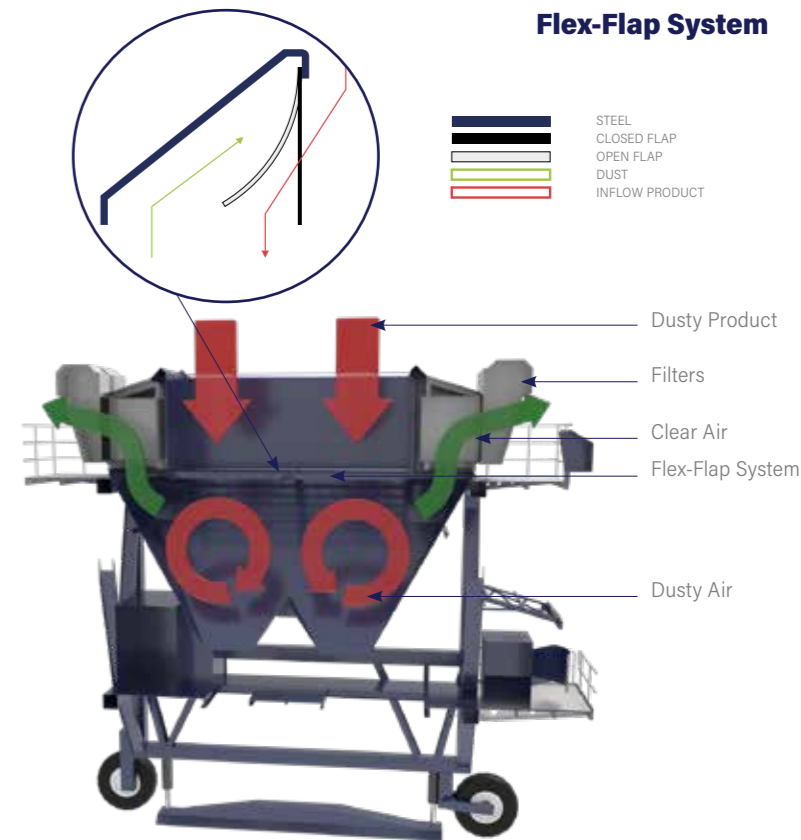


Extraction Filters

Dust extraction filters can be positioned along and underneath the hopper's thimble. These extractor filters suck air out of the hopper and thimble at a rate required to create significant negative air pressure, keeping the product and dust subdued inside the hopper structure, while removing the dust from the air being extracted.

The reverse-jet filter system collects dust from the extracted air in reusable filter bags, then periodically pulses compressed air through the filters to release the collected dust and return it to the product. The rate of air extraction and the filter cleaning pulse can be adjusted to economise on power and compressed air. The reverse-jet filter can even be set with a 'Delta(P)' controller, to vary the rate of filter emptying in accordance with the level of dust present in the extracted air.

Flex-Flap System



Shipping & Installation

All ProStack conveyors are fully prebuilt in factory, dry commissioned, broken down and and packed into 40ft high cube containers before dispatch. Plug and play electronics and hydraulics are used in conjunction with convenient bolt together steel sections, to allow for a streamlined erection on site.



Telematics

T-Link with ProStack

A number of ProStack products come fitted with telematics software called T-Link that remotely monitors your machine. T-Link is available online anywhere and at any time.

Fleet Management

From the fleet management fundamentals of knowing the hours and location of your machine to sending machine specific alerts and tracking machine production, telematics can help you remotely monitor and manage your ProStack fleet.

Monitor Performance

Telematics enable you to stay connected and keep track of your equipment, monitor work progress, manage logistics, access critical machine information, analyse and optimise machine performance and perform remote operator support.

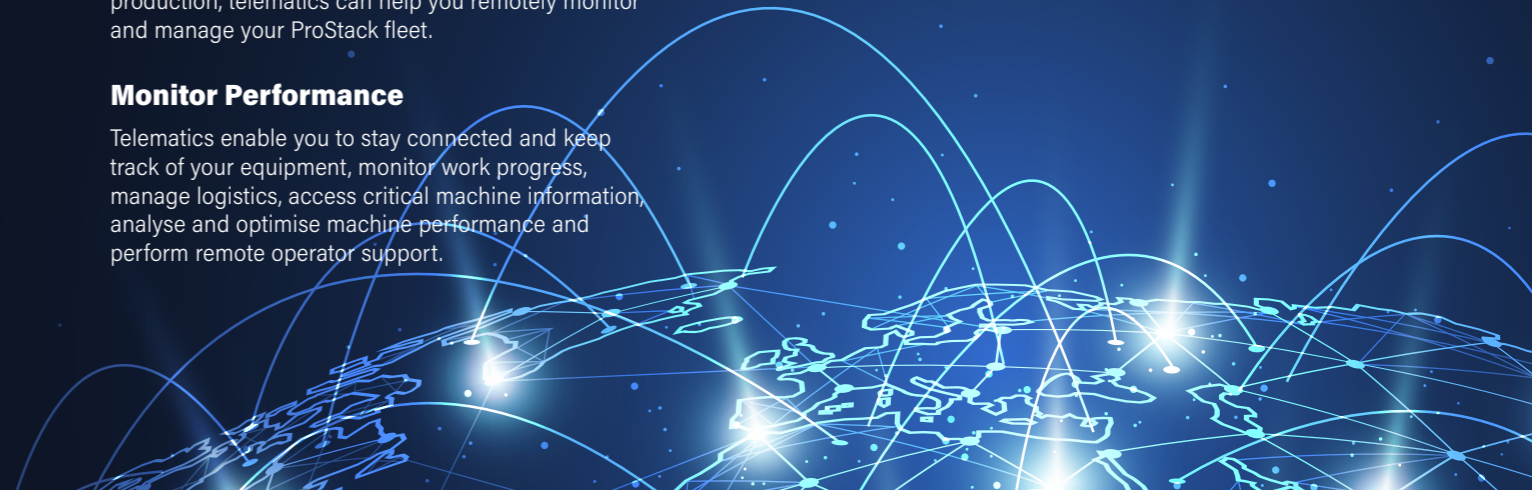


Add Security

Geo-fencing of a machines location prevents the conveyor from operating outside of the boundaries you set. T-Link can also prevent your conveyor from operating outside of the hours you set.

Enhanced Machine Uptime

Identify issues before they cause downtime and receive enhanced dealer support with machine tracking through T-Link.



Terex Financial Services



We are committed to working with our dealers and customers in developing and adding true value to their business and assisting in the acquisition and funding of their Terex equipment.

TFS offer global solutions and through a team of dedicated people who understand the needs of our dealers and customers, we can direct you to the correct financial solution for your business.

We have developed a Turnkey Funding solution to assist our dealer partners. This offer is designed to maximise a dealer's potential to develop their Terex Business.

- ✓ Terex Self-funding Capability
- ✓ Improved Working Capital Management
- ✓ Demonstration Programs
- ✓ Rental Purchase Schemes
- ✓ Stock Programs
- ✓ Programs are tailored by region through a panel of funders.

TFS offers a comprehensive suite of finance and leasing facilities for the end user.

The concept of adding value to your business is critical to us and this is why the TFS Team can assist you in developing the right solution for you.

These facilities can be developed and tailored to suit the individual needs of each customer.

We offer a wide range of facilities tailored by region:

- USA
- Canada
- EMEA
- JAPIC region

The range of facilities and services available are as follows:

ProStack Genuine Parts

Using our genuine parts means you will get the most out of your equipment:

- ✓ Guaranteed compatibility with our machines
- ✓ Superior quality
- ✓ Warranty protected
- ✓ Excellent customer support

Wide Range of Parts

A complete range of genuine spare parts are available for immediate dispatch from our \$7.2million purpose built global parts facility. All parts are competitively priced, of the highest quality and designed specifically for use on you ProStack™ equipment.

Always Use Genuine Terex® Parts

Only genuine Terex® parts guarantee the safety, proper functioning and reliability of your equipment. Terex® supply quality original parts to protect your investment and our knowledgeable product specialists help ensure you receive exactly what you need to get your equipment back on the job quickly and cost effectively.

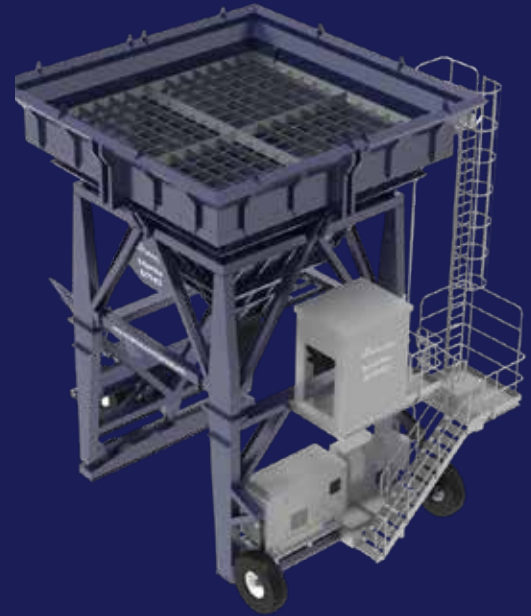




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