

# REACH STACKERS

**ROBUST, FLEXIBLE AND POWERFUL**



**WORKS FOR YOU.™**

# REACHING HIGH

## TEREX® REACH STACKERS

Terex Port Solutions (TPS) offers a comprehensive portfolio of logistics solutions and state-of-the-art cargo handling equipment including lift trucks of various types. Among these, Terex reach stackers stand for excellent performance and reliability combined with innovative design.

They offer versatile application possibilities for the handling of empty or full containers within demanding intermodal handling systems including harbour terminals, rail terminals, container depots and other logistical systems.

### Professional high-capacity handling

With durable Terex spreader systems, which are designed and manufactured inhouse, 20' to 40' containers can be handled and stacked to a height of six 9'6" high-cube containers – a stacking ability that can be found nowhere else in the market. Furthermore, our reach stackers can be equipped with a variety of lifting gear for the flexible handling of general and heavy project cargo.

Terex reach stackers fulfill the requirements of even the most difficult handling tasks, including high load capacities of up to 45 t under spreader and high working speeds while being easy to operate and safe.

### Easy, reliable and efficient operation

- ▶ **Excellent cargo handling rates thanks to high-performance and high lifting capacities, traveling and lifting/lowering speeds**
- ▶ **Easy handling and good maneuverability**
- ▶ **Very easy operation thanks to ergonomic design, innovative control systems and good operator visibility**
- ▶ **Long service life and reliability due to robust design and prime components**
- ▶ **Cost-effective operation due to modern, environmentally friendly drive technology and low maintenance expenses**

The robust and compact design of Terex reach stackers provides powerful container handling as well as excellent maneuverability between container stacks

### The range of Terex reach stackers

Types	Models	Wheelbases [mm]				Maximum container stacking heights			Main applications	
		5,150	6,000	6,500	7,000	5 x 9'6"	6 x 8'6"	6 x 9'6"	Full container	Empty container
TFC	TFC 45		✓			✓			✓	
	TFC 45 R		✓			✓			✓	
	TFC 45 M			✓		✓			✓	
	TFC 45 MR			✓		✓			✓	
	TFC 46 M DRY			✓			✓		✓	
	TFC 46 M			✓				✓	✓	
	TFC 46 MS			✓				✓	✓	
	TFC 46 MX			✓				✓	✓	
	TFC 46 MSX			✓				✓	✓	
	TFC 46 LS				✓		✓		✓	
	TFC 46 LX				✓		✓		✓	
	TFC 46 LSR				✓		✓		✓	
	TFC 46 LSX				✓		✓		✓	
CS	CS 7.5 S6	✓					✓			✓
	CS 45 KM		✓			✓			✓	





# HIGH-CAPACITY STACKING

## LOAD CHARTS FOR THE WHOLE RANGE

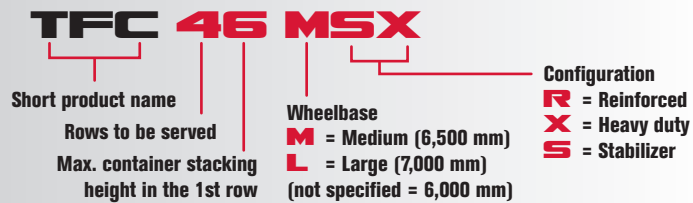
Terex® reach stackers are not only capable of stacking up to six high-cube containers (9'6") in the first row. Due to their compact design and rigid construction they also allow for high capacity stacking in the second and even the third container row.

The load charts lead you quickly to the Terex reach stacker type and model that suits your stacking capacity needs for standard (8'6") and high-cube (9'6") containers.

### TFC type

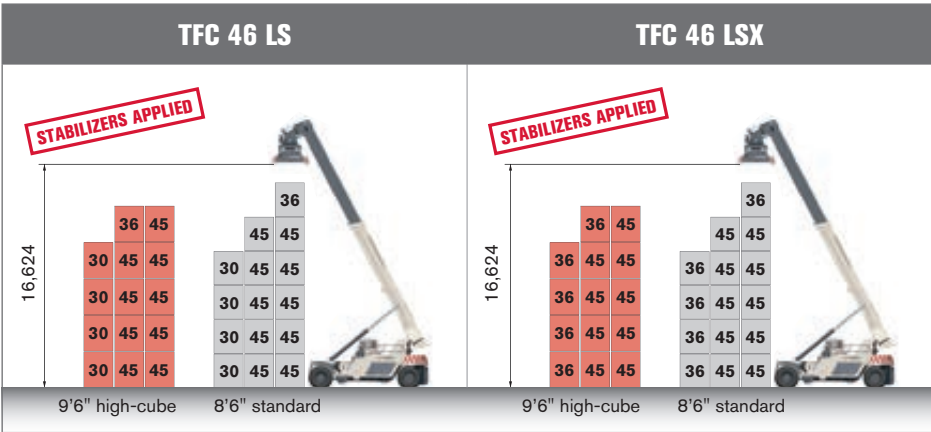
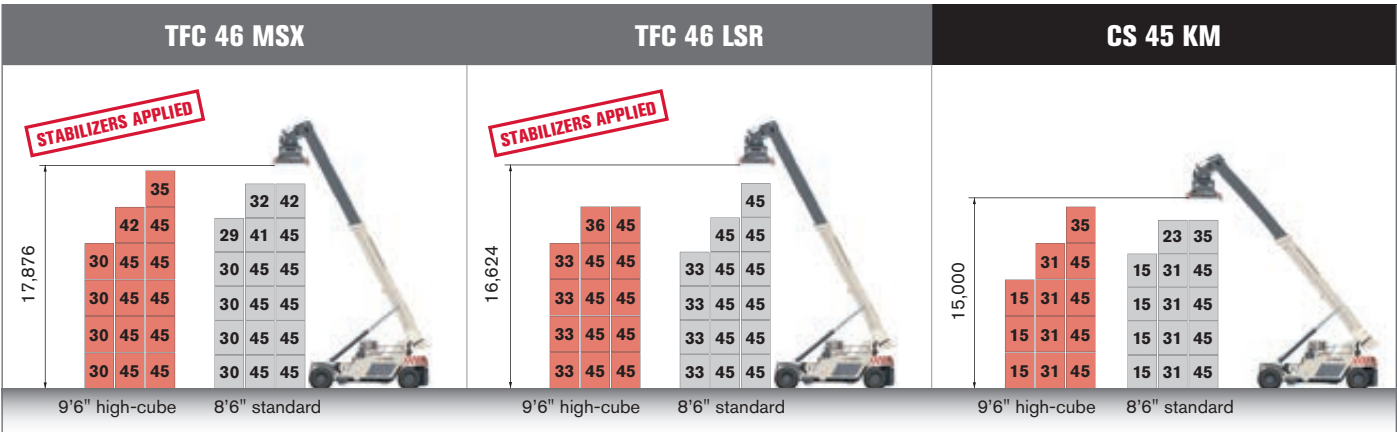
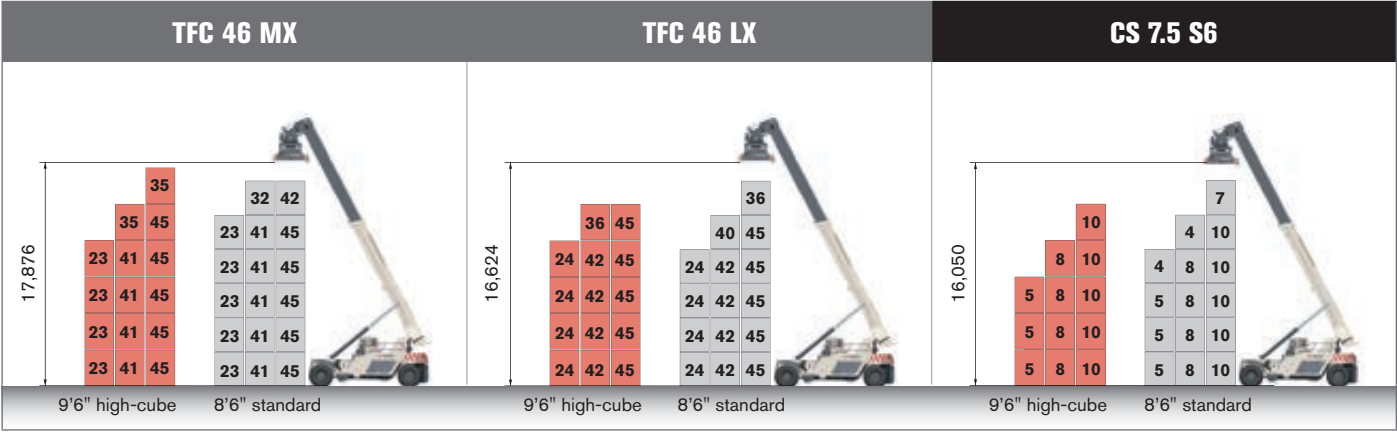
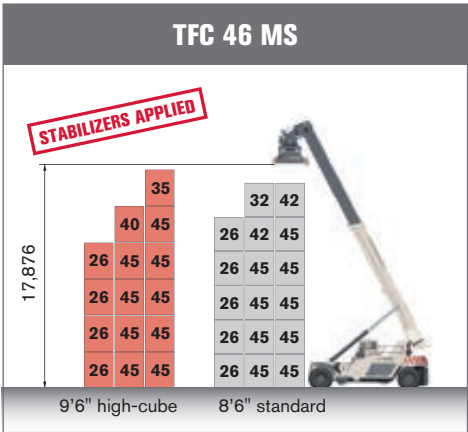
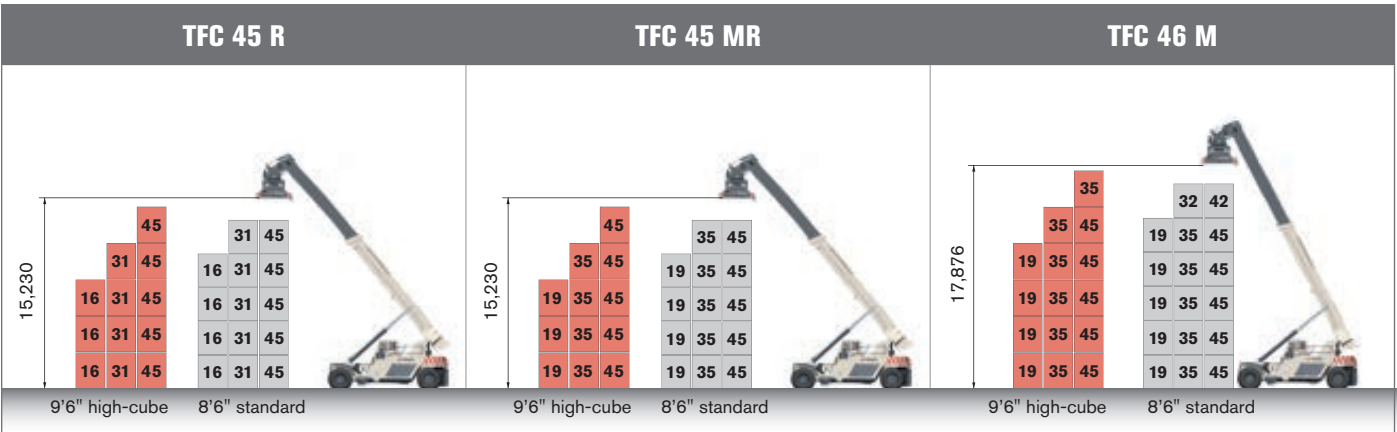
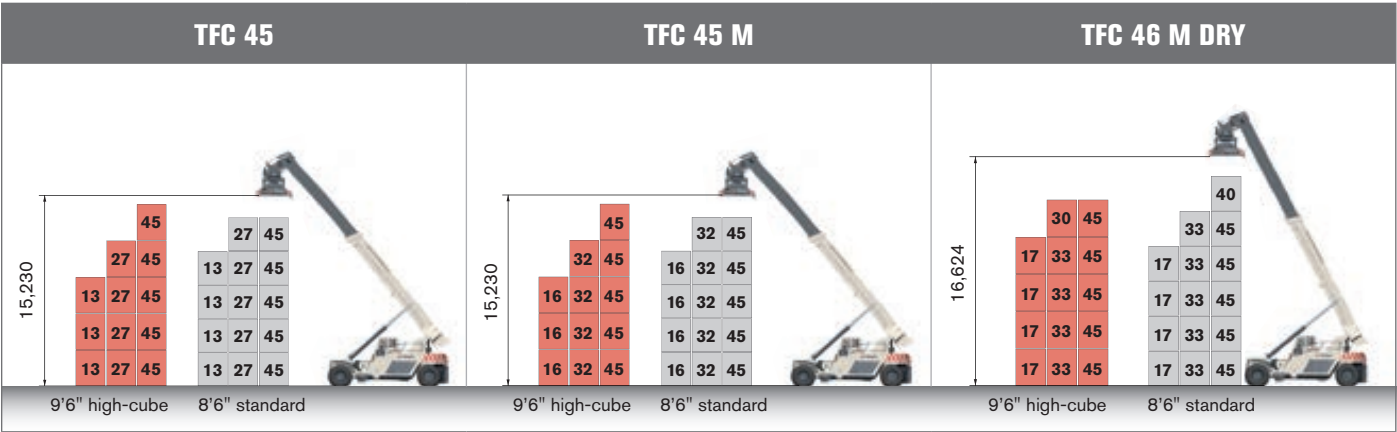
TPS provides thirteen TFC models that cover all requirements for professional container handling and stacking. They offer various lifting capacity ranges and include models with stabilizers (suffix S) to increase the lifting capacities in the 2nd and 3rd container row.

### EXAMPLE PRODUCT DESIGNATION TFC TYPE



### CS type

TPS offers two CS reach stackers: the CS 7.5 S6 is especially designed for empty container handling and the CS 45 KM is specifically designed for the regional requirements and regulations of the Asian market.



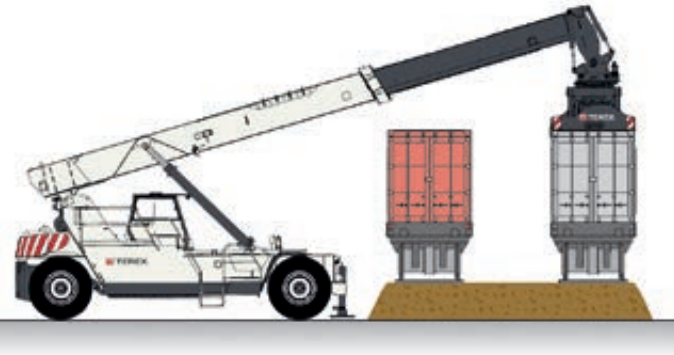
All dimensions in mm. All capacities in t.

# HIGH-OUTREACH HANDLING

## INTERMODAL OPERATION AT TRUCKS AND COACHES

All Terex® reach stackers feature excellent capabilities for intermodal handling in either coach or truck operation.

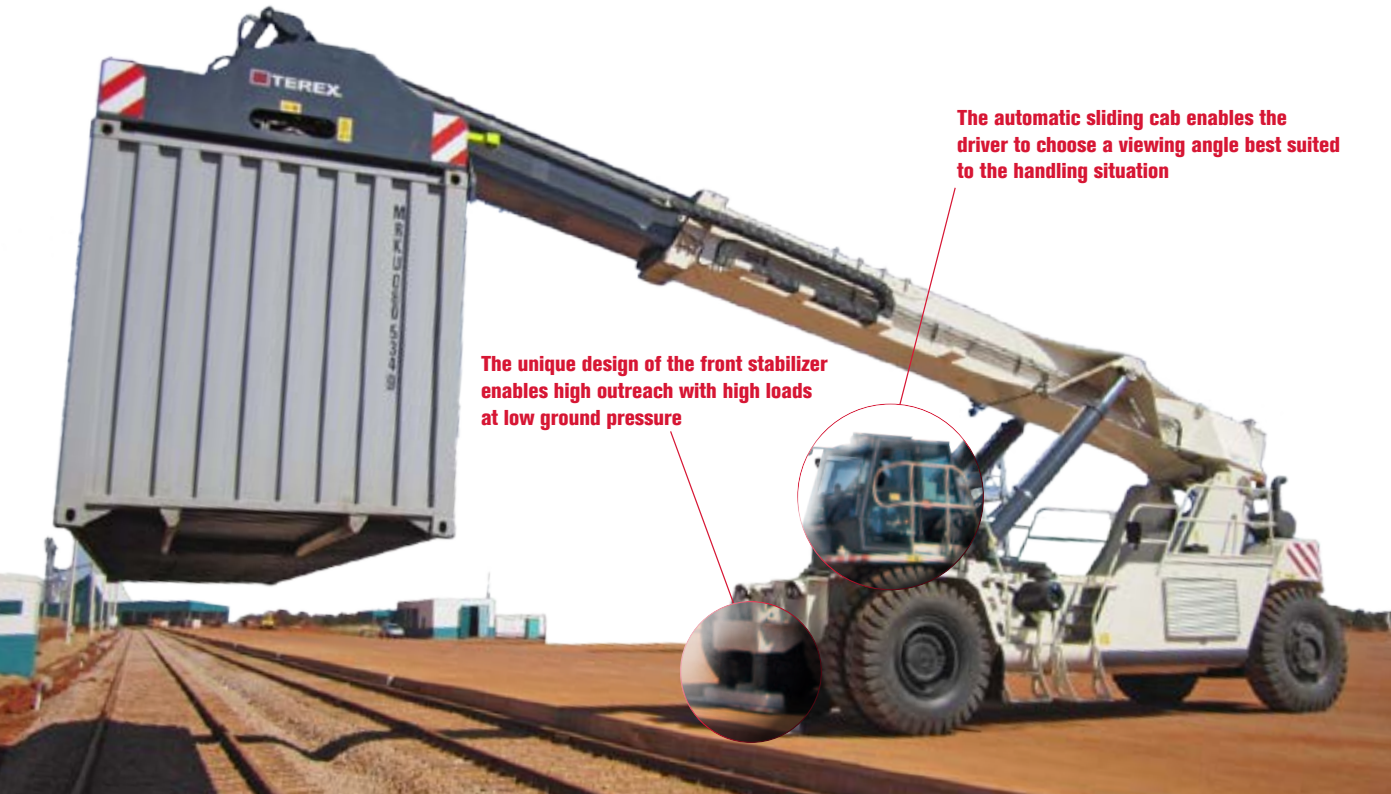
In addition, the automatic sliding cab, standard on TFC 46 L models, provides an even better view of the working area.



### Recommended models for intermodal handling

Models / Spreaders	TFC 45		TFC 45 R		TFC 46 MSX		TFC 46 LSX	
	Top pick	Piggyback	Top pick	Piggyback	Top pick	Piggyback	Top pick	Piggyback
Capacity at outreach*	45.0 t @ 2,460 mm	45.0 t @ 2,000 mm	45.0 t @ 2,460 mm	45.0 t @ 2,000 mm	45.0 t @ 4,500 mm	45.0 t @ 3,860 mm	45.0 t @ 4,500 mm	45.0 t @ 3,860 mm
	13.0 t @ 6,400 mm	8.0 t @ 6,400 mm	16.0 t @ 6,400 mm	10.0 t @ 6,400 mm	31.0 t @ 6,400 mm	27.0 t @ 6,400 mm	36.0 t @ 6,400 mm	31.0 t @ 6,400 mm
	9.0 t @ 7,500 mm	5.0 t @ 7,500 mm	12.5 t @ 7,500 mm	7.0 t @ 7,500 mm	25.0 t @ 7,500 mm	21.0 t @ 7,500 mm	29.0 t @ 7,500 mm	26.0 t @ 7,500 mm

\* Measured from front tires or stabilizer, if applicable



The automatic sliding cab enables the driver to choose a viewing angle best suited to the handling situation

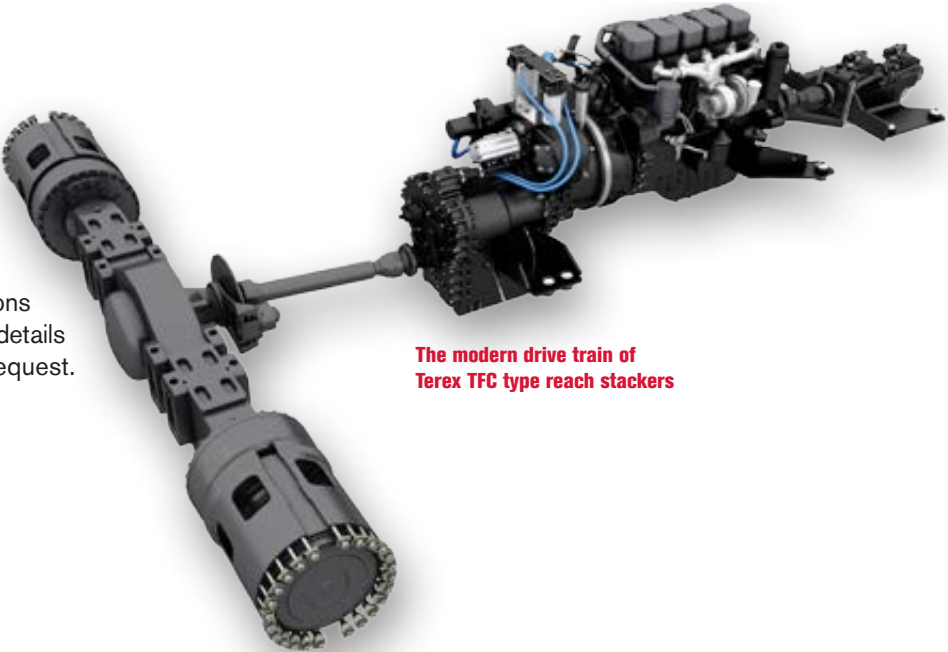
The unique design of the front stabilizer enables high outreach with high loads at low ground pressure

# EFFICIENT DRIVES

## TECHNICAL SPECIFICATIONS FOR ENGINES, TRANSMISSIONS AND MORE

Terex reach stackers offer excellent value with its modern drive train, which includes engines with low fuel consumption and low exhaust emissions combined with powerful hydraulics and first-class axle components.

Below is a list of engines and transmissions available for Terex reach stackers – more details and engine options are available upon request.



The modern drive train of Terex TFC type reach stackers

Models	Standard engines
TFC types	<b>Scania DC9 Tier 4i (Stage IIIB)</b> 257 kW @ 2,100 rpm 1,790 Nm @ 1,200 rpm
	<b>Cummins QSM11 Tier 3 (Stage IIIA)</b> 239 kW @ 1,800 rpm 1,478 Nm @ 1,500 rpm
	<b>Standard transmission</b>
	<b>Dana TE 27 418</b> Speeds, forward / reverse 4 / 4

Models	Standard engines
CS 7.5 S6	<b>Cummins QSB6.7 Tier 4f (Stage IV)</b> 194 kW @ 2,200 rpm 990 Nm @ 1,500 rpm
	<b>Cummins QSC8.3 Tier 3 (Stage IIIA)</b> 183 kW @ 2,200 rpm 1,162 Nm @ 1,500 rpm
	<b>Volvo TAD871VE Tier 4f (Stage IV)</b> 185 kW @ 2,200 rpm 1,150 Nm @ 1,500 rpm
	<b>Volvo TAD750VE Tier 3 (Stage IIIA)</b> 181 kW @ 2,300 rpm 1,050 Nm @ 1,500 rpm
	<b>Standard transmission</b>
	<b>Dana TE 17</b> Speeds, forward / reverse 3 / 3

Models	Standard engines
CS 45 KM	<b>Cummins QSM11 Tier 3 (Stage IIIA)</b> 250 kW @ 2,100 rpm 1,674 Nm @ 1,400 rpm
	<b>Standard transmission</b>
	<b>Dana 15.5 HR</b> Speeds, forward / reverse 4 / 4

All standard engines equipped with water cooling system.  
All standard transmissions equipped with hydraulic torque converter and automatic powershift control.

Models	TFC types	CS	
		7.5 S6	45 KM
Driving axles			
Make	Kessler D102	Kessler D91	Kessler D102
Type		2-stage hub reduction	
Reduction	22.6 or 25.4	19.8	30.2
Braking system	Maintenance free wet disc brakes		
Hydraulic systems			
Main system	Load sensing control	Load sensing control	Load sensing control
Main pump	Variable displacement double piston pump	Gear pump	Two double gear pumps
Max. working pressure [bar]	320	230	250
Tank capacities			
Hydraulic oil [l]	750	520	850
Fuel [l]	700	330	580
Diesel Exhaust Fluid (DEF) [l]	38	19-25*	n/a

\* Depending on engine type



# HIGH LOADS, HIGH SPEEDS

## TECHNICAL SPECIFICATIONS FOR CAPACITIES, SPEEDS, WEIGHTS AND MORE

Terex® reach stackers offer high handling performance and reduced operating costs thanks to modern design and components. The technical specifications provide detailed information about stacking capacities, speeds, weights and other technical data.



Models	TFC 45				TFC 46	
	h/hc *	R h/hc *	M	MR	M DRY	M
Capacities						
With front stabilizers (if yes, stacking abilities are with stabilizer applied)						
Maximum stacking height, 1 <sup>st</sup> / 2 <sup>nd</sup> / 3 <sup>rd</sup> row						
– 8'6" standard container	5 / 5 / 4		5 / 5 / 4		6 / 5 / 4	6 / 6 / 5
– 9'6" high-cube container	5 / 4 / 3		5 / 4 / 3		5 / 5 / 4	6 / 5 / 4
Maximum capacity, 1 <sup>st</sup> / 2 <sup>nd</sup> / 3 <sup>rd</sup> row						
– 8'6" and 9'6" container	[t]	45 / 27 / 13	45 / 31 / 16	45 / 32 / 16	45 / 35 / 19	45 / 33 / 17
Maximum speeds						
Lifting						
– laden	[m/s]	h: 0.25 / hc: 0.26		0.25	0.31	
– unladen	[m/s]	h: 0.34 / hc: 0.40		0.40	0.48	
Lowering						
– laden	[m/s]	0.50		0.50	0.60	
– unladen	[m/s]	0.55		0.55	0.55	
Traveling						
– laden	[km/h]	25		25	25	
– unladen	[km/h]	25		25	25	
Weights						
Maxium static axle load, front / rear						
– laden (boom α = 45°)	[t]	86.7 / 26.6	86.5 / 30.1	83.6 / 30.0	83.5 / 33.5	84.2 / 30.8
– unladen (boom α = 25°)	[t]	36.0 / 32.3	35.8 / 35.8	34.3 / 34.3	34.2 / 37.8	33.9 / 36.1
Dead weight (unladen, with standard top pick spreader)	[t]	68.3	71.6	68.6	72.0	70.0
Wheels and tires						
Tire size	18.00-25		18.00-25		18.00-25	
Rim size	13.00-25		13.00-25		13.00-25	
No. of wheels, front (driven) / rear	4 / 2		4 / 2		4 / 2	
Additional data						
Drawbar pull with standard engines						
– Tier 4i (Stage IIIB) / Tier 4f (Stage IV)	[t]	30.6		30.6	30.6	
– Tier 3 (Stage IIIA)	[t]	28.9		28.9	28.9	
Maximum gradeability with Tier 4i (Stage IIIB) / Tier 4f (Stage IV)						
– laden	[%]	26.6	26.2	26.6	26.2	26.2
– unladen	[%]	44.8	42.7	44.8	42.7	41.0
Maximum gradeability with Tier 3 (Stage IIIA) standard engines						
– laden	[%]	24.8	24.5	24.8	24.5	24.5
– unladen	[%]	42.0	40.0	42.0	40.0	39.0

\* TFC 45 and TFC 45 R are available with hydraulic (h) or electronic (hc) controls. All other models are equipped with electronic (hc) controls.

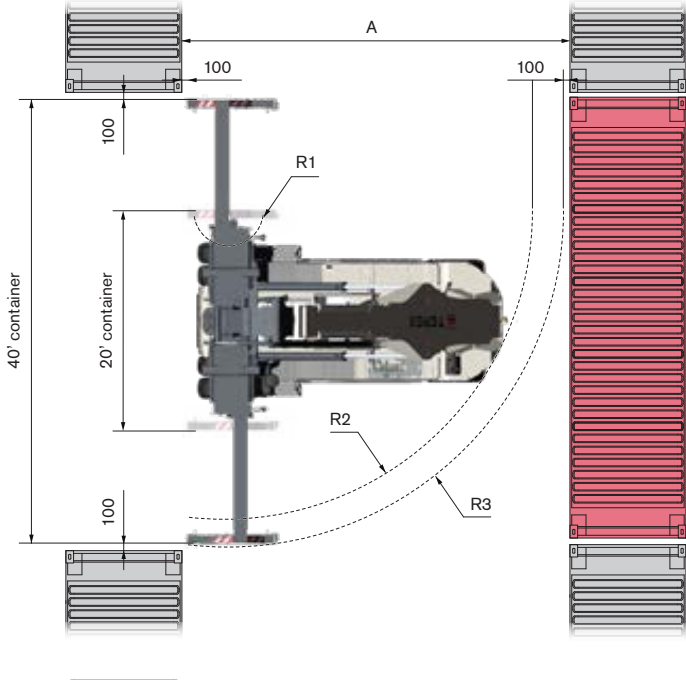
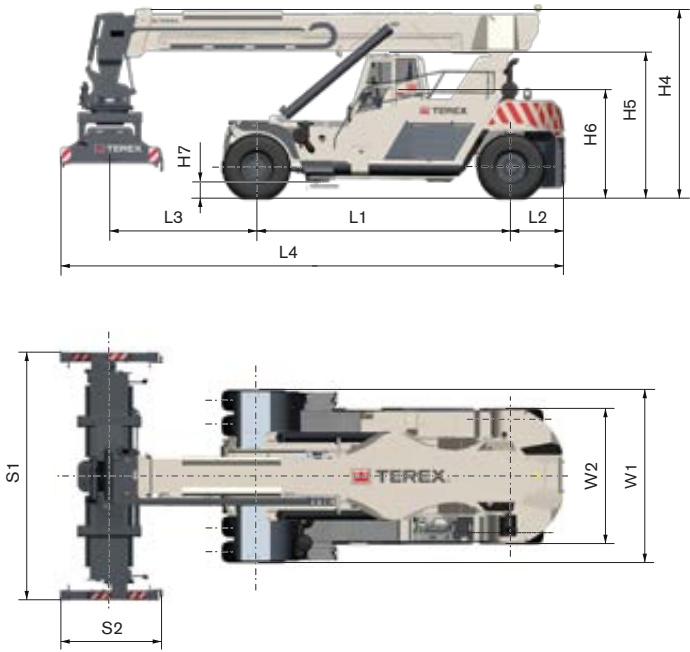
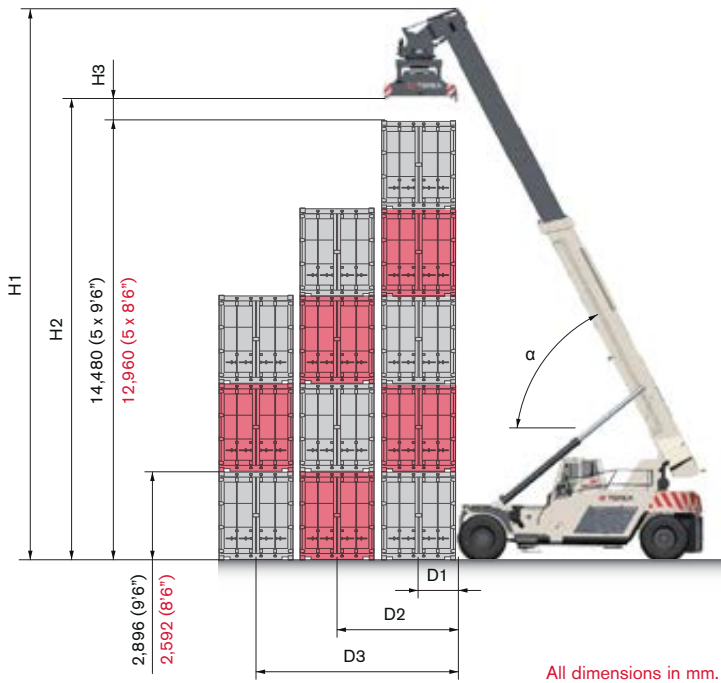
TFC 46							CS	
MS	MX	MSX	LS	LX	LSR	LSX	7.5 S6	45 KM
✓		✓	✓		✓	✓		
6 / 6 / 5			6 / 5 / 4				6 / 5 / 4	5 / 5 / 3
6 / 5 / 4			5 / 5 / 4				5 / 4 / 3	5 / 5 / 3
45 / 45 / 26	45 / 41 / 23	45 / 45 / 30	45 / 45 / 30	45 / 45 / 24	45 / 45 / 33	45 / 45 / 36	10 / 8 / 5	45 / 31 / 15
0.31			0.28				0.44	0.20
0.48			0.46				0.50	0.30
0.60			0.58				0.38	0.20
0.55			0.50				0.57	0.35
25			25				25	15
25			25				28	18
93.8 / 30.1	87.0 / 32.5	84.7 / 39.8	85.2 / 33.3	82.6 / 44.1	85.0 / 37.8	84.9 / 40.6	35.5 / 15.0	89.0 / 31.0
34.1 / 44.8	38.1 / 36.4	34.5 / 45.0	39.0 / 34.5	36.4 / 45.3	38.8 / 39.0	38.7 / 41.8	25.0 / 15.5	39.5 / 35.5
78.9	74.5	79.5	73.5	81.7	77.8	80.5	40.5	75.0
18.00-25	18.00-33		18.00-25	18.00-33			14.00-24	18.00-25
13.00-25	13.00-33		13.00-25	13.00-33			10.00-24	13.00-25
4 / 2			4 / 2				4 / 2	4 / 2
30.6			30.6				14.9	n/a
28.9			28.9				14.9	30.0
25.5	24.5	25.2	24.5	24.2	24.8	25.0	32.0	n/a
40.5	38.0	37.5	41.0	37.0	38.0	37.5	35.0	n/a
24.2	22.3	23.0	24.5	22.0	24.2	22.5	32.0	19.0
38.5	36.5	36.0	39.0	35.0	36.5	36.0	35.0	20.0

# COMPACT DESIGN

## MAIN DIMENSIONS

The compact design of Terex® reach stackers allows for flexible and powerful handling combined with excellent maneuverability between container stacks.

On this page, you will find a comprehensive overview of the entire Terex reach stacker model range allowing you a precise planning of your operations.



Models		TFC 45				TFC 46	
		h/hc	R h/hc	M	MR	M DRY	M
Heights							
H1	Max. boom height, 1 <sup>st</sup> row	[mm]	18,530		18,530	19,924	21,106
H2	Max. lifting height under twistlocks, 1 <sup>st</sup> row	[mm]	15,230		15,230	16,624	17,806
Lifting height clearance <sup>1)</sup>							
H3	– 8'6" standard containers	[mm]	2,270		2,270	1,072	2,254
	– 9'6" high-cube containers	[mm]	750		750	2,144	430
H4	Minimum boom height	[mm]	4,530		4,530	4,256	4,256
H5	Cab height	[mm]	3,600		3,600	3,600	3,600
H6	Driver seat height	[mm]	2,600		2,600	2,600	2,600
H7	Ground clearance (unladen)	[mm]	320		320	320	320
Widths							
W1	Front	[mm]	4,190		4,190	4,190	
W2	Rear	[mm]	3,345		3,345	3,345	
Lengths							
L1	Wheelbase	[mm]	6,000		6,500	6,500	
L2	Rear overhang	[mm]	1,300		1,300	1,300	
L3	Min. distance driving axle center to load center	[mm]	3,450		2,950	3,625	4,025
L4	Overall length	[mm]	11,950		11,950	12,630	13,030
Distances							
D1	From tires to load center (1 <sup>st</sup> row) <sup>2)</sup>	[mm]	1,320		1,320	1,320	
D2	From tires to load center (2 <sup>nd</sup> row) <sup>2)</sup>	[mm]	3,860		3,860	3,860	
D3	From tires to load center (3 <sup>rd</sup> row) <sup>2)</sup>	[mm]	6,400		6,400	6,400	
Other dimensions							
α	Maximum boom angle	[°]	62		62	65	
90° stacking aisle							
A	– 20' containers	[mm]	10,210		10,640	10,640	
	– 40' containers	[mm]	12,830		12,830	12,830	
R1	Internal turning radius	[mm]	1,840		2,030	2,030	
R2	Rear turning radius	[mm]	8,700		9,150	9,150	
External turning radius							
R3	– 20' containers	[mm]	7,400		7,400	7,400	
	– 40' containers	[mm]	10,420		10,420	10,420	
Terex® Spreader							
S1	Length	[mm]	6,072		6,072	6,072	
S2	Width	[mm]	2,400		2,400	2,400	

TFC 46							CS	
MS	MX	MSX	LS	LX	LSR	LSX	7.5 S6	45 KM
21,106	21,176		19,924	19,994			18,500	18,000
17,806	17,876		16,624	16,694			16,050	15,000
2,254	2,324		1,072	1,142			498	2,040
430	500		2,144	2,214			1,570	520
4,256	4,596		4,526	4,596			4,300	5,315
3,600	3,670		3,600	3,670			3,200	3,890
2,600	2,670		2,600	2,670			2,200	2,700
320	390		320	390			450	450
4,190			4,190			4,500	4,200	
3,345			3,345			2,500	3,300	
6,500			7,000			5,150	6,000	
1,300			1,300			1,200	1,250	
4,025			3,510			3,800	2,950	
13,030			13,030			11,370	11,370	
1,320			1,320			1,300	1,380	
3,860			3,860			3,840	3,920	
6,400			6,400			6,380	6,460	
65			65			67	60	
10,640			11,020			11,300	11,300	
12,830			12,830			14,200	13,650	
2,030			2,300			1,800	1,500	
9,150			9,600			7,850	8,400	
7,400			7,500			7,900	8,200	
10,420			10,520			10,200	10,200	
6,072			6,072			6,050	6,050	
2,400			2,400			2,440	2,440	

# SUITED TO YOUR NEEDS

## STANDARD AND OPTIONAL EQUIPMENT

Terex® reach stackers are well-equipped in standard configuration. In addition, TPS offers a comprehensive range of optional equipment and features to configure your Terex reach stacker precisely to your needs, helping you to further increase the operability and efficiency of the machine.

### USER-FRIENDLY CONTROL SYSTEM

The control system offers a user-friendly interface with access to intelligent features for economic and easy operation.

The clearly arranged graphics display provides the driver with useful information.



### Terex® top pick spreader

The Terex top pick spreader combines low weight with high performance.

- ▶ **Telescoping**
  - Beams extended by simultaneous chain drive
  - 20' to 40' within 12 s
  - Automatic stop at 30' \*
- ▶ **Slewing**
  - +210/-125° within 65 s
- ▶ **Side shift**
  - Guided by steel rollers
  - +/- 800 mm within 15 s
- ▶ **Pile slope**
  - Free: +/- 4°
  - Powered: +/- 5° (option)
- ▶ **Other features**
  - 4 x 12 t sling eyes (option: 8 x 12 t)
  - Container guides (option)
  - Weight: 8 t



\* Option for models TFC 45 h and TFC 45 R h

### Equipment

Section	Standard	Option
<b>Control systems</b>		
<b>IQAN-MD3 for TFC types <sup>1)</sup></b> <ul style="list-style-type: none"><li>– 3.5" TFT color display</li><li>– Displayed values: boom length, angle and radius; hydraulic flows and pressures</li><li>– Internal memory capacity of 80,000 records</li></ul>	✓	
<b>Logitex for CS 7.5 S6 <sup>2)</sup></b> <ul style="list-style-type: none"><li>– 4.3" TFT color display</li><li>– Operative and diagnostic black box</li><li>– Automatic boom lifting with vertical spreader position control</li><li>– Eco-Power fuel saving mode</li></ul>	✓	
Record transfer system		✓
Auto-diagnostic function	✓	
Load measurement	✓	
Anti-tipping device	✓	
Rear parking sensors		✓
Rear camera		✓
Full vision system (4 cameras)		✓
<b>Cab</b>		
Ergonomically designed, soundproofed Noise level: TFC types ≤ 70 dB(A) CS types ≤ 76 / 85 dB(A)	✓	
Automatic sliding (hydraulically driven) <sup>3)</sup>		✓
<b>High comfort seat</b>		
– with mechanical suspension	✓	
– with pneumatic suspension		✓
Driver seat belt		✓
Trainer seat		✓
Air conditioning and heating system	✓	
CD audio system <sup>4)</sup>	✓	

Section	Standard	Option
<b>Spreader and lifting gear</b>		
Telescopic top pick spreader 20' / 40'	✓	
ISO and wide top pick (WTP) container spreader		✓
Piggyback spreader		✓
Multistacker configuration via an universal coupling for various lifting gear such as hooks, forks, coil mandrels and many more		✓
<b>Additional design features</b>		
<b>Lighting</b>		
– Bulb traffic and working lights	✓	
– LED traffic and working lights		✓
– Additional LED working lights		✓
<b>Tires</b>		
– Tubeless pneumatic tires	✓	
– Plain tread tires		✓
– Spare tire		✓
– Tire pressure display		✓
<b>Others</b>		
– Automatic lubrication system for chassis, boom and spreader		✓
– Low temperature kit		✓
– Fire suppression system		✓
– Heated rear view mirrors		✓

<sup>1)</sup> Option for model TFC 45 h  
<sup>2)</sup> Data of CS 45 KM model on request  
<sup>3)</sup> Standard for all TFC 46 L models  
<sup>4)</sup> Option for models TFC 45 h and TFC 45 R h

More information about additional options on request.



### Spacious and ergonomically designed driver cab

In combination with the clearly arranged chassis, the spacious driver cab offers an excellent view. For efficient and safe work without fatigue: seat, steering wheel and pedal set feature various setting options to adapt driver.





# FOR ALL YOUR APPLICATIONS

## SOLUTIONS FOR CONTAINER, GENERAL AND PROJECT CARGO HANDLING

Besides the Terex® standard top pick spreader, TPS also offers wide top pick (WTP) and piggyback spreaders allowing to master various container standards as well as demanding intermodal handling with ease.

### Piggyback spreader for intermodal handling

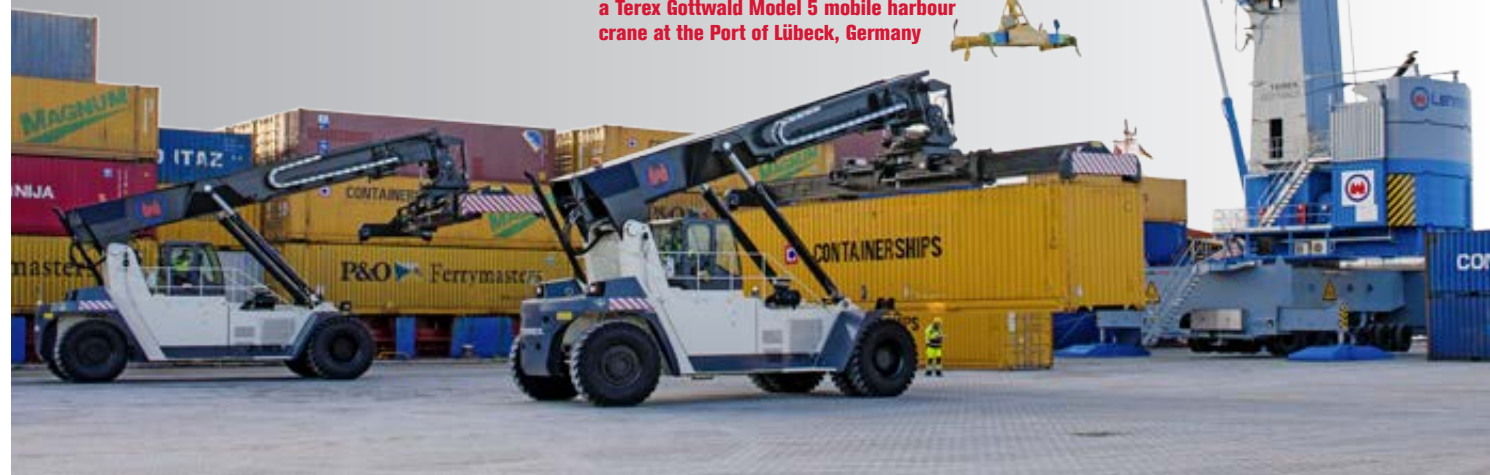


Terex reach stackers interact with a Terex Gottwald Model 5 mobile harbour crane at the Port of Lübeck, Germany

## EFFICIENT TEAMWORK

From loading and unloading, to transport, stacking and handling – combining Terex® Gottwald harbour cranes with Terex® reach stackers is a flexible solution for covering the entire cargo handling chain in terminals.

- ▶ Flexible container handling equipment from one single source
- ▶ Harmonized technology base
- ▶ Combined maintenance and service offer



### Versatile cargo transport

Terex reach stackers are excellent tool carriers when equipped with the proper attachment. Safely and efficiently, they manage the handling of heavy and bulky goods in various industries like steel, wood, wind power and concrete precast industry.

Terex reach stackers can also be equipped with matching lifting equipment, including:

- ▶ hooks,
- ▶ C hooks for coil handling,
- ▶ magnetic or
- ▶ scissor-type grabs.

### More flexibility with multistacker configuration

The optional multistacker configuration allows the flexible mounting of various lifting devices via a universal coupling at the top of the boom. A convenient feature, for example, in the steel industry when different semi-finished products have to be handled.





# IN THE BEST OF HANDS

## FULL LIFE CYCLE SUPPORT

For all its port technology products, TPS offers reliable, worldwide, customer-oriented service. This means that our machines are maintained at the highest possible level of availability while securing the value of your investments.

We have a dedicated, integrated, reliable service network that provides professional troubleshooting to support you efficiently. When you purchase a product bearing the Terex® or Terex® Gottwald brand, we provide a contact responsible in your region. This helps overcome language barriers and time zones and provides help quickly whenever needed.



[www.terexportsolutions.com](http://www.terexportsolutions.com)

Effective date: February, 2015. Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this document are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or otherwise failure to act responsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and Terex Port Solutions makes no other warranty, express or implied. Terex, the Terex Crown design, Terex Gottwald and Works For You are trademarks of Terex Corporation or its subsidiaries. All other trademarks are property of their respective owners. © 2015 Terex Corporation.

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