# PRODUCT SPECIFICATION



**TWH 216 TWH 226** 

**TWH 220 TWH 228** 

**TWH 224 TWH 236** 

**WASTE HANDLERS** 







### **OVERVIEW**



#### **TWH 216**

Greater mobility and flexibility

Service weight: 14.6-17.1 t Engine power: 85 kW Reach: max. 9.0 m

04



#### **TWH 220**

Outstanding visibility and performance

Service weight: 19.3-21.0 t Engine power: 95 kW Reach: max. 10.4 m



#### **TWH 224**

The all-rounder, incorporating turbo efficiency

Service weight: 22.8-24.5 t Engine power: 115 kW Reach: max. 11.0 m

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#### **TWH 226**

Greater reach. Higher load capacity. Higher speeds.

Service weight: 23.9-25.5 t Engine power: 115 kW Reach: max. 11.0 m



#### **TWH 228**

Well-thought-out machine for more power and reach while retaining compact dimensions.

Service weight: 28.4-30.6 t Engine power: 129 kW



#### **TWH 236**

Designed especially for high performance, lifting capacity and maximum reliability.

Service weight: 33.0-35.5t Engine power: 160 kW Reach: max. 15.0 m

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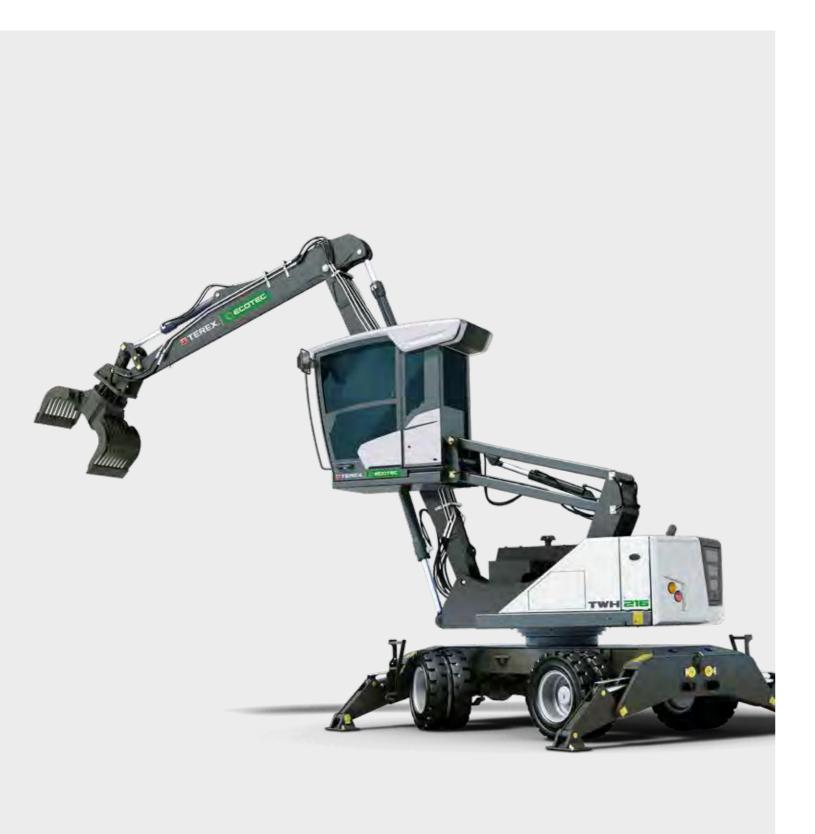
# **DYNAMIC DUO FOR HIGH-CLASS RECYCLING PROCESSES**



# **COMPLETE RECYCLING SOLUTIONS**







# GREATER MOBILITY AND FLEXIBILITY.

Robustness does not necessarily have to do with size, the **TWH 216** is compact and agile. It is the uncompromising response to the ever increasing demands of the recycling industry.

TWH 216	14.6-17.1 t
Diesel engine	
Manufacturer and model	Deutz TCD 3.6 L04
Design	4-cylinder in-line engine
Functionality	4-cycle diesel, common rail direct injection, turbocharged with intercooler, controlled exhaust gas recirculation, diesel particulate filter with continuous regeneration and SCR catalytic converter
Engine power	85 kW
Rated speed	2,000 rpm
Displacement	3.61
Cooling system	Water and charge air cooling with temperature controlled fan speed
Exhaust emission standard	EU-Stage V
Fuel tank	180 l Diesel
DEF / Urea tank	10 l AdBlue
Electrical system	
Alternator	24 V / 95 A
Operating voltage	24 V
Battery	2 × 12 V / 110 Ah
Lighting system	$2\times \text{LED}$ headlamps, turn indicators and tail lights
Travel drive	
-	finitely variable axial piston motor with directly mounted manual gearshift, 4-wheel drive
Travel speed 1st gear	max. 5 kph
Travel speed 2nd gear	max. 19 kph
Gradeability	max. 40%
Turning radius	7.1 m
Turning radius with all-wheel steering	4.5 m
Swing Drive	
Drive	2-stage planetary gear with integrated multi-disc brake
Uppercarriage swing speed	0-8 rpm variable
Slewing lock	Electrically activated

Front axle	Planetary drive axle with integrated drum brake, rigidly mounted, max. steering angle: 30°
Rear axle	Oscillating planetary drive rear axle with selectable oscillating lock
Outriggers	4-point stabilisers 2-point-stabilisers with support blade
Tyres	9.00-20 pneumatic tyres without intermediate ring
Brakes	
Service brake	Hydraulically operated single-circuit braking system (drum brakes)
Parking brake	Electrically operated spring-loaded disc brake at transmission, acting on both front and rear axle
Hydraulic system	
Max. pump capacity	190 + 90 lpm
Max. operating pressure	350 bar
Hydraulic oil tank	1351
Operator's Cab	
Cab	Infinitely variable hydraulic height-adjustment with eye level up to 5.3 m above ground
	Sound-deadened, ample thermal panoramic glass windows, windshield with pull-down sunblind, viewing window on cab roof, sliding window in cab door, sliding door
Air conditioning	Automatic air-conditioning. Hot water heating with variable temperature control and 8-speed fan, 10 adjustable air nozzles, including 4 in the roof lining, 3 defroster nozzles
Operator's seat	Air-cushioned comfort seat with integrated headrest, safety belt and lumbar support, optional seat heating. Comfortable operation with multi-purpose adjustment options for seat position, seat inclination, seat cushion placement in relation to armrests and pilot control units. Articulating armrests and joysticks
Monitoring	Ergonomic layout, anti-glare instrumentation. Multi-function display, automatic monitoring and recording of abnormal operating conditions (including all hydraulic oil filters, hydraulic oil temperature (cold/hot), coolant temperature and charge air temperature, diesel particulate filter load), visual and audible warning indication with shutdown of pilot controls/engine power reduction. Diagnosis of individual sensors possible via the multifunction display. Rear view camera and side view camera
Noise level	Sound power level (ambience) $L_{WA}$ 98.7 dB(A) (metreed) acc. to directive 2000/14/EC $L_{WA}$ 100 dB(A) (guaranteed) acc. to directive 2000/14/EC Sound pressure level (inside the cabin) acc. to standard ISO 6396 $L_{_{DA}}$ 76 dB(A)

Engine	Standard	Opti
Intercooler and coolant radiator	•	
Direct electronic fuel injection / common rail	•	
Advanced automatic idle incl. engine shut-off function	•	
Diesel particle filter	•	
Engine diagnostics interface	•	
Temperature-dependent fan drive	•	
Undercarriage		
All-wheel drive	•	
Drum brakes	•	
Rear axle oscillating lock	•	
4-point stabilisers	•	
Dozer blade in addition to 4-point stabilisers		•
2-point stabilisers and support blade		•
Stabiliser cylinders with integrated two-way check valves	•	
Piston rod protection on stabiliser cylinders	•	
Travel drive protection		•
Tool box	•	
Central lubrication point		•
Special paint (customer paint work)		•
Pneumatic tyres 9.00-20 without intermediate ring	•	
Solid rubber tyres 10.00-20 (Magnum) (2 L)		•
Solid rubber tyres 10.00-20 with intermediate ring (Solideal)		•
Uppercarriage		
Central lubrication point	•	
Cooling system with temperature-dependent fan drive	•	
Fan drive reversing function	•	
Separate cooling system for engine and hydraulic oil cooler	•	
Rear view camera	•	
Side view camera	•	
Special paint (customer paint work)		•

Cab	Standard	Option
Hydraulic height-adjustable cab system (max. viewing height of 5.3 m)	•	
Safety glass	•	
Sliding window in cab door	•	
Windshield washer system (Windshield)	•	
Roof washer system(Skylight)		•
Air-cushioned operator seat with headrest, seatbelt, and lumbar support	•	
Seat heating		•
Joystick steering	•	
Steering column, height and tilt adjustable		•
Automatic air conditioning system	•	
Independent heating system		•
Multi-function display	•	
Document net	•	
Roof guard grille (FOPS)		•
Protective grilles to front and roof		•
12 V transformer		•
Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)	•	
12 V socket		•
Fire extinguisher, dry powder		•
Travel alarm w/ rotating beacon		•
Other Equipment		
Joysticks with inductive driver recognition		•
Close proximity range limiter for dipper stick	•	
Coolant and hydraulic oil level monitoring system	•	
Overload and working range monitoring		•
Hose rupture valve for boom cylinder		•
Hose rupture valve for stick cylinder		•
Quick coupling on dipper stick	•	
Overload warning device		•
Active cyclone prefilter (TOP AIR)		•
Hydraulic oil preheating		•
Light packages LED		•
LED front headlights	•	
LED working lights cabin roof front	•	
Boom cylinder damping system (piston accumulator)		•
Fuchs Telematics System, incl. 2 years service	•	

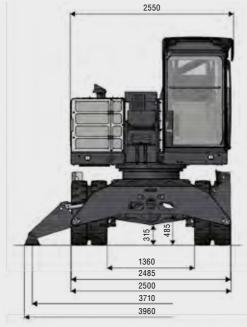
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Further optional equipment available on request! Specification subject to change without notice.

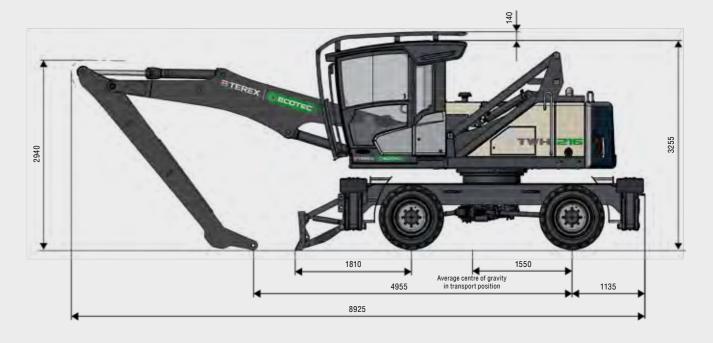


#### Undercarriage equipped with 4-point stabilisers





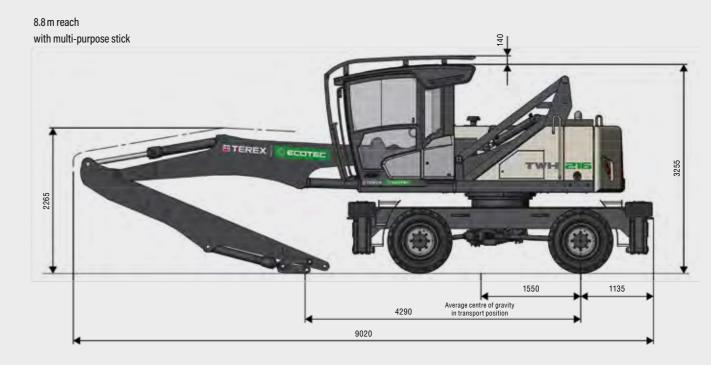
### 9.0 m reach with dipper stick



#### 2-point stabilisers and support blade











#### 9.0 m reach with dipper stick

#### **Loading equipment**

Boom 4.7 m

Dipper stick 3.3 m

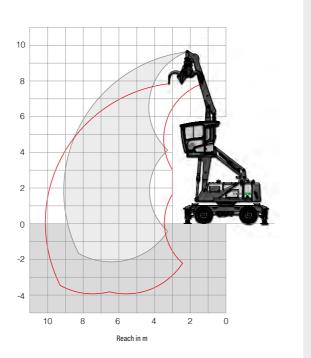
Cactus grab (Lightweight material) 0.56 m<sup>3</sup>

**Recommended attachments** 

Multi-tine grapple (lightweight material) up to 0.56 m<sup>3</sup>

Depending on density of goods

The lift capacity values are stated in metric tons (t). The pump pressure is 350 bar. In accordance with ISO 10567 The lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked \*). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hook, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for the lifting application of the lifting load of the lifting levice must be observed. In accordance with the EN 474-5 for the lifting application of the lifting levice must be observed. object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.



Height [m]	Undercarriage		Reach [m]			
	stabilisation	4.5	6	7.5	9	
	Without stabilisers	(3.4°)				
9	With 4-pt stabilisers	3.4° (3.4°)				
	With 2-pt / support blade	3.4° (3.4°)				
	Without stabilisers	(3.0°)	(2.7°)			
7.5	With 4-pt stabilisers	3.0° (3.0°)	3.0° (3.0°)			
	With 2-pt / support blade	3.0° (3.0°)	3.0° (3.0°)			
	Without stabilisers	(2.4°)	(2.7°)	(1.8°)		
6	With 4-pt stabilisers	2.4° (2.4°)	2.8° (2.8°)	2.7° (2.7°)		
	With 2-pt / support blade	2.4° (2.4°)	2.8° (2.8°)	2.4° (2.7°)		
	Without stabilisers	(2.4°)	(2.6°)	(1.8°)		
4.5	With 4-pt stabilisers	2.4° (2.4°)	2.9° (2.9°)	2.7° (2.7°)		
	With 2-pt / support blade	2.4° (2.4°)	2.9° (2.9°)	2.4° (2.7°)		
	Without stabilisers	(3.8°)	(2.5°)	(1.8°)	(1.3°)	
3	With 4-pt stabilisers	4.2° (4.2°)	3.6° (3.6°)	2.8° (2.8°)	2.0° (2.0°)	
	With 2-pt / support blade	4.2° (4.2°)	3.3° (3.6°)	2.4° (2.8°)	1.8° (2.0°)	
	Without stabilisers	(3.5°)	(2.3°)	(1.7°)	(1.3°)	
1.5	With 4-pt stabilisers	5.5° (5.5°)	3.7° (3.7°)	2.7° (2.7°)	1.9° (1.9°)	
	With 2-pt / support blade	4.9° (5.5°)	3.2° (3.7°)	2.3° (2.7°)	1.8° (1.9°)	
	Without stabilisers	(3.3°)	(2.2°)	(1.6°)		
0	With 4-pt stabilisers	5.1° (5.1°)	3.5° (3.5°)	2.5° (2.5°)		
	With 2-pt / support blade	4.7° (5.1°)	3.1° (3.5°)	2.2° (2.5°)		
	Without stabilisers		(2.2°)			
-1.5	With 4-pt stabilisers		2.8° (2.8°)			
	With 2-pt / support blade		2.8° (2.8°)			
					Max. reach 9.0	
	Without stabilisers				(1.3°)	
1.9	With 4-pt stabilisers				1.9° (1.9°)	
	With 2-pt / support blade				1.7° (1.9°)	

#### 8.8 m reach with multi-purpose stick

#### **Loading equipment**

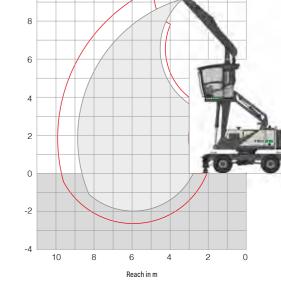
**Recommended attachments** 

Boom 4.7 m

Sorting grapple up to 0.4 m<sup>3</sup>

Multi-purpose stick 3.5 m

Cactus grab (Lightweight material) 0.3 m<sup>3</sup>

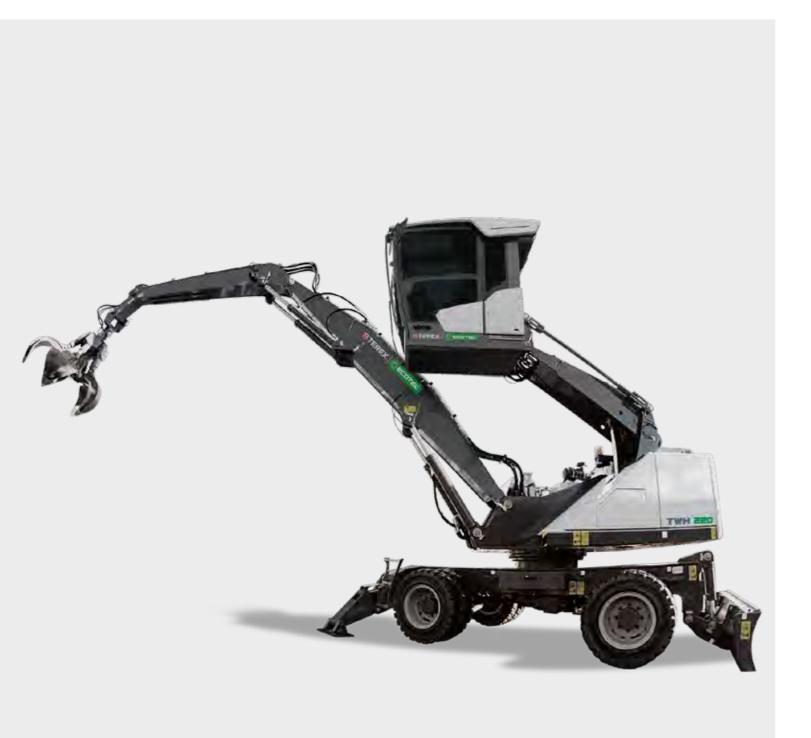


The lift capacity values are stated in metric tons (t). The pump pressure is 350 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked \*). On solid and level ground the values apply to a swing range of 360\*. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hook, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported

leight [m]	Undercarriage		Reac	<b>h</b> [m]	
	stabilisation	3	4.5	6	7.5
	Without stabilisers		(2.6°)	(2.2°)	
7.5	With 4-pt stabilisers		2.6° (2.6°)	2.2° (2.2°)	
	With 2-pt / support blade		2.6° (2.6°)	2.2° (2.2°)	
	Without stabilisers		(2.5°)	(2.6°)	(1.7°)
6	With 4-pt stabilisers		2.5° (2.5°)	2.6° (2.6°)	1.9° (1.9°)
	With 2-pt / support blade		2.5° (2.5°)	2.6° (2.6°)	1.9° (1.9°)
	Without stabilisers		(2.6°)	(2.5°)	(1.7°)
4.5	With 4-pt stabilisers		2.6° (2.6°)	2.9° (2.9°)	2.5° (2.5°)
	With 2-pt / support blade		2.6° (2.6°)	2.9° (2.9°)	2.3° (2.5°)
	Without stabilisers	(7.4°)	(3.7°)	(2.3)	(1.6°)
3	With 4-pt stabilisers	7.8° (7.8°)	4.7° (4.7°)	3.3° (3.3°)	2.5° (2.5°)
	With 2-pt / support blade	7.8° (7.8°)	4.7° (4.7°)	3.2° (3.3°)	2.2° (2.5°)
	Without stabilisers	(2.4°)	(3.3°)	(2.2)	(1.5°)
1.5	With 4-pt stabilisers	2.4° (2.4°)	5.2° (5.2°)	3.4° (3.4°)	2.5° (2.5°)
	With 2-pt / support blade	2.4° (2.4°)	4.7° (5.2°)	3.0° (3.4°)	2.1° (2.5°)
	Without stabilisers	(2.8°)	(3.1°)	(2.1°)	(1.5°)
0	With 4-pt stabilisers	2.8° (2.8°)	4.9° (4.9°)	3.3° (3.3°)	2.3° (2.3°)
	With 2-pt / support blade	2.8° (2.8°)	4.4° (4.9°)	2.9° (3.3°)	2.1° (2.3°)
	Without stabilisers		(3.1°)	(2.0°)	(1.5°)
-1.5	With 4-pt stabilisers		3.7° (3.7°)	2.6° (2.6°)	1.7° (1.7°)
	With 2-pt / support blade		3.7° (3.7°)	2.6° (2.6°)	1.7° (1.7°)
					Max. reach 8.8
	Without stabilisers				(1.2°)
1.9	With 4-pt stabilisers				1.8° (1.8°)
	With 2-pt / support blade				1.6° (1.8°)







## OUTSTANDING VISIBILITY AND PERFORMANCE – OUTSTANDING OPERATION.

Compact, manoeuvrable, powerful: a snapshot of the mobile material handler **TWH 220**. With a reach of 10.4 metres and an operating weight of 21 tonnes, this machine is the ideal solution for those who refuse to compromise on performance, efficiency and reliability – even in an entry-level model.

#### Operating weight without attachments

TWH 220	19.3-21.0 t
Diesel engine	
Manufacturer / model	Deutz TCD 3.6 L04
Design	4-cylinder in-line engine
Functionality	4-cycle diesel, common rail direct injection, turbo- charged with intercooler, controlled exhaust gas recirculation, diesel particulate filter with continuous regeneration and SCR catalytic converter
Engine power	95 kW
Rated speed	2,000 rpm
Displacement	3.61
Cooling system	Water and charge air cooling with temperature controlled fan speed
Exhaust emission standard	EU-Stage V
Fuel tank	3051 Diesel
DEF / Urea tank	20 l AdBlue
Electrical system	
Alternator	28 V / 100 A
Operating voltage	24 V
Battery	$2\times12V$ / 110 Ah/ 750 A (according to EN)
Lighting system	2 × LED headlamps, turn indicators and tail lights
Travel drive	
	finitely variable axial piston motor with directly mounted I manual gearshift, 4-wheel drive
Travel speed 1st gear	max. 5 kph
Travel speed 2nd gear	max. 20 kph
Gradeability	max. 55 %
Turning radius	7.0 m
Slewing drive	
Slewing ring	Internally geared, double-row ball turning ring
Drive	2-stage planetary gear with integrated multi-disc brake
Uppercarriage swing speed	0-8 rpm variable
Slewing lock	Electrically activated

Front axle	Planetary drive axle with integrated drumbrake, rigidly mounted, max. steering angle: 30°
Rear axle	Oscillating planetary drive rear axle with integrated drum brake and selectable oscillating lock
Outriggers	4-point stabilisers 2-point-stabilisers with support blade
Tyres	10.00-20 solid rubber with intermediate rings
Brakes	
Service brake	Hydraulic single-circuit braking system acting on all four wheel pairs (drum brakes)
Parking brake	Electrically operated spring-loaded drum brake at transmission, acting on both front and rear axle
Hydraulic system	
Max. pump capacity	290 lpm
Max. operating pressure	320 / 360 bar
Hydraulic oil tank	2751
Operator's cab	
Cab	Infinitely variable hydraulic height-adjustment with eye leve up to 5.3 m above ground. Sound-deadened, heat-insulated windows, windshield with pull-down sunblind, viewing window on cab roof, sliding window in cab door, sliding door
Air conditioning	Automatic air-conditioning. Hot water heating with variable temperature control and 8-speed fan, 10 adjustable air nozzles, including 4 in the roof lining, 3 defroster nozzles
Operator's seat	Air-cushioned comfort-seat with integrated headrest, safety belt and lumbar support. Comfortable operation with multi-purpose adjustment options for seat position, seat inclination, seat cushion placement in relation to armrests and pilot control units. Articulating armrest and joysticks
Monitoring	Ergonomic layout, anti-glare instrumentation. Multifunction display, automatic monitoring and recording of abnormal operating conditions (including all hydraulic oil filters, hydraulic oil temperature (cold/hot), coolant temperature and charge air temperature, diesel particulate filter load, visual and audible warning indication with shutdown of pilo controls/engine power reduction. Diagnosis of individual sensors possible via the multifunction display. Rear view camera and side view camera
Noise level	Sound power level (ambience) $L_{wA}$ 97,2 dB(A) (metreed) acc. to directive 2000/14/EG $L_{wA}$ 100 dB(A) (guaranteed) acc. to directive 2000/14/EG Sound pressure level (inside the cabin) acc. to standard ISO 6396 $L_{nA}$ 72 dB(A)

Engine	Standard	0pti
Intercooler and coolant radiator	•	
Direct electronic fuel injection / common rail	•	
Advanced automatic idle incl. engine shut-off function	•	
Engine diagnostics interface	•	
Temperature-dependent fan drive	•	
Undercarriage		
All-wheel drive with differential	•	
Drum brake	•	
Rear axle oscillating lock	•	
4-point stabilisers	•	
2-point stabilisers with support blade		•
Dozer blade in addition to 4-point stabilisers		•
Stabiliser cylinders with integrated two-way check valves	•	
Piston rod protection on stabiliser cylinders	•	
Tool box	•	
Solid rubber tyres with intermediate rings	•	
Uppercarriage		
Separate cooling system for engine and hydraulic oil cooler	•	
Cooling system with temperature-dependent fan drive	•	
Fan drive reversing function	•	
Automatic central lubrication system	•	
Rear view camera	•	
Side view camera	•	

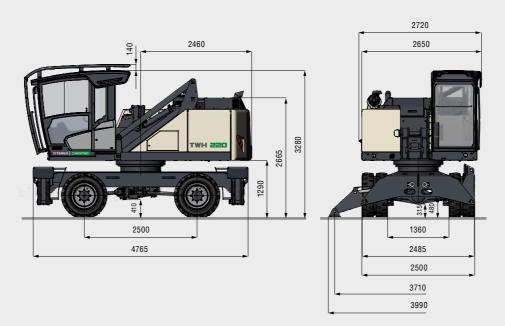
Cab	Standard	Option
Hydraulically adjustable cab	•	
Safety glass	•	
Roof guard grille (FOPS)		•
Protective grilles to front and roof		•
Sliding window in cab door	•	
Windshield washer system	•	
Roof washer system		•
Air-cushioned operator seat with headrest, seatbelt, and lumbar support	•	
Joystick steering	•	
Automatic air conditioning system	•	
Multi-function display	•	
Document net	•	
Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)	•	
12 V socket		•
Fire extinguisher, dry powder		•
Travel alarm w/ rotating beacon		•
Other equipment		
Close proximity range limiter for dipper stick	•	
Coolant and hydraulic oil level monitoring system	•	
Filter system for attachments		•
Hose rupture valve for boom cylinder		•
Hose rupture valve for stick cylinder		•
Overload and work area control		•
Overload warning device		•
Quick coupling on dipper stick	•	
Dipper stick impact protection		•
Active cyclone prefilter (TOP AIR)		•
Lubrication of the grab suspension by central lubrication system	•	
Light packages LED		•
LED front headlights	•	
LED working lights cabin roof front	•	
Boom cylinder damping system (piston accumulator)		•
Fuchs Telematics System, incl. 2 years service	•	

Specification subject to change without notice.

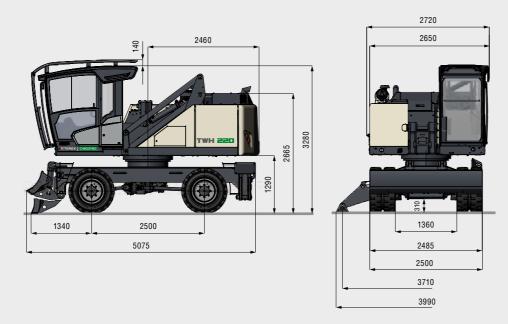
Further optional equipment available on request! Specification subject to change without notice.



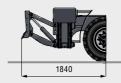
Undercarriage equipped with 4-point stabilisers



Undercarriage equipped with 2-point stabilisers and support blade

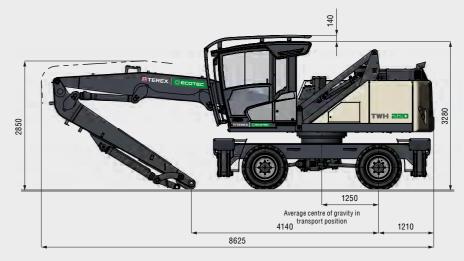


Dozer blade in addition to 4-point stabilisers

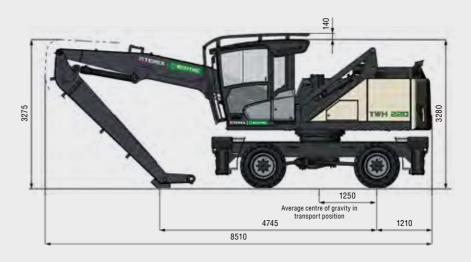




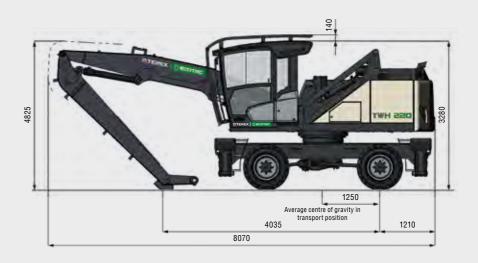
9.2 m reach with multi-purpose stick



9.5 m reach with dipper stick



10.4 m reach with dipper stick







### 9.5 m reach with dipperstick

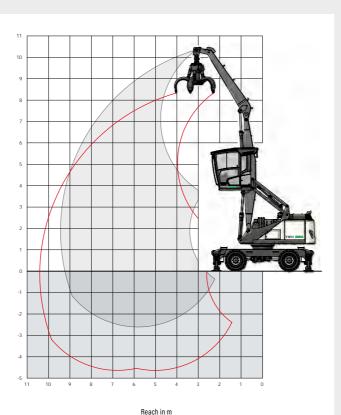
#### Loading equipment

Boom: 5.2 m

Dipperstick: 4.0 m

Cactus grab: 0.6 m<sup>3</sup>

The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked °). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose uputure valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported



3.4° (3.4°)

2.7° (3.4°)

Height [m]	Undercarriage				
	stabilisation	4.5	6	7.5	9
	not supported	(6.5°)			
9	4-point supported	6.5° (6.5°)			
	2-point supported with blade	6.5° (6.5°)			
	not supported		(4.6°)		
7.5	4-point supported		5.7° (5.7°)		
	2-point supported with blade		5.7° (5.7°)		
	not supported		(4.5°)	(3.2°)	
6	4-point supported		5.7° (5.7°)	4.9° (4.9°)	
	2-point supported with blade		5.7° (5.7°)	4.0° (4.9°)	
	not supported	(6.9°)	(4.4°)	(3.2°)	(2.4°)
4.5	4-point supported	7.5° (7.5°)	6.0° (6.0°)	4.9° (4.9°)	3.8° (4.0°)
	2-point supported with blade	7.5° (7.5°)	5.6° (6.0°)	4.0° (4.9°)	3.0° (4.0°)
	not supported	(6.5°)	(4.3°)	(3.1°)	(2.3°)
3	4-point supported	8.5° (8.5°)	6.3° (6.3°)	5.0° (5.0°)	3.8° (3.9°)
	2-point supported with blade	8.4° (8.5°)	5.4° (6.3°)	3.9° (5.0°)	2.9° (3.9°)
	not supported	(6.1°)	(4.1°)	(3.0°)	(2.3°)
1.5	4-point supported	9.2° (9.2°)	6.5° (6.5°)	4.9° (4.9°)	3.7° (3.7°)
	2-point supported with blade	8.0° (9.2°)	5.2° (6.5°)	3.8° (4.9°)	2.9° (3.7°)
	not supported	(5.9°)	(3.9°)	(2.9°)	(2.3°)
0	4-point supported	8.6° (8.6°)	6.2° (6.2°)	4.5° (4.5°)	3.1° (3.1°)
	2-point supported with blade	7.7° (8.6°)	5.0° (6.2°)	3.7° (4.5°)	2.9° (3.1°)
	not supported	(5.8°)	(3.9°)	(2.9°)	
-1.5	4-point supported	6.8° (6.8°)	5.1° (5.1°)	3.6° (3.6°)	
	2-point supported with blade	6.8° (6.8°)	5.0 (5.1°)	3.6° (3.6°)	
					Max. reach 9.5
	not supported				(2.2°)

### 10.4 m reach with dipper stick

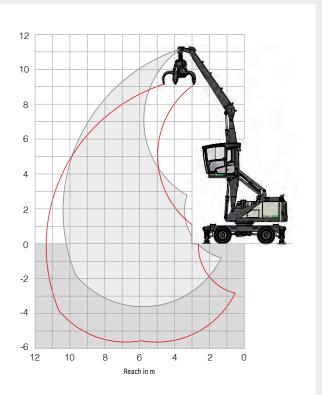
#### Loading equipment

Boom: 5.2 m

Dipper stick: 5.0 m

Cactus grab: 0.4 m<sup>3</sup>

The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked °). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.



Height [m]	Undercarriage				
	stabilisation	4.5	6	7.5	9
	not supported	(5.2°)			
10.5	4-point supported	5.2° (5.2°)			
	2-point supported with blade	5.2° (5.2°)			
	not supported		(4.7°)		
9	4-point supported		4.9° (4.9°)		
	2-point supported with blade		4.9° (4.9°)		
	not supported		(4.7°)	(3.3°)	
7.5	4-point supported		5.0° (5.0°)	4.5° (4.5°)	
	2-point supported with blade		5.0° (5.0°)	4.1° (4.5°)	
	not supported		(4.7°)	(3.3°)	(2.4°)
6	4-point supported		5.1° (5.1°)	4.5° (4.5°)	3.9° (3.9°)
	2-point supported with blade		5.1° (5.1°)	4.1° (4.5°)	3.1° (3.9°)
	not supported		(4.6°)	(3.2°)	(2.4°)
4.5	4-point supported		5.4° (5.4°)	4.6° (4.6°)	3.9° (4.0°)
	2-point supported with blade		5.4° (5.4°)	4.0° (4.6°)	3.0° (4.0°)
	not supported	(6.8°)	(4.4°)	(3.1°)	(2.4°)
3	4-point supported	7.6° (7.6°)	5.9° (5.9°)	4.8° (4.8°)	3.8° (4.0°)
	2-point supported with blade	7.6° (7.6°)	5.5° (5.9°)	3.9° (4.8°)	3.0° (4.0°)
	not supported	(6.3°)	(4.2°)	(3.0°)	(2.3°)
1.5	4-point supported	8.7° (8.7°)	6.3° (6.3°)	4.9° (4.9°)	3.7° (3.9°)
	2-point supported with blade	8.2° (8.7°)	5.3° (6.3°)	3.8° (4.9°)	2.9° (3.9°)
	not supported	(5.9°)	(4.0)	(2.9°)	(2.2°)
0	4-point supported	9.0° (9.0°)	6.4° (6.4°)	4.8° (4.8°)	3.6° (3.6°)
	2-point supported with blade	7.8° (9.0°)	5.1° (6.4°)	3.7° (4.8°)	2.8° (3.6°)
	not supported	(5.7°)	(3.8°)	(2.8°)	(2.2°)
-1.5	4-point supported	8.1° (8.1°)	5.8° (5.8°)	4.3° (4.3°)	3.0° (3.0°)
	2-point supported with blade	7.6° (8.1°)	4.9° (5.8°)	3.6° (4.3°)	2.8° (3.0°)
	not supported	(5.7°)	(3.8°)	(2.8°)	
-3	4-point supported	6.0° (6.0°)	4.4° (4.4°)	3.1° (3.1°)	
	2-point supported with blade	6.0° (6.0°)	4.4° (4.4°)	3.1° (3.1°)	
					Max. reach 10.4
	not supported				(1.9°)
1.9	4-point supported				3.0° (3.0°)
	2-point supported with blade				2.4° (3.0°)



4-point supported
2-point supported with blade

#### 9.2 m reach with multi-purpose stick

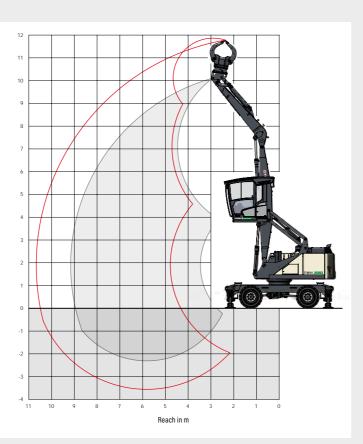
#### Loading equipment

Boom: 5.2 m

Multi-purpose stick: 3.7 m

Sorting grab

The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked \*). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.



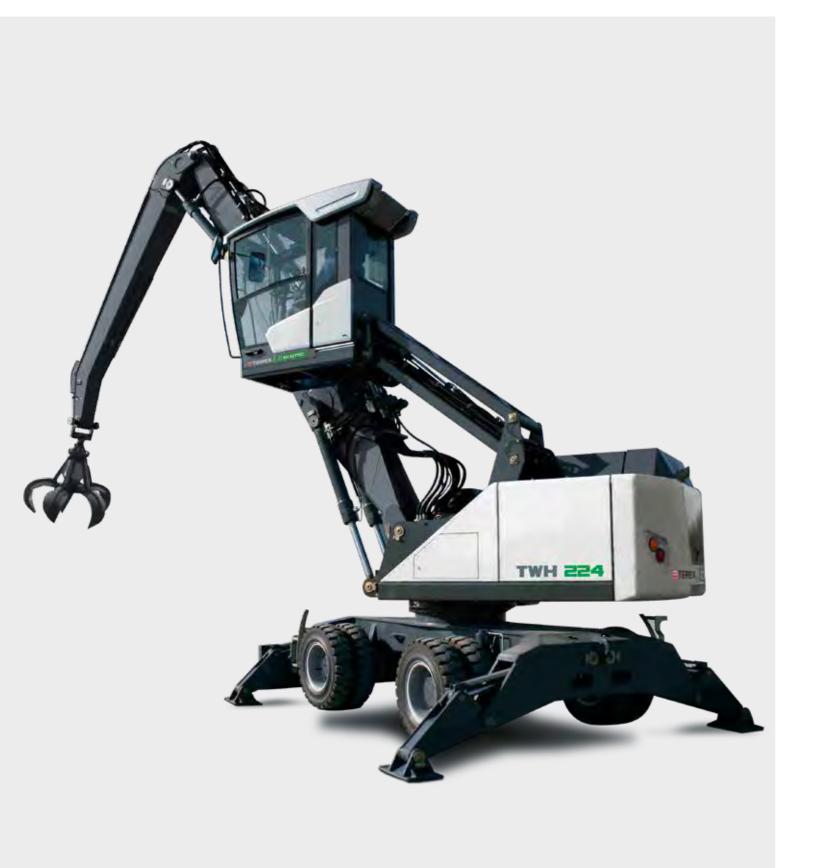
2.6° (3.2°)

Height [m]	Undercarriage				
	stabilisation	4.5	6	7.5	9
	not supported	(6.5°)			
9	4-point supported	6.5° (6.5°)			
	2-point supported with blade	6.5° (6.5°)			
	not supported	(6.8°)	(4.3°)		
7.5	4-point supported	6.8° (6.8°)	5.6° (5.6°)		
	2-point supported with blade	6.8° (6.8°)	5.5° (5.6°)		
	not supported	(6.9°)	(4.3°)	(3.0°)	
6	4-point supported	6.9° (6.9°)	5.6° (5.6°)	4.7° (4.7°)	
	2-point supported with blade	6.9° (6.9°)	5.5° (5.6°)	3.8° (4.7°)	
	not supported	(6.6°)	(4.2°)	(2.9°)	
4.5	4-point supported	7.5° (7.5°)	5.8° (5.8°)	4.7° (4.7°)	
	2-point supported with blade	7.5° (7.5°)	5.3° (5.8°)	3.7° (4.7°)	
	not supported	(6.2°)	(4.0°)	(2.8°)	(2.1°)
3	4-point supported	8.4° (8.4°)	6.1° (6.1°)	4.7° (4.7°)	3.6° (3.6°)
	2-point supported with blade	8.1° (8.4°)	5.1° (6.1°)	3.6° (4.7°)	2.7° (3.6°)
	not supported	(5.8°)	(3.8°)	(2.7°)	(2.1°)
1.5	4-point supported	8.8° (8.8°)	6.2° (6.2°)	4.6° (4.6°)	3.2° (3.2°)
	2-point supported with blade	7.7° (8.8°)	4.9° (6.2°)	3.5° (4.6°)	2.7° (3.2°)
	not supported	(5.6°)	(3.7°)	(2.7°)	
0	4-point supported	8.0° (8.0°)	5.7° (5.7°)	4.1° (4.1°)	
	2-point supported with blade	7.4° (8.0°)	4.8° (5.7°)	3.5° (4.1°)	
	not supported	(5.5°)	(3.6°)	(2.6°)	
-1.5	4-point supported	6.0° (6.0°)	4.4° (4.4°)	3.0° (3.0°)	
	2-point supported with blade	6.0° (6.0°)	4.4° (4.4°)	3.0° (3.0°)	
					Max. reach 9.2 m
	not supported				(2.0°)
1.9	4-point supported				3.2° (3.2°)





2-point supported with blade



# THE ALL-ROUNDER, INCORPORATING TURBO EFFICIENCY.

With its diverse applications and near legendary manoeuvring speed, the **TWH 224** really does rev up the recycling business. The solid undercarriage ensures stability when loads weighing several tonnes are to be moved utilising a reach of up to 11 metres.

# **TWH 226**

### BIGGER UNDERCARRIAGE. HIGHER LOAD CAPACITY.

Flexibility and speed are the key to success in the recycling business. That's why smart professionals rely on the **TWH 226**. Convenient handling, the greatest power, high lifting capacities throughout the entire working range, ergonomic, straightforward operation in the vertically movable cab and legendary reliability make you ready for any challenge!





#### Operating weight without attachments

	uttuoimients
TWH 224	22.8-24.2 t
TWH 226	23.9-25.5t
Engine	
Manufacturer / model	Deutz TCD 4.1 L4
Design	4-cylinder in-line engine
Functionality	4-cycle diesel, common rail direct injection, turbo- charged with intercooler, controlled exhaust gas recirculation, diesel particulate filter with continuous regeneration and SCR catalytic converter
Engine power	115 kW
Rated speed	2,000 rpm
Displacement	4.1
Cooling system	Water and charge air cooling with temperature controlled fan speed
Exhaust emission standard	EU-Stage V
Fuel tank	260 l Diesel
DEF / Urea tank	32 I AdBlue
Electrical system	
Alternator	28 V / 100 A
Operating voltage	24 V
Battery	2 × 12 V / 110 Ah / 750 A (according to EN)
Lighting system	2 × LED headlamps, turn indicators and tail lights

#### Travel drive

Hydrostatic travel drive via infinitely variable axial piston motor with directly mounted travel brake valve, two-speed manual gearshift, 4-wheel drive

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	TWH 224	TWH 226
Travel speed 1st gear	max. 5 kph	max. 5 kph
Travel speed 2 <sup>nd</sup> gear	max. 18 kph	max. 18 kph
Gradeability	max. 40 %	max. 40 %
Turning radius	7.9 m	8.3 m
Slewing drive		
Slewing ring	Internally geared, double-r	ow ball turning ring
Drive	2-stage planetary gear with integrated multi-disc	brake
Uppercarriage swing speed	0-7.5 rpm variable	
Slewing lock	Electrically activated	

Ullu	erca	II I Ia	uc

	TWH 224	TWH 226		
Front axle	Planetary drive axle with integrated multi-disc brake, rigidly mounted, max. steering angle: 29°	Planetary drive axle with integrated multi-disc brake, rigidly mounted, max. steering angle: 27°		
Rear axle	Oscillating planetary drive rear axle with integrated multi-disc brake and selec- table oscillating lock	Oscillating planetary drive rear axle with integrated multi-disc brake and selec- table oscillating lock		
Outriggers	4-point stabilisers 2-point-stabilisers and support blade	4-point stabilisers		
Tyres	10.00-20 solid rubber with intermediate rings	10.00-20 solid rubber with intermediate rings		
Brakes				
Service brake	Hydraulic single-circuit brak acting on all four wheel pair			
Parking brake	Electrically operated spring- at transmission, acting on b			
Hydraulic system				
Pump delivery rate	max. 380 lpm			
Operating pressure	max. 320 / 360 bar			
Hydraulic oil tank	3251			
Operator's cab				
Cab	Infinitely variable hydraulic l level up to 5.3 m above groun Sound-deadened, heat-insul with pull-down sunblind, vie sliding window in cab door,	nd. lated windows, windshield wing window on cab roof,		
Air conditioning	with 8-speed fan, 10 adjusta	Automatic air-conditioning. Infinitely variable heating with 8-speed fan, 10 adjustable air nozzles, including 4 in the roof lining, 3 defroster nozzles		
Operator's seat	safety belt and lumbar supp with multi-purpose adjustm seat inclination, seat cushio	Air-cushioned comfort-seat with integrated headrest, safety belt and lumbar support. Comfortable operation with multi-purpose adjustment options for seat position, seat inclination, seat cushion placement in relation to armrests and pilot control units. Articulating armrest and		
Monitoring	Ergonomic layout, anti-glare instrumentation. Multi- function display, automatic monitoring and recording of abnormal operating conditions (including all hydraulic oil filters, hydraulic oil temperature (cold/ hot), coolant temperature and charge air temperature, diesel particulate filter load, visual and audible warning indication with shutdown of pilot controls / engine power reduction. Diagnosis of individual sensors possible via the multifunction display. Rear view camera and side view camera			
Noise level	Sound power level (ambience) $L_{wa}$ 99,1 dB(A) (metreed) acc. to directive 2000/14/EG $L_{wa}$ 102 dB(A) (guaranteed) acc. to directive 2000/14/EG Sound pressure level (inside the cabin) acc. to standard ISO 6396 $L_{na}$ 74 dB(A)			

Engine	Standard	Option
Intercooler and coolant radiator	•	
Direct electronic fuel injection / common rail	•	
Advanced automatic idle incl. engine shut-off function	•	
Engine diagnostics interface	•	
Temperature dependent fan drive	•	
Undercarriage		
All-wheel drive with differential	•	
Multi-disc brake	•	
Rear axle oscillating lock	•	
4-point stabilisers	•	
2-point stabilisers and support blade (TWH 224)		•
Dozer blade in addition to 4-point stabilisers		•
Stabiliser cylinders with integrated two-way check valves	•	
Piston rod protection on stabiliser cylinders	•	
Tool box	•	
Solid rubber tyres with intermediate rings	•	
Uppercarriage		
Separate cooling system for engine and hydraulic oil cooler	•	
Cooling system with temperature-dependent fan drive	•	
Fan drive reversing function	•	
Automatic central lubrication system	•	
Rear view camera	•	
Side view camera	•	

Cab	Standard	Option
Hydraulically adjustable cab	•	
Safety glass	•	
Sliding window in cab door	•	
Reinforced glass (windscreen and roof panel) P5A		•
Windshield washer system	•	
Roof washer system		•
Air-cushioned operator seat with headrest, seatbelt, and lumbar support	•	
Joystick steering	•	
Automatic air conditioning system	•	
Multi-function display	•	
Document net	•	
Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)	•	
Fire extinguisher, dry powder		•
Travel alarm w/ rotating beacon		•
Other equipment		
Close proximity range limiter for dipper stick	•	
Coolant and hydraulic oil level monitoring system	•	
Hose rupture valve for boom cylinder		•
Hose rupture valve for stick cylinder		•
Overload and work area control		•
Overload warning device		•
Quick coupling on dipper stick	•	
Active cyclone prefilter (TOP AIR)		•
Lubrication of the grab suspension by central lubrication system	•	
Light packages LED		•
LED front headlights	•	
LED working lights cabin roof front	•	
Boom cylinder damping system (piston accumulator)		•
Fuchs Telematics System, incl. 2 years service	•	

Specification subject to change without notice.

Further optional equipment available on request! Specification subject to change without notice.

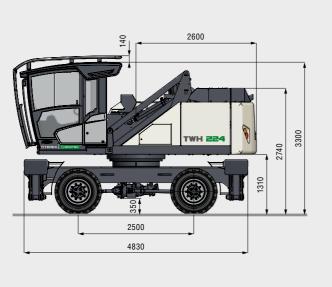


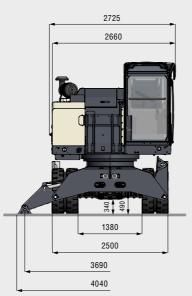


#### **TWH 224 Dimensions**

(all dimensions in mm)

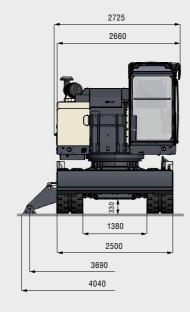
Undercarriage equipped with 4-point stabilisers



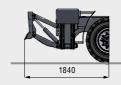


Undercarriage equipped with 2-point stabilisers and support blade





Dozer blade in addition to 4-point stabilisers

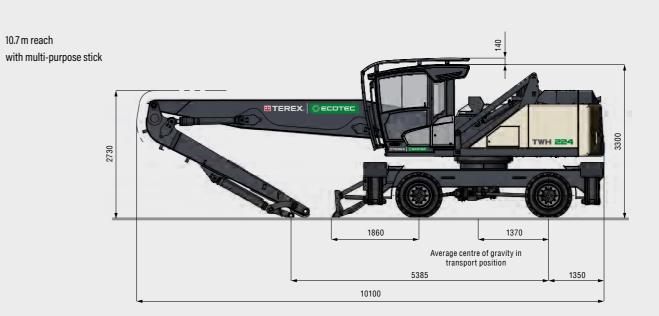




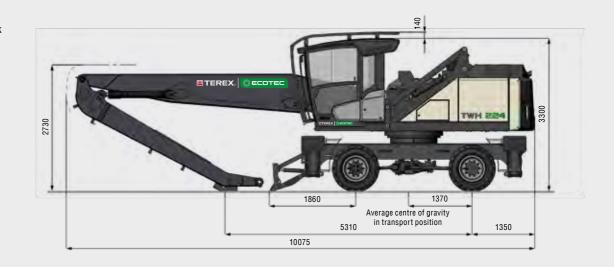
**TWH 224 Transport Dimensions** 

(all dimensions in mm)

10.7 m reach



11.0 m reach with dipper stick





#### 10.7 m reach with multi-purpose stick

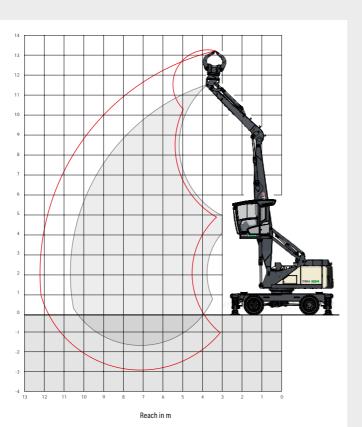
#### Loading equipment

Boom: 6.5 m

Multi-purpose stick: 4.0 m

Sorting grab: 0.45 m<sup>3</sup>

The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 The intropacity values are stated in interfactors (y. The pump yetssate is 500 of the hydraulic lifting force (marked 's. On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported



2.2° (3.7°)

Height [m]	Undercarriage			Reach [m]		
	outrigger	4.5	6	7.5	9	10.5
	not supported		(5.0°)	(3.4°)		
9	4-point supported		6.3° (6.3°)	5.0° (5.0°)		
	2-point supported with support blade		6.3° (6.3°)	4.4° (5.0°)		
	not supported		(4.9°)	(3.4°)	(2.4°)	
7.5	4-point supported		6.3° (6.3°)	5.4° (5.6°)	4.0° (4.0°)	
	2-point supported with support blade		6.3° (6.3°)	4.4° (5.6°)	3.2° (4.0°)	
	not supported	(7.7°)	(4.8°)	(3.3°)	(2.4°)	
6	4-point supported	8.3° (8.3°)	6.7° (6.7°)	5.4° (5.8°)	3.9° (4.9°)	
	2-point supported with support blade	8.3° (8.3°)	6.3° (6.7°)	4.3° (5.8°)	3.1° (5.1°)	
	not supported	(7.1)	(4.5°)	(3.2°)	(2.3°)	
4.5	4-point supported	9.8° (9.8°)	7.5° (7.6°)	5.2° (6.3°)	3.9° (4.8°)	
	2-point supported with support blade	9.6 (9.8°)	6.0° (7.4°)	4.2° (6.1°)	3.1° (5.0°)	
	not supported	(6.4°)	(4.2°)	(3.0°)	(2.2°)	(1.7°)
3	4-point supported	11.4° (11.8°)	7.1° (8.3°)	5.0° (6.3°)	3.8° (4.7°)	2.9° (3.7°)
	2-point supported with support blade	8.6° (11.6°)	5.6° (8.3°)	3.9° (6.5°)	3.0° (4.9°)	2.3° (3.8°)
	not supported	(5.8)	(3.9°)	(2.8°)	(2.1°)	(1.7°)
1.5	4-point supported	7.6° (7.6°)	6.8° (8.7°)	4.8° (6.1°)	3.7° (4.6°)	2.9° (3.6°)
	2-point supported with support blade	7.3° (7.3°)	5.2° (8.9°)	3.7° (6.3°)	2.8° (4.8°)	2.2° (3.8°)
	not supported	(5.6°)	(3.7°)	(2.7°)	(2.1°)	
0	4-point supported	6.2° (6.2°)	6.6° (8.5°)	4.7° (6.0°)	3.6° (4.5°)	
	2-point supported with support blade	6.2° (6.2°)	5.0° (8.8°)	3.6° (6.2°)	2.8° (4.7°)	
	not supported			(2.7°)		
-1.5	4-point supported			4.6° (5.9°)		
	2-point supported with support blade			3.6° (6.1°)		
						Reach max. 10.7 n
	not supported					(1.6°)
2.0	4-point supported					2.8° (3.6°)

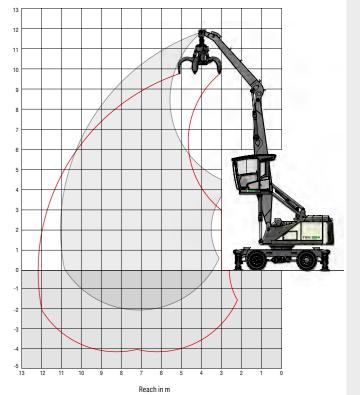
#### 11.0 m reach with dipper stick

#### Loading equipment

Boom: 6.5 m

Dipper stick: 4.4 m

Cactus grab: 0.6 m<sup>3</sup>



The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 The intraparty values are stated in metric tasts (y, in the jump jessauer's 300 and an accountance with 150 to 300 to 300 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked's, On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.

2-point supported with support blade

Height [m]	Undercarriage			Reach [m]		
	outrigger	4.5	6	7.5	9	10.5
	not supported		(5.2°)			
10.5	4-point supported		5.6° (5.6°)			
	2-point supported with support blade		5.6° (5.6°)			
	not supported		(5.3°)	(3.6°)		
9	4-point supported		6.3° (6.3°)	5.6° (5.6°)		
	2-point supported with support blade		6.3° (6.3°)	4.7° (5.6°)		
	not supported		(5.2°)	(3.7°)	(2.7°)	
7.5	4-point supported		6.3° (6.3°)	5.7° (5.7°)	4.2° (4.9°)	
	2-point supported with support blade		6.3° (6.3°)	4.7° (5.7°)	3.5° (4.9°)	
	not supported		(5.1°)	(3.6°)	(2.6°)	
6	4-point supported		6.7° (6.7°)	5.6° (5.9°)	4.2° (5.2°)	
	2-point supported with support blade		6.7° (6.7°)	4.6° (5.9°)	3.5° (5.3°)	
	not supported	(7.5°)	(4.8°)	(3.4°)	(2.6°)	(2.0°)
4.5	4-point supported	9.6° (9.6°)	7.5° (7.5°)	5.5° (6.3°)	4.1° (5.1°)	3.2° (4.0°)
	2-point supported with support blade	9.6° (9.6°)	6.3° (7.5°)	4.5° (6.3°)	3.4° (5.3°)	2.6° (4.2°)
	not supported	(6.8°)	(4.5°)	(3.3°)	(2.5°)	(2.0°)
3	4-point supported	11.6° (11.6°)	7.4° (8.4°)	5.3° (6.6°)	4.0° (5.0°)	3.2° (3.9°)
	2-point supported with support blade	9.2° (11.6°)	6.0° (8.4°)	4.3° (6.8°)	3.3° (5.2°)	2.6° (4.1°)
	not supported	(6.2°)	(4.2°)	(3.1°)	(2.4°)	(1.9°)
1.5	4-point supported	10.1° (10.1°)	7.1° (9.0°)	5.1° (6.4°)	3.9° (4.9°)	3.1° (3.9°)
	2-point supported with support blade	8.5° (9.6°)	5.6° (9.2°)	4.1° (6.7°)	3.2° (5.1°)	2.5° (4.1°)
	not supported	(5.9°)	(4.0°)	(3.0°)	(2.3°)	(1.9°)
0	4-point supported	6.9° (6.9°)	6.8° (8.8°)	5.0° (6.2°)	3.8° (4.8°)	3.1° (3.9°)
	2-point supported with support blade	6.9° (6.9°)	5.4° (9.2°)	3.9° (6.5°)	3.1° (5.0°)	2.5° (4.0°)
	not supported		(3.9°)	(2.9°)	(2.3°)	
-1.5	4-point supported		6.8° (8.7°)	4.9° (6.2°)	3.8° (4.7°)	
	2-point supported with support blade		5.3° (9.1°)	3.9° (6.4°)	3.0° (5.0°)	
						Reach max. 11.0 m
	not supported					(1.8°)
2.0	4-point supported					2.9° (3.7°)



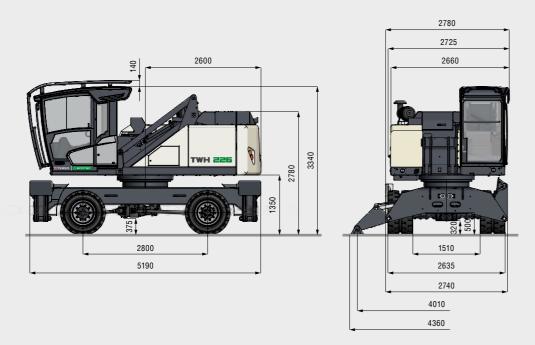
2-point supported with support blade

2.4° (3.8°)

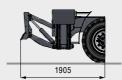
#### **TWH 226 Dimensions**

(all dimensions in mm)

Undercarriage equipped with 4-point stabilisers



Dozer blade in addition to 4-point stabilisers

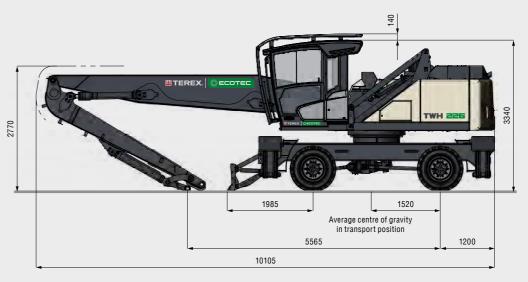




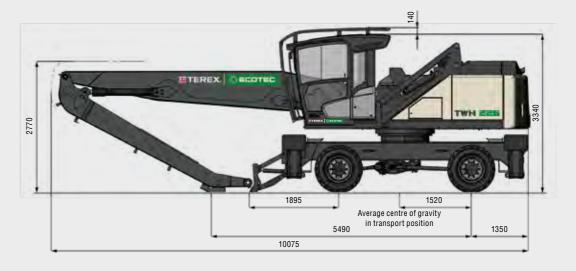
#### **TWH 226 Transport Dimensions**

(all dimensions in mm)

10.7 m reach with multi-purpose stick



11.0 m reach with dipper stick





#### 10.7 m reach with multi-purpose stick

#### Loading equipment

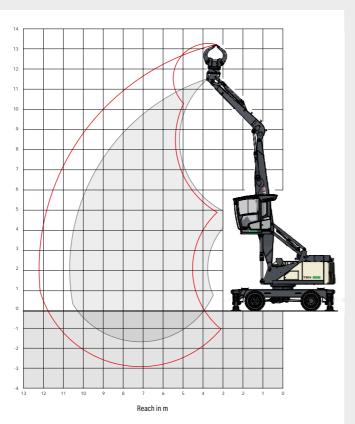
Boom: 6.5 m

Multi-purpose stick: 4.0 m

Sorting grab: 0.45 m<sup>3</sup>

The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values are sated in interfactors (p. the pump pressure is 300 lbd. In accordance with ISU Ilbbh.

The lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked °). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity when the three three continuous three three continuous transfer and the same continuous transfer and th capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported



eight [m]	Undercarriage			Reach [m]		
	outrigger	4.5	6	7.5	9	10.5
10.5	not supported		(5.0°)			
10.5	4-point supported		5.0° (5.0°)			
9	not supported		(6.0°)	(4.1°)		
J	4-point supported		6.4° (6.4°)	5.1° (5.1°)		
7.5	not supported		(5.9°)	(4.1°)	(2.9°)	
7.0	4-point supported		6.4° (6.4°)	5.8° (5.8°)	4.1° (4.1°)	
6	not supported	(8.3°)	(5.8°)	(4.0°)	(2.9°)	
0	4-point supported	8.3° (8.3°)	6.9° (6.9°)	5.9° (5.9°)	4.7° (5.8°)	
4.5	not supported	(8.6°)	(5.5°)	(3.8°)	(2.9°)	
4.5	4-point supported	10.0° (10.0°)	7.6° (7.6°)	6.1° (6.3°)	4.6° (5.5°)	
3	not supported	(7.9°)	(5.1°)	(3.7°)	(2.8°)	(2.2°)
3	4-point supported	12.0° (12.0°)	8.5° (8.5°)	5.9° (6.8°)	4.5° (5.7°)	3.5° (4.4°)
1.5	not supported	(7.3°)	(4.8°)	(3.5°)	(2.7°)	(2.1°)
1.5	4-point supported	7.4° (7.4°)	8.1° (9.2°)	5.8° (7.1°)	4.4° (5.6°)	3.5° (4.4°)
•	not supported	(6.3°)	(4.6°)	(3.4°)	(2.6°)	
0	4-point supported	6.3° (6.3°)	7.9° (9.4°)	5.6° (7.2°)	4.3° (5.5°)	
	not supported			(3.3°)		
-1.5	4-point supported			5.6° (6.9°)		
						Max. reach 10.7
2.1	not supported					(2.1°)
2.1	4-point supported					3.4° (4.0°)

#### 11.0 m reach with dipper stick

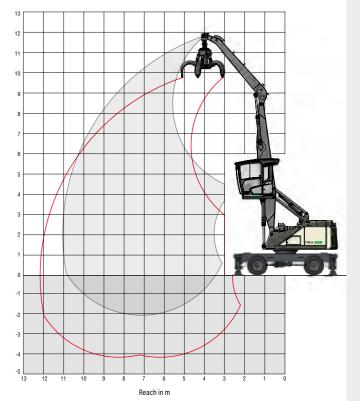
#### Loading equipment

Boom: 6.5 m

Dipper stick: 4.4 m

Cactus grab: 0.6 m<sup>3</sup>

4-point supported



The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 1052the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked \*). On
solid and level ground the values apply to a swing range of 360\*. The (...) values apply in the longitudinal direction
of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating
axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift
capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for
object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and
the lift capacity table in the cab are required. For object handling application the machine has to be supported
on a level ground.

Unight [m]	Undercarriage	Reach [m]						
Height [m]	outrigger	4.5	6	7.5	9	10.5		
10.5	not supported		(5.7°)					
10.5	4-point supported		5.7° (5.7°)					
9	not supported		(6.3°)	(4.4°)				
9	4-point supported		6.3° (6.3°)	5.7° (5.7°)				
	not supported		(6.2°)	(4.4°)	(3.2°)			
7.5	4-point supported		6.4° (6.4°)	5.8° (5.8°)	5.0° (5.0°)			
•	not supported		(6.1°)	(4.3°)	(3.2°)			
6	4-point supported		6.8° (6.8°)	6.0° (6.0°)	4.9° (5.5°)			
4.5	not supported	(9.1°)	(5.8°)	(4.1°)	(3.1°)	(2.4°)		
4.5	4-point supported	9.7° (9.7°)	7.6° (7.6°)	6.4° (6.4°)	4.8° (5.6°)	3.8° (4.6°)		
•	not supported	(8.3°)	(5.4°)	(3.9°)	(3.0°)	(2.4°)		
3	4-point supported	11.8° (11.8°)	8.6° (8.6°)	6.2° (6.9°)	4.7° (5.9°)	3.8° (4.7°)		
	not supported	(7.7°)	(5.1°)	(3.8°)	(2.9°)	(2.4°)		
1.5	4-point supported	9.7° (9.7°)	8.4° (9.4°)	6.0° (7.4°)	4.6° (5.8°)	3.7° (4.6°)		
•	not supported	(6.9°)	(4.9°)	(3.6°)	(2.9°)	(2.3°)		
0	4-point supported	6.9° (6.9°)	8.2° (9.8°)	5.9° (7.5°)	4.6° (5.7°)	3.7° (4.6°)		
	not supported		(4.8°)	(3.6°)	(2.8°)			
-1.5	4-point supported		8.1° (9.5°)	5.8° (7.4°)	4.5° (5.7°)			
						Max. reach 11.0 n		
21	not supported					(2.2°)		

3.5° (3.8°)



# WELL-THOUGHT-OUT MACHINE FOR MORE POWER AND REACH WHILE RETAINING COMPACT DIMENSIONS.

With its substantial reach and high load capacity, the **TWH 228** is one of the top recycling models in the world. Its rock-solid stability and tough boom design ensure safety in the most extreme situations. Highly efficient dual-circuit hydraulics ensure that slewing manoeuvres are as swift and powerful as they are precise.



#### **Equipment**

#### Service weight without attachments TWH 228 28.4 t-30.6 t Diesel engine Manufacturer / model Deutz 6.1 L6 Design 6-cylinder inline 4-cycle diesel, common rail direct injection, turbo-charged with intercooler, controlled exhaust gas Functionality recirculation, diesel particulate filter with continuous regeneration and SCR catalytic converter 129 kW Engine power 2,000 rpm Rated speed Displacement 6.1 l Cooling system Water and charge air cooling with temperature controlled fan speed Exhaust emission standard EU-Stage V Fuel tank 380 | Diesel DEF / Urea tank 32 I AdBlue Electrical system Alternator 28 V / 100 A Operating voltage 24 V 2 × 12 V / 110 Ah / 750 A Battery (in accordance with EN standards) 2 × LED headlamps, turn indicators and tail lights Lighting system Travel drive Hydrostatic travel drive via infinitely variable axial piston motor with directly mounted travel brake valve, two-speed manual gearshift, 4-wheel drive Travel speed 1st gear 5 kph Travel speed 2nd gear 18 kph Gradeability max. 40% Turning radius 8.3 m Slewing drive Slewing ring Internally geared, double-row ball turning ring 2-stage planetary gear Drive with integrated multi-disc brake Uppercarriage swing speed 0-7.5 rpm variable

Front axle	Rigid axle with integral drum brake, planetary drive, max. steering angle: 27°			
Rear axle	Oscillating axle with integral drum brake and selectable oscillation lock, planetary drive			
Outriggers	4-point stabiliser system			
Tyres	10.00-20 solid rubber with intermediate rings			
Brakes				
Service brake	Hydraulic single-circuit braking system acting on all four wheel pairs			
Parking brake	Electrically operated disc brake on travel gearbox, acting on both front and rear axles			
Hydraulic system				
Pump delivery rate	max. $2 \times 330$ lpm			
Operating pressure	max. 320 / 360 bar			
Hydraulic oil tank	350 l			
Operator's cab				
Cab	Infinitely variable hydraulic height-adjustment with eye level up to 5.60 m above ground. Sound-deadened, ample thermal panoramic glass win- dows, windshield with pulldown sunblind, viewing window on cab roof, sliding window in cab door, sliding door			
Air conditioning	Automatic air-conditioning. Infinitely variable heating with 8-speed fan, 10 adjustable air nozzles, including 4 in the roof lining, 3 defroster nozzles			
Operator's seat	Air-cushioned comfort seat with integrated headrest, safety belt and lumbar support, optional seat heating. Comfortable operation with multi-purpose adjustment options for seat position, seat inclination, seat cushion placement in relation to armrests and pilot control units. Articulating armrests and joysticks			
Monitoring	Ergonomic layout, anti-glare instrumentation.  Multifunction display, automatic monitoring and recording of abnormal operating conditions (including all hydraulic oil filters, hydraulic oil temperature (cold/hot), coolant temperature and charge air temperature), diesel particulate filter load, visual and audible warning indication with shutdown of pilot controls/engine power reduction. Diagnosis of individual sensors possible via the multifunction display. Rear view camera			
Noise level	Sound power level (ambience) $L_{WA}$ 99.3 dB(A) (metreed) acc. to directive 2000/14/EG $L_{WA}$ 101 dB(A) (guaranteed) acc. to directive 2000/14/EG Sound pressure level (inside the cabin) acc. to standard ISO 6396 $L_{\rm pA}$ 70 dB(A)			

Engine	Standard	Option
Intercooler and coolant radiator	•	
Direct electronic fuel injection / common rail	•	
Advanced automatic idle incl. engine shut-off function	•	
Engine preheating		•
Engine diagnostics interface	•	
Temperature-dependent fan drive	•	
Undercarriage		
All-wheel drive with differential	•	
Drum brakes	•	
Rear axle oscillating lock	•	
2-speed powershift transmission		•
4-point stabilisers	•	
Dozer blade in addition to 4-point stabilisers		•
Stabiliser cylinders with integrated two-way check valves	•	
Piston rod protection on stabiliser cylinders	•	
Tool box	•	
Special paint (customer paint work)		•
Solid rubber tyres (10.00-20) with intermediate rings	•	•
Uppercarriage		
Separate cooling system for engine and hydraulic oil cooler	•	
Cooling system with temperature-dependent fan drive	•	
Fan drive reversing function		•
Automatic central lubrication system	•	
Rear view camera	•	
Side view camera	•	
Travel alarm		•
Electric refuelling pump		•
Lighting protection		•
Special paint (customer paint work)		•

Hydraulically adjustable cab  Safety glass  Sitiding window in cab door  Reinforced glass (windscreen and roof panel) P5A  Windshield washer system  Roof washer system  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system  Multi-function display  Document net Roof guard grille Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB (other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Hose rupture valve for boom cylinder  Hose rupture valve for stock cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)  Fuchs Telematics System, incl. 2 years service	Cab	Standard	Option
Sliding window in cab door Reinforced glass (windscreen and roof panel) P5A  Windshield washer system Roof washer system  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Independent heating system Wulti-function display Document net Roof guard grille Protective grilles to front and roof 12 V transformer Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Hose rupture valve for boom cylinder Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Hydraulically adjustable cab	•	
Reinforced glass (windscreen and roof panel) P5A  Windshield washer system  Roof washer system  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Independent heating system  Wulti-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Overload warning device  Quick coupling on dipper stick  Overload warning device  Quick coupling on dipper stick  Lobinger stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Safety glass	•	
Roof washer system  Roof washer system  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Sliding window in cab door	•	
Roof washer system  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Reinforced glass (windscreen and roof panel) P5A		•
Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)  •   **Codiant and hydraulic oil system of the grab suspension by central lubrication system  Light packages LED  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Windshield washer system	•	
seathelt, and lumbar support  Seat heating Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system  Multi-function display Document net Roof guard grille Protective grilles to front and roof 12 V transformer Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)  • **Condition**  **Condition**  **Condition** **Condi	Roof washer system		•
Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Multi-function display Document net Roof guard grille Protective grilles to front and roof 12 V transformer Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	•	•	
Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Seat heating		•
Automatic air conditioning system  Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Joystick steering	•	
Independent heating system  Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Steering column, height and tilt adjustable		•
Multi-function display  Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Automatic air conditioning system	•	
Document net  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Independent heating system		•
Roof guard grille Protective grilles to front and roof  12 V transformer Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED  LED front headlights  LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Multi-function display	•	
Protective grilles to front and roof  12 V transformer  Radio with Bluetooth and hands-free kit (EU and US) Radio with CD and USB ( other countries)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Document net	•	
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Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)		•	
Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  ELD working lights cabin roof front  Boom cylinder damping system (piston accumulator)	12 V socket		•
Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Fire extinguisher, dry powder		•
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Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Dipper stick impact protection		•
Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Active cyclone prefilter (TOP AIR)		•
by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Hydraulic oil preheating		•
LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)		•	
LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Light packages LED		•
Boom cylinder damping system (piston accumulator)	LED front headlights	•	
, , , , , , , , , , , , , , , , , , , ,	LED working lights cabin roof front	•	
Fuchs Telematics System, incl. 2 years service	Boom cylinder damping system (piston accumulator)		•
	Fuchs Telematics System, incl. 2 years service	•	

Specification subject to change without notice.

Slewing lock

Further optional equipment available on request! Specification subject to change without notice.

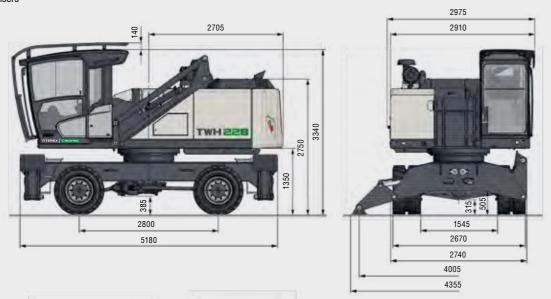


Electrically operated

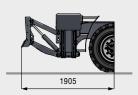
#### **Dimensions**

(all dimensions in mm)

Undercarriage equipped with 4-point stabilisers



Dozer blade in addition to 4-point stabilisers





#### **Transport Dimensions**

(all dimensions in mm)

12.6 m reach with dipper stick



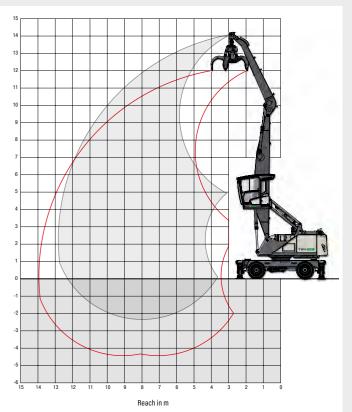
#### 12.6 m reach with dipper stick

#### Loading equipment

Boom: 7.2 m

Dipper stick: 5.1 m

Cactus grab: 0.6 m<sup>3</sup>

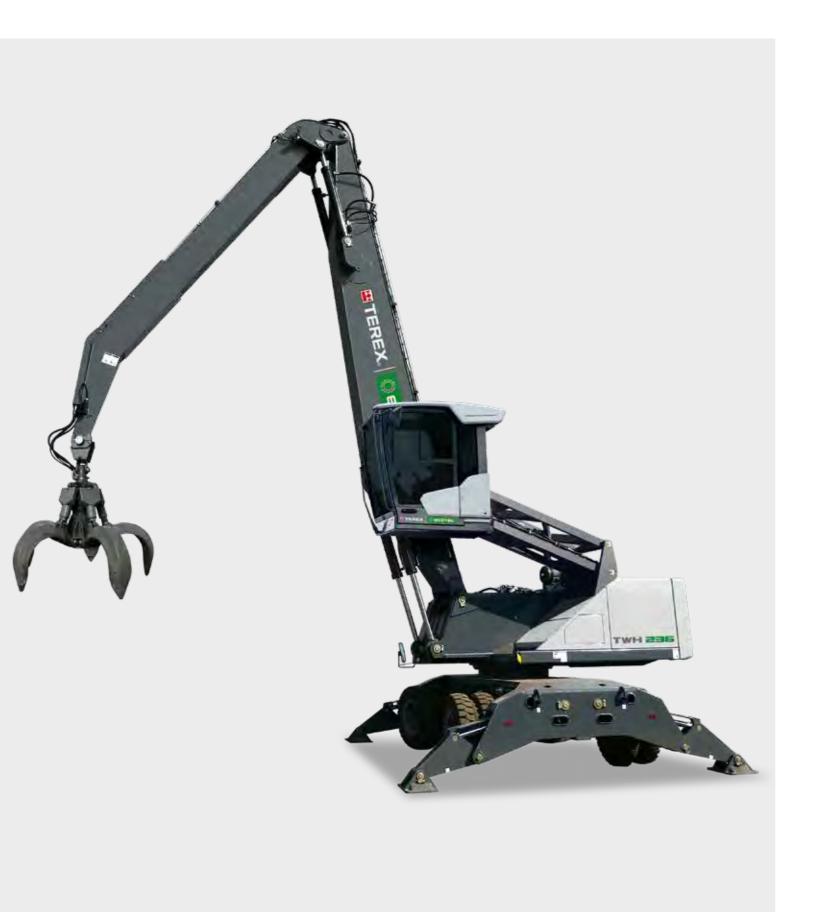


The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked '). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.

Height [m]	ight [m]	Undercarriage	Reach [m]							
	outrigger	4.5	6	7.5	9	10.5	12			
13.5	not supported	(6.3°)								
13.3	4-point supported	6.3° (6.3°)								
12	not supported		(6.6°)	(4.7°)						
12	4-point supported		6.6° (6.6°)	4.7° (4.7°)						
10.5	not supported		(7.5°)	(5.6°)	(4.1°)					
10.5	4-point supported		7.5° (7.5°)	6.5° (6.5°)	4.7° (4.7°)					
9	not supported		(8.0°)	(5.7°)	(4.2°)	(3.2°)				
9	4-point supported		8.0° (8.0°)	7.5° (7.5°)	6.3° (6.3°)	4.3° (4.3°)				
	not supported		(8.0°)	(5.6°)	(4.1°)	(3.2°)				
7.5	4-point supported		8.7° (8.7°)	7.7° (7.7°)	6.3° (6.6°)	4.9° (5.6°)				
•	not supported	(9.3°)	(7.7°)	(5.4°)	(4.0°)	(3.1°)	(2.5°)			
6	4-point supported	9.3° (9.3°)	9.6° (9.6°)	7.9° (7.9°)	6.2° (6.8°)	4.8° (5.8°)	3.7° (4.1°)			
	not supported	(11.3°)	(7.2°)	(5.1°)	(3.9°)	(3.0°)	(2.4°)			
4.5	4-point supported	14.1° (14.1°)	10.4° (10.4°)	8.0° (8.3°)	6.0° (6.9°)	4.7° (5.9°)	3.8° (4.8°)			
•	not supported	(10.0°)	(6.6°)	(4.8°)	(3.7°)	(2.9°)	(2.4°)			
3	4-point supported	15.8° (15.8°)	10.7° (11.1°)	7.6° (8.6°)	5.8° (7.0°)	4.6° (5.7°)	3.8° (4.7°)			
	not supported	(5.4°)	(6.1°)	(4.5°)	(3.5°)	(2.8°)	(2.3°)			
1.5	4-point supported	5.4° (5.4°)	10.2° (11.3°)	7.3° (8.6°)	5.6° (6.9°)	4.5° (5.6°)	3.7° (4.5°)			
	not supported	(4.8°)	(5.8°)	(4.3°)	(3.4°)	(2.8°)	(2.3°)			
0	4-point supported	4.8° (4.8°)	9.9° (10.6°)	7.1° ( 8.2°)	5.5° (6.6°)	4.4° (5.2°)	3.7° (3.9°)			
	not supported		(5.7°)	(4.2°)	(3.3°)	(2.7°)				
-1.5	4-point supported		9.1° (9.1°)	7.0° (7.3°)	5.4° (5.8°)	4.4° (4.5°)				







# **DESIGNED ESPECIALLY** FOR HIGH PERFORMANCE, LIFTING CAPACITY AND **MAXIMUM RELIABILITY.**

Cutting-edge engine technology combined with intelligent hydraulics make the **TWH 236** one of the fastest and most sensitive handlers in waste handling. 15 metres of reach and an undercarriage width of three metres, make it a particularly stable machine - impressive machine statistics backed up by impressive machine performance.



#### Service weight without attachments

TWH 236	33.0-35.5 t
Diesel engine	
Manufacturer / model	Deutz TCD 6.1 L6
Design	6-cylinder in-line engine
Control	EEC IV
Functionality	4-stroke engine, direct common-rail fuel injection, turbocharger with charge air intercooling, controlled exhaust gas recirculation, diesel particle filter with a continuously regenerating system and SCR catalytic converter
Engine power	160 kW
Rated speed	2,000 rpm
Displacement	6.11
Cooling system	Water / charge air cooling with temperature-controlled fan speed
Exhaust emission standard	EU-Stage V
Fuel tank	315 I diesel
DEF / Urea tank	32 I Ad Blue
Electrical system	
Alternator	28 V / 100 A
Operating voltage	24 V
Battery	$2\times12V$ / 110 Ah / 760 A (as per EN)
Lighting system	$2\times LED$ floodlights at the front of the machine, rear parking lights and indicator lights
Travel drive	
	nitely variable axial piston motor with directly 2-gear transmission, all-wheel drive
Travel speed 1st Gear	max. 5 km/h
Travel speed 2nd Gear	max. 17 km/h
Gradeability	max. 35 %
Turning radius	9.2 m
Slewing drive	
Slewing ring	Double slewing ring with inner teeth
Drive	2-stage planetary gear with integrated multi-disk brake
Uppercarriage swing speed	0-7 rpm infinitely variable
Slewing lock	Electronically activated

Front axle	Planetary drive axle with integrated drum brake, rigidly mounted, max. steering angle 27°
Rear axle	Planetary drive axles with integrated drum brake, with self aligning bearing and switching oscillating lock
Outriggers	4-point stabilisers
Tyres	Elastic, solid rubber 8 × 12.00-20
Brakes	
Service brake	Hydraulically operated single-service brake system acting on all four wheel pairs
Parking brake	Electronically-operated disc brake on the driving transmission acting on both axles
Hydraulic system	
Max. flow rate	2 × 330 l/min
Max. operating pressure	320 / 360 bar
Hydraulic oil tank	366 I
Operator's cab	
Cab	Continuously variable elevation system up to a viewing height of 5.6 m. Soundproof, insulating panoramic windows enabling allround visibility, windscreen with pull-down sunblind, roof skylight, cab door sliding window, sliding door
Air conditioning	Automatic climate control. Infinitely variable water heating with 8-speed fans, 10 adjustable nozzles, 4 set into the roof lining and 3 defrosting nozzles
Operator's seat	Air-sprung comfort seat with integrated headrest, safety belt and lumbar support, optional seat heating. It allows for comfortable working by offering universal adjustment possibilities of the seat position, the seat incline, and the position of the seat cushion in relation to the armrests and pilot controls
Monitoring	Ergonomically-arranged, anti-glare controls, multi-functional display, automatic monitoring and storage of deviating operating conditions, (e.g. all hydraulic oil filters hot/cold hydraulic oil temperature, coolant temperature and charge air temperature, diesel particle filter load), visual and acoustic warning up to the point of shutting feed forward control or reducing engine output. Individual sensor diagnosis using the multi-functional display, rear camera and side camera
Noise level	Sound power level (outdoor area) $L_{\rm WA}$ 98.8 dB(A) (measured) as per directive 2000/14/EC $L_{\rm WA}$ 101 dB(A) (guaranteed) as per directive 2000/14/EC Sound power level (inside the cab) as per the directive ISO 6396 $L_{\rm DA}$ 70 dB(A)

Engine	Standard	Option
Intercooler and coolant radiator	•	
Direct electronic fuel injection / common rail	•	
Advanced automatic idle incl. engine shut-off function	•	
Engine preheating		•
Engine diagnostics interface	•	
Temperature-dependent fan drive	•	
Undercarriage		
All-wheel drive with differential	•	
Drum brakes	•	
Rear axle oscillating lock	•	
2-speed powershift transmission		•
4-point stabilisers	•	
Dozer blade in addition to 4-point stabilisers		•
Stabiliser cylinders with integrated two-way check valves	•	
Piston rod protection on stabiliser cylinders	•	
Tool box	•	
Special paint (customer paint work)		•
Solid rubber tyres (12.00-20) with intermediate rings	•	
Uppercarriage		
Separate cooling system for engine and hydraulic oil cooler	•	
Cooling system with temperature-dependent fan drive	•	
Fan drive reversing function		•
Automatic central lubrication system	•	
Rear view camera	•	
Side view camera	•	
Electric refuelling pump		•
Lighting protection		•
Special paint (customer paint work)		•

Hydraulically adjustable cab  Safety glass  Sliding window in cab door  Glass ceiling  Reinforced glass (windscreen and roof panel) P5A  Roof washer system (roof panel)  Air-cushioned operator seat with headrest, seatbelt, and lumbar support Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)  Fuchs Telematics System, incl. 2 years service	Cab	Standard	Option
Sliding window in cab door Glass ceiling Reinforced glass (windscreen and roof panel) P5A Roof washer system (roof panel) Air-cushioned operator seat with headrest, seatbelt, and lumbar support Seat heating Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Multi-function display Document clip Roof guard grille Protective grilles to front and roof 12 V transformer Radio USB & Bluetooth (EU & USA) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Hydraulically adjustable cab	•	
Glass ceiling Reinforced glass (windscreen and roof panel) P5A Roof washer system (roof panel) Air-cushioned operator seat with headrest, seatbelt, and lumbar support Seat heating Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Multi-function display Document clip Roof guard grille Protective grilles to front and roof 12 V transformer Radio USB & Bluetooth (EU & USA) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Safety glass	•	
Reinforced glass (windscreen and roof panel) P5A  Roof washer system (roof panel)  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Sliding window in cab door	•	
Roof washer system (roof panel)  Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Glass ceiling	•	
Air-cushioned operator seat with headrest, seatbelt, and lumbar support  Seat heating  Joystick steering  Steering column, height and tilt adjustable  Automatic air conditioning system  Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Reinforced glass (windscreen and roof panel) P5A		•
seatbelt, and lumbar support Seat heating Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Multi-function display Document clip Roof guard grille Protective grilles to front and roof 12 V transformer Radio USB & Bluetooth (EU & USA) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Roof washer system (roof panel)		•
Joystick steering Steering column, height and tilt adjustable Automatic air conditioning system Independent heating system Multi-function display Document clip Roof guard grille Protective grilles to front and roof 12 V transformer Radio USB & Bluetooth (EU & USA) 12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	seatbelt, and lumbar support	•	
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Automatic air conditioning system  Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Joystick steering	•	
Independent heating system  Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Steering column, height and tilt adjustable		•
Multi-function display  Document clip  Roof guard grille  Protective grilles to front and roof  12 V transformer  Radio USB & Bluetooth (EU & USA)  12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Automatic air conditioning system	•	
Document clip  Roof guard grille  Protective grilles to front and roof  12V transformer  Radio USB & Bluetooth (EU & USA)  12V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Independent heating system		•
Roof guard grille Protective grilles to front and roof  12 V transformer Radio USB & Bluetooth (EU & USA)  12 V socket Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED  LED front headlights  LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Multi-function display	•	
Protective grilles to front and roof  12V transformer  Radio USB & Bluetooth (EU & USA)  12V socket  Fire extinguisher, dry powder Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Document clip	•	
12V transformer Radio USB & Bluetooth (EU & USA)  12V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Roof guard grille		•
Radio USB & Bluetooth (EU & USA)  12V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Protective grilles to front and roof		•
12 V socket  Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	12 V transformer		•
Fire extinguisher, dry powder  Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Radio USB & Bluetooth (EU & USA)		•
Travel alarm w/ rotating beacon  Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	12 V socket	•	
Other equipment  Close proximity range limiter for dipper stick  Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Fire extinguisher, dry powder		•
Close proximity range limiter for dipper stick Coolant and hydraulic oil level monitoring system  Filter system for attachments Hose rupture valve for boom cylinder Hose rupture valve for stick cylinder Overload warning device Quick coupling on dipper stick Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Travel alarm w/ rotating beacon		•
Coolant and hydraulic oil level monitoring system  Filter system for attachments  Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Other equipment		
Filter system for attachments  Hose rupture valve for boom cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Close proximity range limiter for dipper stick	•	
Hose rupture valve for boom cylinder  Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Coolant and hydraulic oil level monitoring system	•	
Hose rupture valve for stick cylinder  Overload warning device  Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Filter system for attachments		•
Overload warning device Quick coupling on dipper stick  Dipper stick impact protection Active cyclone prefilter (TOP AIR) Hydraulic oil preheating Lubrication of the grab suspension by central lubrication system Light packages LED  LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Hose rupture valve for boom cylinder		•
Quick coupling on dipper stick  Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Hose rupture valve for stick cylinder		•
Dipper stick impact protection  Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Overload warning device		•
Active cyclone prefilter (TOP AIR)  Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Quick coupling on dipper stick	•	
Hydraulic oil preheating  Lubrication of the grab suspension by central lubrication system  Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Dipper stick impact protection		•
Lubrication of the grab suspension by central lubrication system Light packages LED  LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Active cyclone prefilter (TOP AIR)		•
by central lubrication system Light packages LED LED front headlights LED working lights cabin roof front Boom cylinder damping system (piston accumulator)	Hydraulic oil preheating		•
LED front headlights  LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	ŭ i	•	
LED working lights cabin roof front  Boom cylinder damping system (piston accumulator)	Light packages LED		•
Boom cylinder damping system (piston accumulator)	LED front headlights	•	
	LED working lights cabin roof front	•	
Fuchs Telematics System, incl. 2 years service	Boom cylinder damping system (piston accumulator)		•
	Fuchs Telematics System, incl. 2 years service	•	

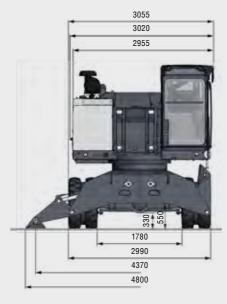
Specification subject to change without notice.

Further optional equipment available on request! Specification subject to change without notice.

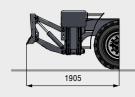


Undercarriage equipped with 4-point stabilisers





Dozer blade in addition to 4-point stabilisers





#### **Transport Dimensions**

(all dimensions in mm)

15.0 m reach with dipper stick



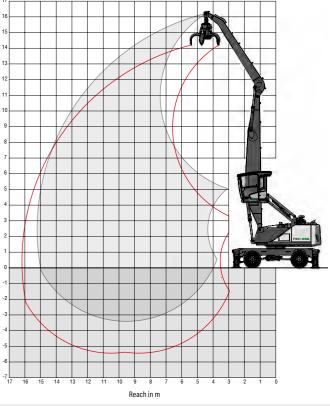
### 15.0 m reach with dipper stick

#### Loading equipment

Boom: 8.5 m

Dipper stick: 6.2 m

Cactus grab: 0.6 m<sup>3</sup>



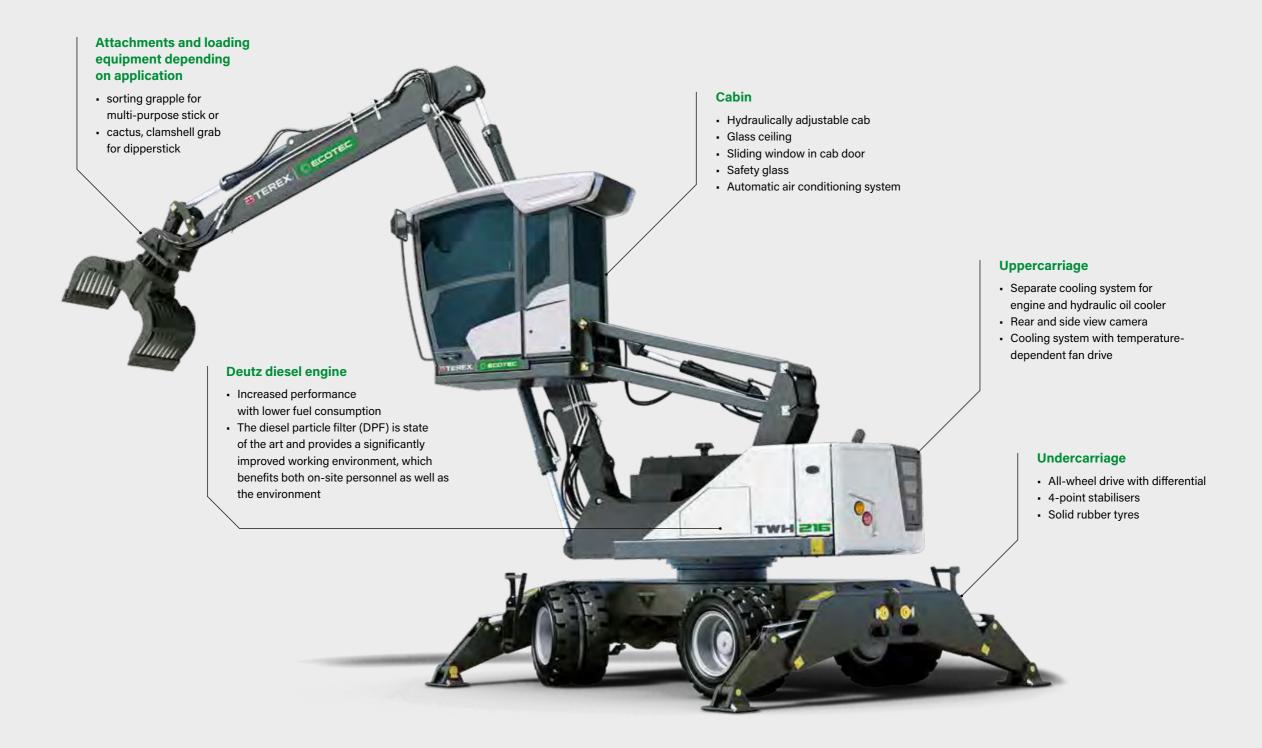
The lift capacity values are stated in metric tons (t). The pump pressure is 360 bar. In accordance with ISO 10567 the lift capacity values represents 75% of the static tipping loads or 87% of the hydraulic lifting force (marked '). On solid and level ground the values apply to a swing range of 360°. The (...) values apply in the longitudinal direction of the undercarriage. The values for "not supported" only apply via the steering axle or the locked oscillating axle. The weights of the attached load hoisting equipment (grab, load hock, etc.) must be deducted from the lift capacity values. The working load of the lifting device must be observed. In accordance with the EN 474-5 for object handling application hose rupture valves on the boom and stick cylinders, an overload warning device and the lift capacity table in the cab are required. For object handling application the machine has to be supported on a level ground.

Height [m]	Undercarriage	Reach [m]							
	outrigger	4.5	6	7.5	9	10.5	12	13.5	15
15	not supported		(5.5°)	(3.7°)					
ıə	4-point supported		5.5° (5.5°)	3.7° (3.7°)					
13.5	not supported			(5.7°)	(4.3°)				
13.3	4-point supported			5.7° (5.7°)	4.3° (4.3°)				
12	not supported			(6.5°)	(5.5°)	(4.1°)			
	4-point supported			6.5° (6.5°)	5.7° (5.7°)	4.3° (4.3°)			
10.5	not supported			(7.2°)	(5.5°)	(4.2°)	(3.2°)		
10.5	4-point supported			7.2° (7.2°)	6.6° (6.6°)	5.6° (5.6°)	3.8° (3.8°)		
9	not supported			(7.4°)	(5.4°)	(4.1°)	(3.2°)	(2.5°)	
	4-point supported			7.6° (7.6°)	6.7° (6.7°)	5.9° (5.9°)	5.1° (5.1°)	2.6° (2.6°)	
7.5	not supported			(7.1°)	(5.3°)	(4.0°)	(3.2°)	(2.5°)	
7.5	4-point supported			8.0° (8.0°)	6.9° (6.9°)	6.0° (6.0°)	5.1° (5.3°)	4.1° (4.1°)	
6	not supported		(9.7°)	(6.7°)	(5.0°)	(3.9°)	(3.1°)	(2.5°)	
U	4-point supported		10.5° (10.5°)	8.5° (8.5°)	7.1° (7.1°)	6.2° (6.2°)	5.0° (5.4°)	4.1° (4.8°)	
4.5	not supported	(13.9°)	(8.8°)	(6.3°)	(4.7°)	(3.7°)	(3.0°)	(2.4°)	(2.0°)
	4-point supported	16.3° (16.3°)	11.6° (11.6°)	9.0° (9.0°)	7.4° (7.4°)	6.1° (6.3°)	5.0° (5.5°)	4.1° (4.8°)	2.9° (2.9°)
3	not supported	(6.4°)	(7.9°)	(5.8°)	(4.4°)	(3.5°)	(2.8°)	(2.3°)	(1.9°)
	4-point supported	6.4° (6.4°)	12.5° (12.5°)	9.5° (9.5°)	7.4° (7.7°)	5.8° (6.4°)	4.8° (5.5°)	4.0° (4.7°)	3.4° (3.4°)
1.5	not supported		(7.1°)	(5.3°)	(4.1°)	(3.3°)	(2.7°)	(2.3°)	(1.9°)
1.0	4-point supported		10.3° (10.3°)	9.2° (9.7°)	7.1° (7.8°)	5.6° (6.4°)	4.7° (5.4°)	3.9° (4.6°)	3.3° (3.3°)
0	not supported		(6.7°)	(5.0°)	(3.9°)	(3.2°)	(2.6°)	(2.2°)	(1.9°)
	4-point supported		7.0° (7.0°)	8.9° (9.5°)	6.8° (7.6°)	5.5° (6.3°)	4.5° (5.2°)	3.9° (4.3°)	3.0° (3.0°)
-1.5	not supported		(6.5°)	(4.9°)	(3.8°)	(3.1°)	(2.6°)	(2.2°)	
-1.5	4-point supported		6.5° (6.5°)	8.7° (8.7°)	6.7° (7.1°)	5.4° (5.9°)	4.5° (4.8°)	3.8° (3.8°)	
-3	not supported			(4.8°)	(3.8°)	(3.1°)			
	4-point supported			7.6° (7.6°)	6.3° (6.3°)	5.2° (5.2°)			

2.5	not supported	(1.9°)
2.5	4-point supported	2.4° (2.4°)



Max. reach 15.2 m





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