



1404 ZW · 1404 ZW Friction wheel · 1604 ZW · 16.5 to 22 Tons

SAFE. POWERFUL. RELIABLE.

RAIL-ROAD EXCAVATOR





SAFE. POWERFUL. RELIABLE.

BUILDING ON TECHNOLOGY - High-tech excavator for use on rails

TEREX rail-road excavators were specially developed for use on rails and combine optimum mobile excavator technology with the most up-to-date know-how for rail use. This is your guarantee for top performance, even with difficult track conditions.

We were the first to put an excavator on rails in 1965. We were market and technology leaders in this field back then and still are today. As the sole world-wide supplier, we offer the computer assisted rail contact pressure system (CARSY). We are the sole manufacturer in Europe of rail-road, short tailswing excavators. We can offer any chassis configuration to fit any rail network for our world-wide customers.

Take advantage of our many years of know-how and experience for your application: on rail, alongside the track and mounted on the railway wagon.



The right choice every time -
We offer rail-road excavators of two types.
In particular, the excavators comply with
the latest construction requirements of the
German Federal Railways

1404 ZW with the CARSY-System
17 to 20 t
69 kW (94 HP)
Tailswing: 1575, 1750, 2000 mm

1404 Friction wheel
16.5 to 17.5 t
69 kW (94 HP)
Tailswing: 1575, 1750, 2000 mm

1604 ZW with CARSY-System
21 to 22 t
93 kW (127 HP)
Tailswing: 1750, 2000 mm



TEREX - the world's fastest growing construction equipment manufacturer

TEREX is one of the most influential corporations in the construction equipment industry with market leading products and brands. We offer more than 700 products, suitable for almost any application. Over 16 000 employees world-wide make up the TEREX family. Turnover has grown from \$400 million nine years ago to over \$6 billion in 2005.

TEREX is now the third largest construction equipment manufacturer word-wide.



The rail-road excavator

A PLEASURE IN OPERATION

Safety, power and fast and comfortable operation set our rail-road excavator apart, making it amongst the most pleasurable machines to operate on rail or on site.

Speed - working faster than ever

- The required pressures on the rail guidance wheels are automatically set when the 1404 ZW and 1604 ZW are re-railed. No awkward external adjusting screw to set the contact pressure on the tyres.
- Innovative AWE 4 technology for sensitive, proportional control of all movements irrespective of load. Travel and work simultaneously. This is the big advantage to you.
- Front and rear wheels can be controlled independently (not with the friction wheel version).
- Simple de- and re-railing ensure high operating comfort for fast, safe and efficient operation.

Drawbar pull

- Faster on the construction site: the enormous power allows you to use our rail-road excavator as a "shunting locomotive". Both models are approved for 40 T un-braked trailer weight and 120 T braked trailer weight. We can also supply with a wagon brake on request.

Precise operation - optimised for the track

- 4 outrigger stabilisers (with the 1604 chassis) adapt optimally to the rail embankment.
- Customised specification: tailor your excavator precisely to your requirements from the various superstructures and chassis, for example the superstructure of the 1404 ZW can be mounted on the chassis of the 1604 ZW for maximum stability with ultra short tailswing.
- Counterweights suitable for the application can be rapidly changed.
- The loading gauge for wagons is met.





A space-saver – great when it gets tight

- Rail-road excavator with ultra short tailswing. Choose between the different counterweight options.
- The 1404 ZW features the shortest tailswing on the market at 1575 mm making it suitable without restriction for any spacings between rail tracks.
- For narrow gauge tracks, use the 1404 ZW rail-road excavator friction wheel with its narrow axles.

Reliable – because every minute counts

Our market leadership is based on our well-proven technology – tried and tested a thousand times over in the most arduous applications. High-tensile steels, robust electric and electronic components as well as excellent workmanship in all hydraulic components ensure that the excavator is the reliable heart on any construction site.

You work, we protect

THOROUGHLY DESIGNED

Stability

- Low centre of gravity ensures optimum stability in operation.
Assisted by a transverse mounted engine.

Safe on rails

- The outriggers are automatically lifted when the "drive" function is selected.
This avoids damage during rail operation.
- Continuous monitoring of contact pressure. (not friction wheel version)
- The air reservoirs of the wagon brake are located in the superstructure and chassis and are very well protected.
- De-railing of the bogie by the outriggers is automatically eliminated.





Electronic slew and height limitation

- Computer assisted slew limitation, which proportionally reduces the superstructure speed electronically when the limit is reached.
- Electronic height limitation eliminates the risk of the excavator boom from coming into contact with obstacles above such as power cables. The maximum articulating boom height, relative to the point of reference, is taken into account. The system recognises whether the clamshell or bucket are fitted and adjusts the programmed operating height accordingly. The motion stops when the programmed limit is reached.
- Slew and height limitation can be comfortably programmed from the operator's seat. It is not necessary to get out of the machine.

Emergency de-railing

- Emergency de-railing is permanently available and doubly protected. Firstly by connecting the hydraulics to the cigarette lighter via an electric cable. Secondly by a fixed emergency hydraulic hand-pump.
- An electric emergency pump is available as an option.
- Emergency lowering of the rail bogie is permanently available.





Superstructure - highlights



Engine

POWER

Deutz turbo-charged engines provide fast and powerful motions, a powerful drive train, fast cycle times and dynamic development in performance.

Outstanding engine characteristics:

- Exceptional power development from 1500 rpm.
- Turbo-charged with intercooler.
- Maintenance friendly filter change.
- High degree of comfort thanks to the low noise level.
- Low operating costs through exceptional fuel efficiency and low maintenance costs.
- Current emission standards are met.
- Option: automatic idle running. When the excavator is not working or moving, the engine speed automatically reduces and fuel consumption is lowered.

Hydraulics

PRECISION CONTROL

- The rail-road excavators are fitted with well-proven load-sensing hydraulics. Our intelligent AWE 4 hydraulic management system allows simultaneous movements to be carried out irrespective of load. For greater productivity and safe operation.
- The power you need, at the right time. For fast cycles or high lifting capacity: our load-sensing system attunes the method of operation of the excavator exactly to your application. For greater economy – you save fuel and maintenance costs.



What you should also know

- Primary and secondary overload protection.
- Anti-cavitation valves for all operating functions.
- Overload lock valves, precision lowering valves and travel brake valve.
- Pipe burst protection on the lift cylinder. Optionally also on adjusting and articulating cylinders.
- Emergency steering and pressure reservoir for emergency lowering of the boom system.



Cab

FAR-SIGHTEDNESS

Our roomy two-man cab is the largest on the market and provides everything you need to work comfortably and efficiently.

Everything always in full view

- Two-man cab with excellent all-round vision.
- Optimum lay-out of the controls provides clear view of the attachment.
- Optional: rear view monitoring with camera and display.

Welcome to the "Feel-good" workplace

- The cab is very well isolated from vibrations.
- The sound pressure level is very low thanks to the high quality sound insulation.
- Air conditioning is standard incl. a defrosting function for fast de-misting and de-icing of the windscreen.
- The operator's seat is individually adjustable in all movements. Backrest, lumbar support, cushion length and angle can all be easily adjusted. Air suspension is available as an option.
- The narrow steering column gives excellent vision to the attachment and the rail bogie.





Chassis - Highlights

GUIDANCE FORCE

Numerous components ensure safe and strong contact between chassis and rail.

Go into (rail) guidance mode

Our **CARSY** system (Computer assisted rail contact pressure system) electronically ensures the optimum pressure on the rail is maintained continuously and automatically.

- The required pressures are automatically set, continuously monitored and adjusted if necessary.
- The front and rear bogie wheels can be independently switched to permit simple de-railing and positive by-passing of rail points.
- Automatic self-diagnostics of the electronics.
- Available for 1404 ZW and 1604 ZW models.

Operation at the optimum level

- Continuous self-levelling of the rail running gear ensures smooth movement of the rail-road excavator when travelling on rail.

Optimum grip

- Bogie axle box with optimum oscillation in the axle mountings.
The successful result: safe operation especially on uneven construction site tracks and in cornering
- With the friction wheel model, traction is via a non-slip friction roller.





Stable

The low centre of gravity and our compact design are a guarantee of good stability combined with excellent rough terrain performance.

First choice

The right chassis for any application: with or without outriggers with different track widths and different wheelbases.

Driving power

Whether in creep speed or top speed – the high torque drives the excavator quickly and safely through any terrain, assisted by the well-proven traction characteristics of our tyres. The sensitive power assisted steering on the oscillating axle transforms any rough terrain into a “straight road”. Even at high-speed road travel, the 04 series impresses through its road holding and thereby provides excellent handling characteristics.

The chassis incorporates robust, specially designed excavator axles with planetary drives in all 4 wheel hubs. All wheel drive is standard, a variable engine and a double acting brake valve

Reliability – here we are playing it safe

- Tie-down lugs for fast and safe securing of the excavator for transport on rail or road.
- Steering axle with automatic oscillation lockout to allow travel with heavy loads in any terrain. Activation of the lockout either automatically when braking or manually.

Other safety aspects

- Brakes: wet, maintenance-free multi-disc brake
- excellent emergency steering characteristics





Attachments-Highlights

SELECTED

All components are designed for high loads, optimum grab curves and fast functional and travel speeds. The design advantages of our arms lie in our well proven welding methods. They are lighter while maintaining the same robustness.

Large choice -
booms and arms

Load capacity, radius as well as ripping and tear-out forces can be precisely attuned to the job in hand through wide range of boom / arm combinations.

Adjustable boom

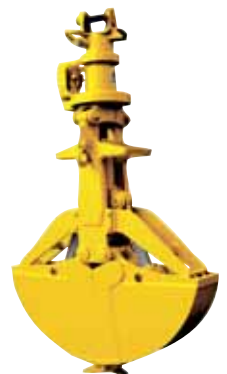
Our hydraulically telescoping adjustable booms offer a wide range of load and height combinations.

Articulating arms -
specially developed for rail laying

Our special articulating arm can be fully extended for maximum height of lift under the cat wire.

Cylinders with long service life

Every cylinder is designed for maximum loads according to the capacity of the machine. The high level of safety in articulating, the high quality treated surface of the piston rod and special sealing systems ensure long service life.



Equipment-Highlights

PROFESSIONAL ATTACHMENTS

We manufacture our equipment in standard or customised versions to the most up-to-date machinery and steel construction standards. High tensile steel, well-proven technology and decades of experience are a guarantee for cost effective and practical operation.

Bucket

All high-wear components are made in high tensile, hardened fine-grained steel. Easy crowding is achieved by the fine-cut of the slightly conical shaped bucket. The teeth holders are of an especially flat design or are integrated into the cutting edge. This results in less grab resistance and allows more operational movements. We also offer you different shapes of teeth for different types of soil.

Grab

The right grab for any application – the comprehensive range offers attachments in one or multiple cylinder versions as well as two or multiple clamshell types.

Special attachments for use on rail

- Multi-functional rotator for bucket tools
- Short design double clamshells for digging between sleepers
- Short design gravel grab
- Sleeper replacer with hydraulic sleeper grab
- Mulcher
- Tamping attachment
- Keyhole shears/keyhole saw



Optionally, all additional hydraulic attachments can be controlled by an easy to use pressure balance.

Maximum flexibility – quick release equipment

Our quick release equipment affords you the maximum flexibility in selecting the required attachment. The simple and robust design of our mechanical and hydraulic quick release equipment allows you to change the attachment with the least possible effort.



Service and maintenance

SIMPLICITY

Simple and convenient maintenance of the machine to preserve the residual value



Optimum maintenance

- Service friendly maintenance flaps make the job easier.
- All lubrication points for the slew ring and /or the arm equipment are grouped together.
- The main components are clearly visible to make daily oil inspections convenient and the battery is easily accessible.
- To allow fast inspection of the machine by our service personnel, all operationally significant areas are equipped with measuring points.
- Good maintenance: the CARSY system records operational data, which can be quickly and easily read by our service personnel.

Expert service

The service personnel of our distributors are intensively trained in our technology at our plant to assure expert service for you at any time.

Hydraulic filters

A special method adopted by us allows the filter basket to be re-used time and again. Only the cartridge is replaced. This protects the environment and saves on disposal costs.

Long service life

Long service life is achieved by planned maintenance and service inspections and the use of original replacement parts.

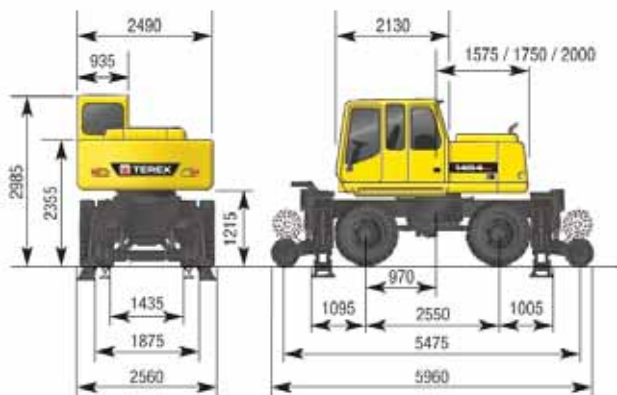




Technical specification sheet road-rail excavator 1404 ZW

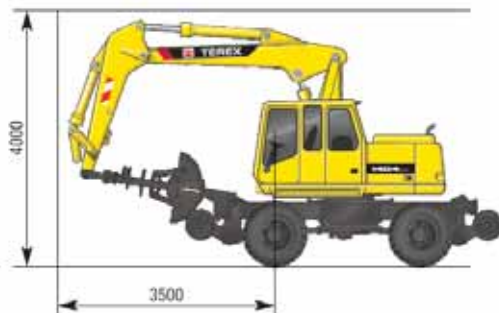
Main measurements

Base machine A 41.5 — with 4 outriggers



Travel configuration with grab

Base machine A 41.4 — without outriggers



Equipment

		Weight /kg
Base machine		
A 41.4	ATLAS- Rail-Road hydraulic excavator 1404 ZW Without outriggers Tailswing 1575 mm	13100
A 41.5	ATLAS-Rail-Road hydraulic excavator 1404 ZW With 4 outriggers Tailswing 1575 mm	15500
Additional and special equipment		
B 41.20	Heavy counterweight, Tailswing 1750 mm	400
B 41.21	Heavy counterweight Tailswing 2000 mm	1000
B 41.39	Additional hydraulic unit for variable boom cylinder	20
B 41.41	Pipe burst protection, lift cylinder and overload warning system	10
B 41.23	Two man fully glazed cab	300
Base section of arm and boom		
C 53.41P	Base arm with two lift cylinders and an internally mounted operating cylinder	
C 53.46	Boom with articulating cylinder only for base arm C 53.41P	930
Articulating arm		
D 41.22	Articulating arm Rail-Road excavator, Effective length 2200 mm	490
Bucket tilt cylinder		
F 53.1	Bucket tilt cylinder with reversing linkage	165

Standard basic equipment

- Maintenance point for filtration system
- Hydraulic system for grab and grab rotation function
- Tank level indicators
- Main battery switch in the negative circuit
- "Drive" function via foot control
- Pressure reservoir for emergency lowering of the boom system
- Sliding windows in the cab door
- Windscreen washer
- Central lubrication
- Infinitely variable angle and length adjustment of the steering column
- Preparation for radio
- Storage in the cab
- Comfort seat with armrests and lumbar support
- Tool box in the chassis
- Sealed pivot points in the base section of the boom
- Boom and articulating arm with 50 hour maintenance intervals
- Securing lug for securing the grab during road travel
- Air conditioning
- Air dryer for compressed air system
- Narrow axles for underground and suburban railways

Rail guidance

Track width 1435 mm, other widths available on request.

ATLAS CARSY (Computer assisted rail contact pressure system)
Automatic system for controlling and monitoring the contact pressure of the rail guidance wheels. The pressures are automatically set to the required pressure, continuously monitored and adjusted if necessary. Depending on the pre-selected operating condition, each separate guidance bogie wheel is set to a different pressure in accordance with a prescribed schedule, locked or hydraulically trailed.

The front and rear bogie wheels can be independently switched to permit simple de-railing and positive crossing of rail points.

Automatic diagnostics of the electronics. Emergency function: de-railing is assured even in the event of a fault or complete breakdown.

Engine

Output (acc. to ISO 1585)	73 kW (99 HP)
Effective output locked	69 kW (94 HP)
Manufacturer	Deutz
Type	BF4M 2012
Capacity	4000 cm ³
RPM	2100 min ⁻¹
Inter-cooler	turbo-charged

Hydraulic equipment

Computer controlled AWE4 system with a load limiting high performance piston pump and fuel efficient on-demand power control for sensitive, proportional and load independent ramp-up of all operational movements. Primary and secondary protection of the hydraulic system against overload. Anti-cavitation valve for all operational functions as well as restrictors in the lift and articulating circuits. Load check and feathering valves in the lift circuit

Hydraulic system	1xAKP
Main pump	HPR 105
Max. flow variable capacity pump	220 l/min
Max. operating pressure for operating movements	340 bar

Noise level

Noise level* is significantly below EU limits	
Drive-by noise level (LwA)	101 dB (A)
Cab noise level (LpA)	75 dB (A)

*Dynamic sound level measurement according to 2000/14 EG

Electrical Equipment

Operating voltage	24 Volt
Cold-start heavy duty battery	2 x 100 Ah
All electrical equipment in accordance with road regulations	

Brakes

Brakes	pneumatic-hydraulic drum brake
Parking brake	air activated spring

* Emergency brake for use on rail	
max. un-braked trailer load	40 t
max. trailer load with wagon brake	120 t

Fill quantities

Fuel tank	190 l
Hydraulic tank	200 l
Engine oil	10 l

Cab

Flexibly mounted • Heat resistant extra wide windscreen for all-round vision
 • Non-reflecting interior • Ergonomic pilot control levers
 • Adjustable steering column • Lengthways adjustment of the seat independent of the control console • Front windscreen stowable under the cab roof • Second seat for mate

Type	ATLAS 935 two-man comfort cab
Overall length	2130 mm
Width	935 mm

Slew unit

Slew motor	axial piston pump with priority valve
Slew gearbox	planetary reduction
Slew brake*	Multi-disc parking brake
Drive via an internally toothed slew bearing	
Slewing speed	8.5 min ⁻¹
Slew torque	37.5 kNm

* simple slewing on slopes against the incline is assured, with locking foot pedal when slewing pressure of 120 bar is exceeded.

Drive train

40 t special excavator axles with planetary drives to all four wheel hubs
 • All-wheel drive • Variable drive engine • Double acting travel brake valve
 • Travel direction selector with steering column mounted lever or switch on pilot control lever • Steering axle with automatic oscillation lock
 • Travel controls via foot pedal valve

Speed

Road and rail operation	
creep speed	max. 1.0 km/h
infinitely variable off-highway speed	max. 5.0 km/h
infinitely variable highway speed	max. 20 km/h
Rail guidance, track width 1435 mm, other widths on request	

Tyres

8 x	10.00 - 20 tyres
(inner tyre - highway, outer tyre - off highway)	

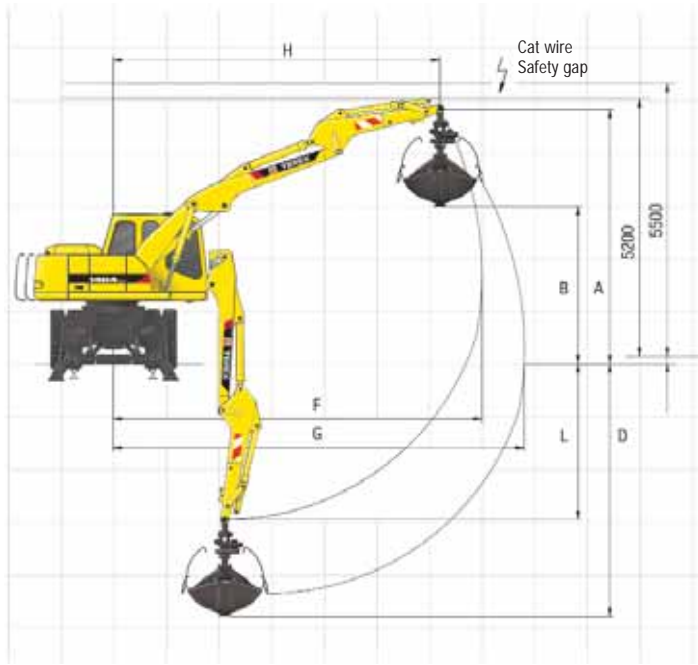
Weight

Operating weight	17.0 - 20.0 t
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Technical specification sheet Rail-Road excavator 1404 ZW

Working range grab

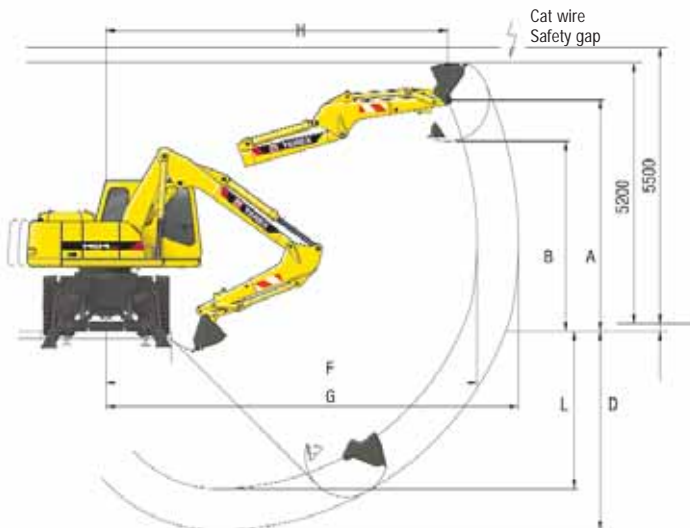


Articulating arm D 41.22 – effective length 2200 mm

Equipment: A 41.5, C 53.41 P, C 53.46, D 41.22, F 31, E 332, E 344

		Grab
A	Height of articulating arm	mm 4980
B	Tipping height	mm 3020
D	Max. digging depth	mm 5170
F	Max. radius	mm 7400
G	Max. reach	mm 8250
H	Max. arm position	mm 6605
J	Max. reach height	mm –
L	Bucket pivot point	mm 3205
Grab	I	350
	Grab clamping force	kN 73.0
	Operating weight	t 19.3

Working range bucket



Articulating arm D 41.22 – Effective length 2200 mm

Equipment: A 41.5, C 53.41 P, C 53.46, D 41.22, F 53.1, G 649

		Bucket
A	Height of articulating arm	mm 4465
B	Tipping height	mm 3715
D	Max. digging depth	mm 4300
F	Max. radius	mm 7400
G	Max. outreach	mm 8495
H	Max. arm position	mm 6850
J	Max. reach height	mm 5200
L	Bucket pivot point	mm 3205
Bucket	I	700
	Ripping force	kN 82
	Tear-out force	kN 130
	Operating weight	t 19.0

Base machine A 41.5, C 53.41 P, C 53.46, D 41.22

Tailswing 1750 mm

4 outriggers

Hook height m	3.0 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	
	5	a	-	-	5.3	5.3	5.4	4.6	4.9	3.4	-
	b	-	-	5.3	4.0	5.4	2.9	4.9	2.2	-	-
4	a	-	-	6.6	6.3	5.6	4.6	4.9	3.5	3.8	2.6
	b	-	-	6.6	3.9	5.6	2.9	4.9	2.2	3.8	1.6
3	a	-	-	7.5	6.1	6.0	4.5	5.1	3.5	4.6	2.6
	b	-	-	7.5	3.8	6.0	2.8	5.1	2.2	4.6	1.6
1	a	10.5	8.6	8.5	6.1	6.6	4.4	5.4	3.3	4.6	2.6
	b	10.5	4.9	8.5	3.7	6.6	2.8	5.4	2.1	4.6	1.5
0	a	11.6	8.4	8.5	5.9	6.6	4.3	5.4	3.2	4.2	2.5
	b	11.6	4.6	8.5	3.6	6.6	2.8	5.4	2.0	4.2	1.5
-1	a	12.1	8.2	8.6	5.8	6.7	4.2	5.4	3.2	-	-
	b	12.1	4.5	8.6	3.4	6.7	2.6	5.4	1.9	-	-
-2	a	12.4	8.1	8.9	5.7	6.6	4.1	-	-	-	-
	b	12.4	4.4	8.9	3.4	6.6	2.4	-	-	-	-

Tailswing 1750 mm

no outriggers

Hook height m	3.0 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	
	5	a	-	-	5.3	4.7	5.4	3.4	4.2	2.5	-
	b	-	-	5.3	3.6	5.4	2.6	4.9	1.9	-	-
4	a	-	-	6.6	4.6	5.6	3.4	4.3	2.6	3.2	1.9
	b	-	-	6.6	3.5	5.6	2.6	4.9	1.9	3.8	1.4
3	a	-	-	7.5	4.5	5.5	3.3	4.3	2.5	3.2	1.9
	b	-	-	7.5	3.4	6.0	2.5	5.1	1.9	4.6	1.4
1	a	10.5	6.7	7.6	4.4	5.5	3.3	4.1	2.4	3.1	1.8
	b	10.5	4.8	8.5	3.3	6.6	2.4	5.4	1.8	4.6	1.3
0	a	11.6	6.4	7.7	4.3	5.4	3.1	4.0	2.3	3.1	1.8
	b	11.6	4.6	8.5	3.1	6.6	2.3	5.4	1.7	4.2	1.3
-1	a	12.1	6.2	7.7	4.1	5.3	3.0	3.9	2.3	-	-
	b	12.1	4.4	8.6	3.0	6.7	2.2	5.4	1.6	-	-
-2	a	12.4	6.1	7.6	4.1	5.2	2.9	-	-	-	-
	b	12.4	4.3	8.9	3.0	6.6	2.1	-	-	-	-

Tailswing 2000 mm

4 outriggers

Hook height m	3.0 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	
	5	a	-	-	5.3	5.3	5.4	5.0	4.9	3.8	-
	b	-	-	5.3	4.4	5.4	3.2	4.9	2.4	-	-
4	a	-	-	6.6	6.6	5.6	4.9	4.9	3.8	3.8	2.9
	b	-	-	6.6	4.3	5.6	3.2	4.9	2.5	3.8	1.8
3	a	-	-	7.5	6.6	6.0	4.9	5.1	3.8	4.6	2.9
	b	-	-	7.5	4.2	6.0	3.2	5.1	2.4	4.6	1.8
1	a	10.5	9.9	8.5	6.5	6.6	4.8	5.4	3.7	4.6	2.8
	b	10.5	6.0	8.5	4.1	6.6	3.1	5.4	2.3	4.6	1.8
0	a	11.6	9.9	8.5	6.5	6.6	4.7	5.4	3.6	4.2	2.8
	b	11.6	5.8	8.5	4.0	6.6	3.0	5.4	2.2	4.2	1.7
-1	a	12.1	9.7	8.6	6.3	6.7	4.6	5.4	3.5	-	-
	b	12.1	5.6	8.6	3.9	6.7	2.9	5.4	2.2	-	-
-2	a	12.4	9.7	8.9	6.3	6.6	4.5	-	-	-	-
	b	12.4	5.6	8.9	3.8	6.6	2.8	-	-	-	-

Tailswing 2000 mm

no outriggers

Hook height m	3.0 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	
	5	a	-	-	5.3	5.2	5.4	3.8	4.6	2.8	-
	b	-	-	5.3	4.0	5.4	2.9	4.9	2.2	-	-
4	a	-	-	6.6	5.1	5.6	3.7	4.6	2.9	3.5	2.1
	b	-	-	6.6	3.9	5.6	2.9	4.9	2.2	3.8	1.6
3	a	-	-	7.5	5.0	5.9	3.7	4.6	2.8	3.5	2.1
	b	-	-	7.5	3.8	6.0	2.8	5.1	2.2	4.6	1.6
1	a	10.5	7.4	8.2	4.9	5.9	3.6	4.5	2.7	3.5	2.1
	b	10.5	5.4	8.5	3.7	6.6	2.8	5.4	2.1	4.6	1.5
0	a	11.6	7.1	8.2	4.8	6.0	3.5	4.4	2.6	3.4	2.0
	b	11.6	5.2	8.5	3.6	6.6	2.7	5.4	2.0	4.2	1.5
-1	a	12.1	6.9	8.3	4.6	5.9	3.4	4.3	2.0	-	-
	b	12.1	5.0	8.6	3.4	6.7	2.6	5.4	1.9	-	-
-2	a	12.4	6.9	8.3	4.6	5.7	3.3	-	-	-	-
	b	12.4	5.0	8.9	3.4	6.6	2.5	-	-	-	-

a = travel on road permitted, b = travel on rail permitted, q = lateral, l = longitudinal

The specified max. effective load values in tons include a stability factor of 33% or are calculated at 87% of the hydraulic lift force in accordance with ISO 10567. These values apply at the tip of the arm with the arm system in optimum position.

Operating weights, tailswing

Type	Configuration	Operating weight with adjusting mechanism	Tailswing mm
1404 K ZW	A 41.40	16.6 t	1575
1404 K ZW	A 41.40	17.0 t	1750
1404 K ZW	A 41.40	17.6 t	2000
1404 K ZW 4 outriggers	A 41.50	19.0 t	1575
1404 K ZW 4 outriggers	A 41.50	19.4 t	1750
1404 K ZW 4 outriggers	A 41.50	20.0 t	2000

Approvals

The equipment marked * is an essential requirement of the German Federal Railways for operation on their network. The safety testing is conducted by the health and safety executive (Berufsgenossenschaft), compliance with the appropriate regulations is verified by the German Federal Railways and the TÜV.

Additional and special equipment

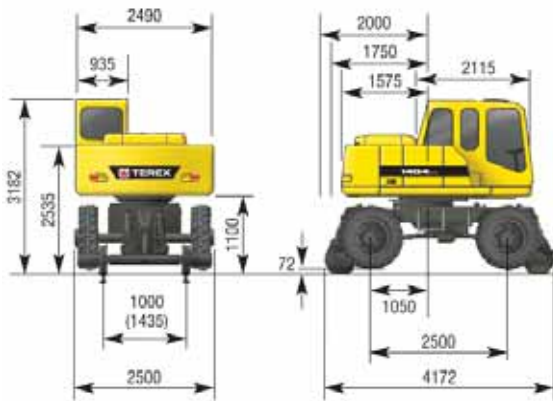
- Short tailswing version (1575, 1750, 2000 mm tailswing)*
- Two-man cab*
- Auxiliary heating
- Narrow axles for underground and suburban railways
- Combined check point for ease of filter maintenance
- Pipe burst protection with overload warning device (lift cylinder)*
- Trailer hitch on chassis*
- Emergency manual hydraulic pump*
- Special tow bar*
- German Federal Railways approved lights*
- Lift limitation electronically adjustable from the cab*
- Slew limitation adjustable from the cab*
- Wagon brake unit with footplate brake valve, permitted trailer load is 120 t
- Factory Federal German Railways approval with appropriate certification and all necessary accessories: fire extinguisher, fist aid kit, earth cable, red/white flag, torch with red dimmable light, loud hailer, digital speed measurement instrument, oil spill tarpaulin and oil binder*
- Rotating beacons
- Work lights
- Radio
- Fuel filling pump
- Rail bogie with track widths of up to approx. 1700 mm
- TÜV-approval

Items marked with * are a requirement for Federal German Railway approval

Technical specification sheet Rail-Road excavator / friction wheel 1404 ZW

Main dimensions

Base machine A 41.4 S



Travel configuration with grab

Base machine A 41.4 S



Equipment

Base machine	Weight/kg	Standard basic configuration
A 41.4 S ATLAS hydraulic Rail-Road excavator 1404 ZW with 1000 mm track Tailswing 1575 mm	13100	<ul style="list-style-type: none"> • Maintenance point for filtration system • Hydraulic system for grab and grab rotation function • Tank level indicators • Main battery switch in the negative circuit • "Drive" function via foot control • Pressure reservoir for emergency lowering of the boom system • Sliding windows in the cab door • Windscreen washer • Central lubrication • Infinitely variable angle and length adjustment of the steering column • Preparation for radio • Storage in the cab • Comfort seat with armrests and lumbar support • Tool box in the chassis • Sealed pivot points in the foot section of the boom • Boom and articulating arm with 50 hour maintenance intervals • Securing lug for securing the grab during road travel • Air conditioning • Air dryer for compressed air system • Narrow axles for underground and suburban railways
Additional and special equipment		
B 41.20 Heavy counterweight, Tailswing 1750 mm	400	
B 41.21 Heavy counterweight, Tailswing 2000 mm	1000	
B 41.39 Additional hydraulic system For variable boom cylinder	20	
B 41.41 Pipe burst protection, lift cylinder and overload warning system	10	
B 41.23 Two-man fully glazed cab 6032281 Conversion kit 1435 mm gauge	300	
Base arm and boom		
C 53.41P Base arm with two lift cylinders and an internally mounted operating cylinder	1090	
C 53.46 Boom with articulating cylinder Only for base arm C 53.41P	930	
Articulating arm		
D 41.22 Articulating arm Rail-Road excavator, Effective length 2200 mm	490	
Bucket tilt cylinder		
F 53.1 Bucket tilt cylinder with reversing linkage	165	
Rail guidance		
Four separate rail guidance wheels drive by a friction wheel activated by 4 hydraulic cylinders with appropriate safety equipment. During rail travel the chassis is lifted so rail points (Indusi) are not damaged when crossing. Greater loads can be picked up laterally to the direction of travel by lowering the chassis onto the sleeper heads. All movements can be controlled from the cab. An adapter kit allows the excavator to work on other gauges.		

Engine

Output (acc. to ISO 1585)	73 kW (99 HP)
Effective output locked	69 kW (94 HP)
Manufacturer	Deutz
Type	BF4M 2012
Capacity	4000 cm ³
RPM	2100 min ⁻¹
Inter-cooler	turbo-charged

Hydraulic equipment

Computer controlled AWE4 system with a load limiting high performance piston pump and fuel efficient on-demand power control for sensitive, proportional and load independent ramp-up of all operational movements. Primary and secondary protection of the hydraulic system against overload. Anti-cavitation valve for all operational functions as well as restrictors in the lift and articulating circuits. Load check and feathering valves in the lift circuit.

Hydraulic system	1xAKP
Main pump	HPR 105
Max. flow variable capacity pump	220 l/min
Max. operating pressure for operating movements	340 bar

Noise level

Noise level* is considerably below EU limits	
Drive-by noise level (LwA)	101 dB (A)
Cab noise level (LpA)	75 dB (A)

*Dynamic noise level measurement in accordance with 2000/14 EG

Electrical equipment

Operating voltage	24 Volt
Cold start heavy duty battery	2 x 100 Ah
All electrical equipment in accordance with road regulations	

Brakes

Brakes	pneumatic-hydraulic drum brake
Parking brake	air activated spring

* Emergency brake for use on rail	
max. un-braked trailer load	40 t
max. trailer load with wagon brake	120 t

Fill quantities

Fuel tank	190 l
Hydraulic tank	200 l
engine oil	10 l

Cab

Flexibly mounted • Heat resistant extra wide windscreen for all-round vision
 • Non-reflecting interior • Ergonomic pilot control levers
 • Adjustable steering column • Lengthways adjustment of the seat independent of the control console • Front windscreen stowable under the cab roof • Second seat for mate

Type	ATLAS 935 two-man comfort cab
Overall length	2130 mm
Width	935 mm

Slew unit

Slew motor	axial piston pump with priority valve
Slew gearbox	planetary reduction
Slew brake*	Multi-disc parking brake
Drive via an internally toothed slew bearing	
Slewing speed	8,5 min ⁻¹
Slew torque	37,5 kNm

* simple slewing on slopes against the incline is assured, with locking foot pedal when slewing pressure of 120 bar is exceeded.

Drive train

40 t special excavator axles with planetary drives to all four wheel hubs
 • All-wheel drive • Variable drive engine • Double acting travel brake valve
 • Travel direction selector with steering column mounted lever or switch on pilot control lever • Steering axle with automatic oscillation lock
 • Travel control via foot pedal valve

Speed

Road and use on rail	road	rail
creep speed	0 - 1.3 km/h	0 - 3.5 km/h
infinitely variable off-highway speed	0 - 5.6 km/h	0 - 10.9 km/h
infinitely variable highway speed	0 - 20 km/h	0 - 40 km/h

Tyres

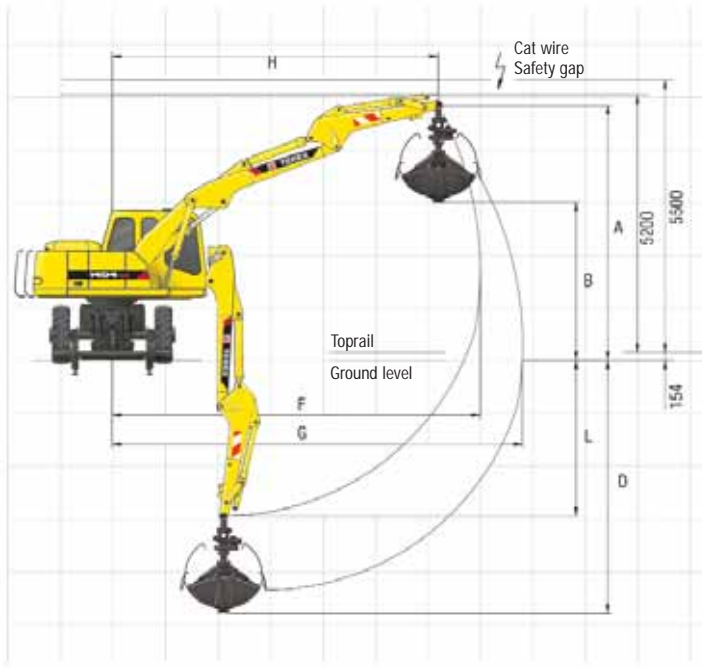
4 x (Tread pattern: Titan)	12.00 - 20
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Weight

Operating weight	16.5 - 17.5 t
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Technical data sheet Rail-Road excavator / friction wheel 1404 ZW

Digging diagram grab

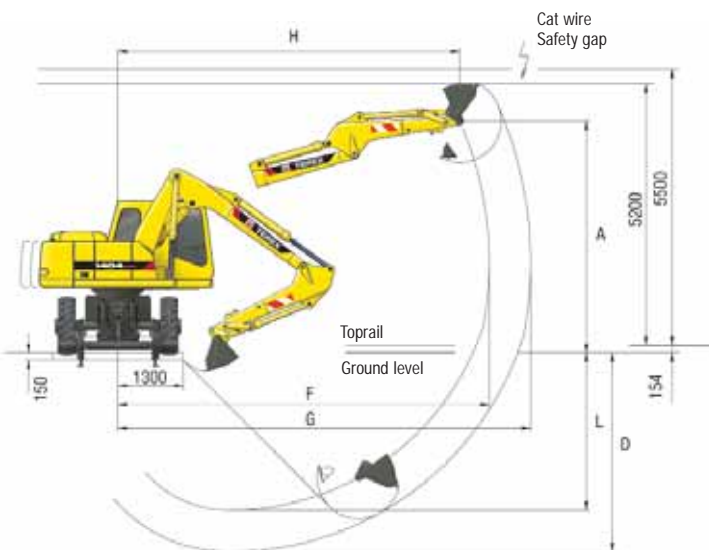


Articulating arm D 41.22 – effective length 2200 mm

Equipment: A 41.4 S, C 53.41 P, C 53.46, D 41.22, F 31, E 332, E 344

		Grab
A	Height articulating arm	mm 5140
B	Tipping height	mm 3180
D	Max. digging depth	mm 5100
F	Max. radius	mm 7400
G	Max. reach	mm 8250
H	Max. arm position	mm 6560
J	Max. reach height	mm –
L	Bucket pivot point	mm –
	Grab	l 350
	Grab clamping force	kN 73.0
	Operating weight	t 18.0

Digging diagram bucket



Articulating arm D 41.22 – effective length 2200 mm

Equipment: A 41.5, C 53.41 P, C 53.46, D 41.22, F 53.1, G 649

		Bucket
A	Height articulating arm	mm 4615
B	Tipping height	mm –
D	Max. Digging height	mm 3965
F	Max. radius	mm 7400
G	Max. Reach	mm 8225
H	Max. arm position	mm 6815
J	Max. reach height	mm –
L	Bucket pivot point	mm 3140
	Bucket	l 700
	Ripping force	kN 82
	Tear-out force	kN 130
	Operating weight	t 17.8

Tailswing 1750 mm 1000 mm track

Hook height m	3.0 m		3.5 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	l	q	
	5	a	–	–	–	–	5.3	4.7	5.4	3.4	4.2	2.5	–
	b	–	–	–	–	5.3	2.6	5.4	1.9	4.7	1.3	–	–
3	a	–	–	7.6	5.4	7.5	4.5	5.5	3.3	4.3	2.5	3.2	1.9
	b	–	–	7.6	2.8	7.5	2.4	6.0	1.8	4.7	1.3	3.6	0.9
2	a	8.7	6.7	8.4	5.3	7.6	4.4	5.5	3.3	4.2	2.5	3.2	1.9
	b	8.7	3.3	8.4	2.7	8.0	2.3	6.0	1.8	4.7	1.3	3.6	0.9
1	a	10.5	6.7	9.4	5.3	7.6	4.4	5.5	3.3	4.1	2.4	3.1	1.8
	b	10.5	3.3	9.6	2.7	8.2	2.3	6.0	1.7	4.6	1.2	3.6	0.8
0	a	11.6	6.4	9.5	5.1	7.7	4.3	5.4	3.1	4.0	2.3	3.1	1.8
	b	11.6	3.1	10.0	2.5	8.3	2.2	6.0	1.6	4.5	1.1	3.5	0.8
-1	a	12.1	6.2	9.7	5.0	7.7	4.1	5.3	3.0	3.9	2.3	–	–
	b	12.1	2.9	10.1	2.4	8.4	2.0	6.0	1.5	4.4	1.1	–	–
-2	a	12.4	6.1	9.6	4.9	7.6	4.1	5.2	2.9	–	–	–	–
	b	12.4	2.8	10.3	2.3	8.4	2.0	5.8	1.4	–	–	–	–

Tailswing 2000 mm 1000 mm track

Hook height m	3.0 m		3.5 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	l	q	
	5	a	–	–	–	–	5.3	5.2	5.4	3.8	4.6	2.8	–
	b	–	–	–	–	5.3	2.9	5.4	2.2	4.9	1.6	–	–
3	a	–	–	7.6	6.0	7.5	5.0	5.9	3.7	4.6	2.8	3.5	2.1
	b	–	–	7.6	3.2	7.5	2.7	6.0	2.1	5.0	1.6	3.9	1.1
2	a	8.7	7.4	8.4	5.9	8.0	4.9	5.9	3.7	4.6	2.8	3.5	2.1
	b	8.7	3.8	8.4	3.1	8.0	2.7	6.4	2.0	5.0	1.5	3.9	1.1
1	a	10.5	7.4	9.6	5.9	8.2	4.9	5.9	3.6	4.5	2.7	3.5	2.1
	b	10.5	3.8	9.6	3.1	8.5	2.7	6.3	2.0	5.0	1.5	3.9	1.1
0	a	11.6	7.1	10.0	5.7	8.2	4.8	6.0	3.5	4.4	2.6	3.4	2.0
	b	11.6	3.6	10.0	3.0	8.5	2.5	6.4	1.9	4.9	1.4	3.8	1.0
-1	a	12.1	6.9	10.1	5.6	8.3	4.6	5.9	3.4	4.3	2.6	–	–
	b	12.1	3.4	10.1	2.8	8.6	2.4	6.5	1.8	4.8	1.3	–	–
-2	a	12.4	6.9	10.3	5.5	8.3	4.6	5.7	3.3	–	–	–	–
	b	12.4	3.4	10.3	2.8	8.9	2.4	6.3	1.7	–	–	–	–

Tailswing 1750 mm 1435 mm track

Hook height m	3.0 m		3.5 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	l	q	
	5	a	–	–	–	–	5.3	4.7	5.4	3.4	4.2	2.5	–
	b	–	–	–	–	5.3	3.6	5.4	2.6	4.7	1.9	–	–
3	a	–	–	7.6	5.4	7.5	4.5	5.5	3.3	4.3	2.5	3.2	1.9
	b	–	–	7.6	4.0	7.5	3.4	6.0	2.5	4.7	1.9	3.6	1.4
2	a	8.7	6.7	8.4	5.3	7.6	4.4	5.5	3.3	4.2	2.5	3.2	1.9
	b	8.7	4.8	8.4	3.9	8.0	3.3	6.0	2.5	4.7	1.9	3.6	1.4
1	a	10.5	6.7	9.4	5.3	7.6	4.4	5.5	3.3	4.1	2.4	3.1	1.8
	b	10.5	4.8	9.6	3.9	8.2	3.3	6.0	2.4	4.6	1.8	3.6	1.3
0	a	11.6	6.4	9.5	5.1	7.7	4.3	5.4	3.1	4.0	2.3	3.1	1.8
	b	11.6	4.6	10.0	3.7	8.3	3.1	6.0	2.3	4.5	1.7	3.5	1.3
-1	a	12.1	6.2	9.7	5.0	7.7	4.1	5.3	3.0	3.9	2.3	–	–
	b	12.1	4.4	10.1	3.6	8.4	3.0	6.0	2.2	4.4	1.6	–	–
-2	a	12.4	6.1	9.6	4.9	7.6	4.1	5.2	2.9	–	–	–	–
	b	12.4	4.3	10.3	3.5	8.4	3.0	5.8	2.1	–	–	–	–

Tailswing 2000 mm 1435 mm track

Hook height m	3.0 m		3.5 m		4.0 m		5.0 m		6.0 m		7.0 m		
	l	q	l	q	l	q	l	q	l	q	l	q	
	5	a	–	–	–	–	5.3	5.2	5.4	3.8	4.6	2.8	–
	b	–	–	–	–	5.3	4.0	5.4	2.9	4.9	2.2	–	–
3	a	–	–	7.6	6.0	7.5	5.0	5.9	3.7	4.6	2.8	3.5	2.1
	b	–	–	7.6	4.5	7.5	3.8	6.0	2.8	5.0	2.2	3.9	1.6
2	a	8.7	7.4	8.4	5.9	8.0	4.9	5.9	3.7	4.6	2.8	3.5	2.1
	b	8.7	5.4	8.4	4.4	8.0	3.7	6.4	2.8	5.0	2.1	3.9	1.6
1	a	10.5	7.4	9.6	5.9	8.2	4.9	5.9	3.6	4.5	2.7	3.5	2.1
	b	10.5	5.4	9.6	4.4	8.5	3.8	6.3	2.8	5.0	2.1	3.9	1.5
0	a	11.6	7.1	10.0	5.7	8.2	4.8	6.0	3.5	4.4	2.6	3.4	2.0
	b	11.6	5.2	10.0	4.2	8.5	3.6	6.4	2.7	4.9	2.0	3.8	1.5
-1	a	12.1	6.9	10.1	5.6	8.3	4.6	5.9	3.4	4.3	2.6	–	–
	b	12.1	5.0	10.1	4.1	8.6	3.4	6.5	2.6	4.8	1.9	–	–
-2	a	12.4	6.9	10.3	5.5	8.3	4.6	5.7	3.3	–	–	–	–
	b	12.4	5.0	10.3	4.0	8.9	3.4	6.3	2.5	–	–	–	–

a = travel on road permitted, b = travel on rail permitted, q = lateral, l = longitudinal

The specified max. effective load values in tons include a stability factor of 33% or are calculated at 87% of the hydraulic lift force in accordance with ISO 10567. These values are valid at the tip of the arm with the arm system in the optimum position.

Operating weights, tailswing

Type	Configuration	Operating weight with adjusting mechanism	Tailswing mm
1404 K ZW	A 41.4 S	16.5 t	1575
1404 K ZW	A 41.4 S	16.9 t	1750
1404 K ZW	A 41.4 S	17.5 t	2000

Approvals

The equipment marked * is an essential requirement of the German Federal Railways for operation on their network. The safety testing is conducted by the health and safety executive (Berufsgenossenschaft), compliance with the appropriate regulations is verified by the German Federal Railways and the TÜV.

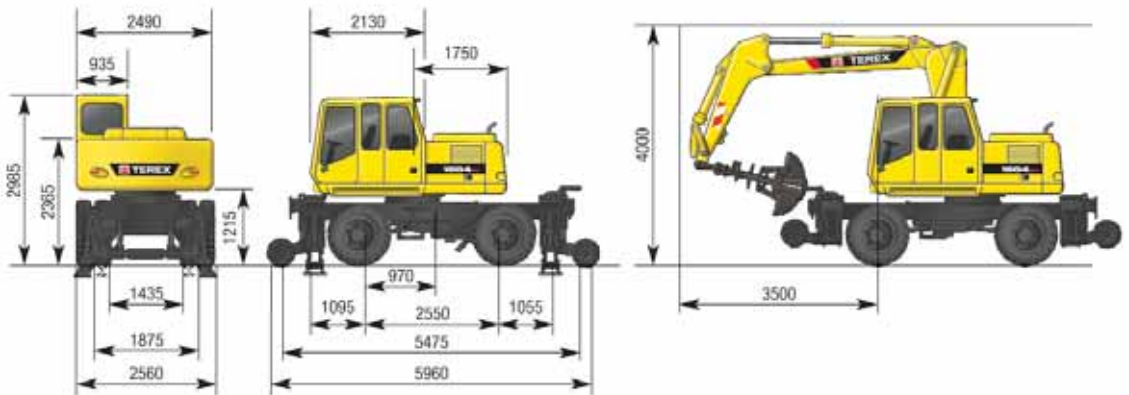
Additional and special equipment

- Short tailswing version (1575, 1750, 2000 mm tailswing)*
- Two-man cab*
- Auxiliary heating
- Pipe burst protection with overload warning device (lift cylinder)*
- Trailer hitch on chassis*
- Emergency manual hydraulic pump*
- Special tow bar*
- German Federal Railways approved lights*
- Lift limitation electronically adjustable from the cab*
- Slew limitation adjustable from the cab*
- Wagon brake unit with footplate brake valve, permitted trailer load is 120 t
- Factory Federal German Railways approval with appropriate certification and all necessary accessories: fire extinguisher, first aid kit, earth cable, red/white flag, torch with red dimmable light, loud hailer, digital speed measurement instrument, oil spill tarpaulin and oil binder*
- Rotating beacons
- Work lights
- Radio
- Fuel filling pump
- TÜV-approval
- Track 1435 mm*

Items marked with * are a requirement for Federal German Railway approval

Technical specification sheet Rail-Road excavator 1604 ZW

Main dimensions



Drive configuration with grab

Equipment

Base machine		Weight/kg	Standard basic equipment
A 67.5	ATLAS-hydraulic Rail-Road excavator 1604 ZW with 4 outriggers Tailswing 1750 mm	16500	<ul style="list-style-type: none"> Narrow axles for underground and suburban railways Central lubrication Maintenance point for filter equipment Additional hydraulics for grab and grab rotation Tank level indicator Main battery switch in the negative circuit "Drive" function via foot pedal Pressure reservoir for emergency lowering of the arm system Sliding window in cab door Windscreen washer Infinitely variable angle and length adjustment of the steering column Preparation for radio Storage in the cab Comfort seat with armrests and lumbar support Tool box in the chassis Sealed pivot points in the foot section of the boom Boom and articulating arm with 50 hour maintenance intervals Securing lug for securing the grab during road travel Air conditioning Air dryer for compressed air system
Additional and special equipment			
B 66.41	Pipe burst protection for lift cylinder Overload warning device	10	
B 67.20	Heavy counterweight, Tailswing 2000 mm	400	
B 66.39	Additional hydraulic unit for adjustable boom cylinder	20	
B 41.23	Two-man fully glazed cab	300	
Base arm and boom			
C 67.41P	Base arm with two lift cylinders and an internally mounted operating cylinder	1350	
C 66.46	Boom with articulating cylinder, For base arm only C 67.41P, Effective length 3300 mm	930	
Articulating arms			
D 67.22	Articulating arm Rail-Road excavator Effective length 2240 mm	600	
Bucket tilt cylinder			
F 66.1	Bucket tilt cylinder with reversing linkage	180	

Engine

Output (acc. to ISO 1585)	98 kW (133 HP)
Effective output locked	93 kW (127 HP)
Manufacturer	Deutz
Type	BF4M 2012 EC
Capacity	4000 cm ³
RPM	2300 min ⁻¹
Inter-cooler	turbo-charged

Slew unit

Slew motor	axial piston pump with priority valve
Slew gearbox	planetary reduction
Slew brake*	Multi-disc parking brake
Drive via an internally toothed slew bearing	
Slewing speed	9 min ⁻¹
Slew torque	59 kNm

Hydraulic equipment

Computer controlled AWE4 system with a load limiting high performance piston pump and fuel efficient on demand power control for sensitive, proportional and load independent ramp-up of all operational movements. Primary and secondary protection of the hydraulic system against overload. Anti-cavitation valve for all operational functions as well as restrictors in the lift and articulating circuits. Load check and feathering valves in the lift circuit

Hydraulic system	1xAKP
Main pump	HPR 135
Max. flow variable capacity pump	300 l/min
Max. operating pressure for operating movements	340 bar

Drive line

40 t special excavator axles with planetary drives to all four wheel hubs
 • All-wheel drive • Variable drive engine • Double acting travel brake valve
 • Travel direction selector with steering column mounted lever or switch on pilot control lever • Steering axle with automatic oscillation lock
 • Travel controls via foot pedal valve

Speed

Road and rail operation	
creep speed	max. 1.3 km/h
infinitely variable off-highway speed	max. 5.6 km/h
infinitely variable highway speed	max. 20 km/h
Rail guidance, track width 1435 mm, other widths on request	

Noise level

Noise level is considerably below EU limits	
Drive-by noise level (LwA)	104 dB (A)
Cab noise level (LpA)	76 dB (A)
*Dynamic sound level measurement according to 2000/14 EG	

Tyres

8 x	10.00 - 20
(inner tyre - highway, outer tyre - off highway)	

Electrical equipment

Operating voltage	24 Volt
Cold start heavy duty battery	2 x 100 Ah
All electrical equipment in accordance with road regulations	

Brakes

Brakes	pneumatic-hydraulic drum brake
Parking brake	air activated spring
Emergency brake for use on rail	
max. un-braked trailer load	40 t
max. trailer load with wagon brake	120 t

Fill quantities

Fuel tank	230 l
Hydraulic tank	300 l
Engine oil	10 l

Cab

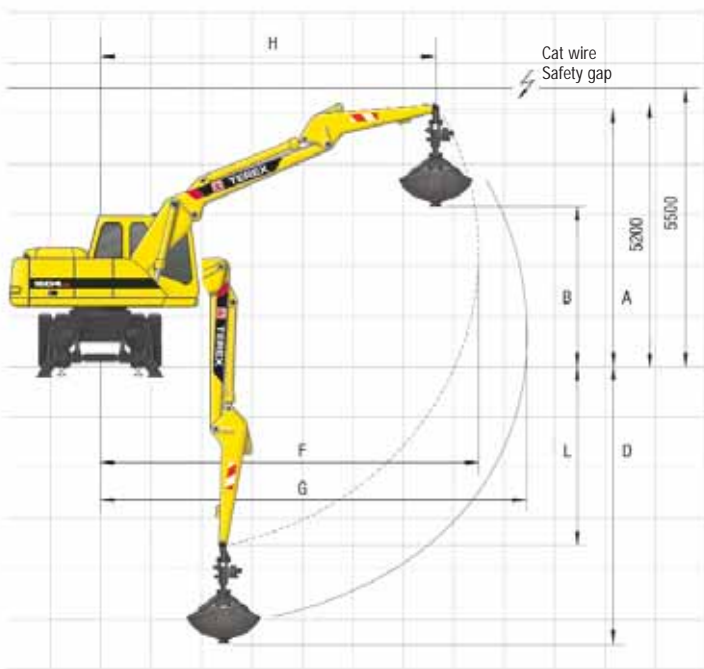
Flexibly mounted • Heat resistant extra wide windscreen for all-round vision
 • Non-reflecting interior • Ergonomic pilot control levers
 • Adjustable steering column • Lengthways adjustment of the seat independent of the control console • Front windscreen stowable under the cab roof • Second seat for mate

Type 935 ATLAS two-man comfort cab	
Overall length	2130 mm
Width	935 mm



Technical specification sheet Rail-Road excavator 1604ZW

Digging diagram grab

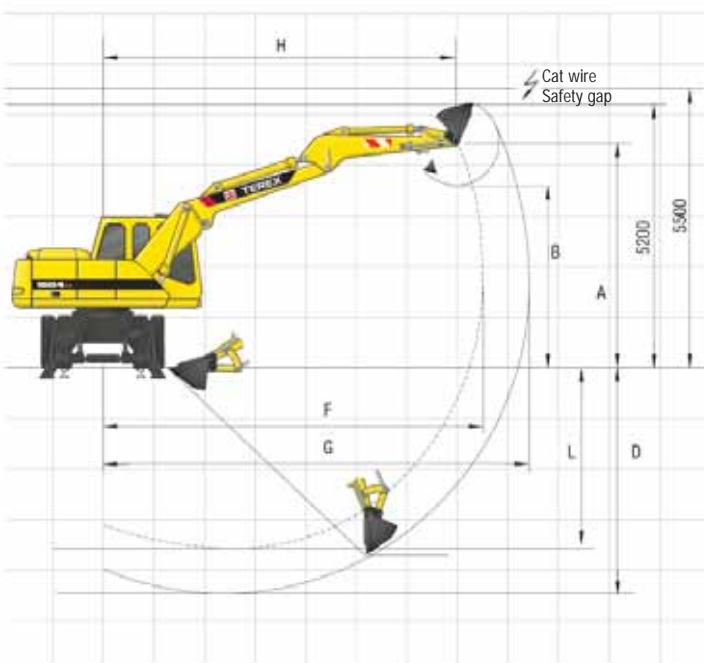


Articulating arm D 67.22 – effective length 2240 mm

Equipment: A 67.5, C 67.41 P, C 66.46, D 67.22, T 31, E 332, E 346

			Grab
A	Articulating arm height	mm	5100
B	Tipping height	mm	3150
D	Max. digging depth	mm	5500
F	Max. radius	mm	7450
G	Max. outreach	mm	8300
H	Max. arm position	mm	6600
J	Max. reach height	mm	–
L	Bucket pivot point	mm	3550
	Grab	l	450
	Grab clamping force	kN	72.8
	Operating weight	t	21.3

Digging diagram bucket



Articulating arm D 67.22 – effective length 2240 mm

Equipment: A 67.5, C 67.41 P, C 66.46, D 67.22, G 649

			Digging bucket
A	Articulating arm height	mm	4400
B	Tipping height	mm	3650
D	Max. digging depth	mm	4450
F	Max. radius	mm	7450
G	Max. outreach	mm	8350
H	Max. arm position	mm	6950
J	Max. reach height	mm	–
L	Bucket pivot point	mm	3550
	Bucket	l	800
	Ripping force	kN	112
	Break-out force	kN	141
	Operating weight	t	21.0

Base machine A 67.5, C 67.41 P, C 66.46

Articulating arm D 67.22 – effective length 2240 mm Tailswing 1750 mm

Hook height m		3,0 m		4,0 m		4,5 m		5,0 m		6,0 m		7,0 m	
		l	q	l	q	l	q	l	q	l	q	l	q
5	a	–	–	–	–	6.9	5.7	6.5	4.9	6.0	3.7	–	–
	b	–	–	–	–	6.9	3.6	6.5	3.1	6.0	2.3	–	–
4.5	a	–	–	7.7	6.7	7.2	5.7	6.7	4.9	6.0	3.7	–	–
	b	–	–	7.7	4.1	7.2	3.5	6.7	3.1	6.0	2.3	–	–
3	a	11.0	10.1	9.4	6.5	8.3	5.5	7.5	4.8	6.4	3.7	5.7	2.8
	b	11.0	5.8	9.4	4.0	8.3	3.4	7.5	3.0	6.4	2.3	5.7	1.7
1.5	a	12.7	9.9	10.6	6.4	9.2	5.5	8.2	4.8	6.8	3.6	5.8	2.7
	b	12.7	5.7	10.6	3.9	9.2	3.4	8.2	3.0	6.8	2.2	5.8	1.6
0	a	14.6	9.7	10.7	6.3	9.4	5.3	8.4	4.6	6.9	3.4	5.7	2.7
	b	14.6	5.5	10.7	3.8	9.4	3.2	8.4	2.8	6.9	2.1	5.7	1.6
-1.5	a	15.1	9.3	10.9	6.1	9.5	5.1	8.6	4.4	6.7	3.3	–	–
	b	15.1	5.2	10.9	3.5	9.5	3.0	8.6	2.6	6.7	1.9	–	–
-3	a	15.0	9.4	10.1	5.9	8.3	5.0	–	–	–	–	–	–
	b	15.0	5.2	10.1	3.4	8.3	2.9	–	–	–	–	–	–

a = on outriggers, b = travel on rail permitted, q = lateral, l = longitudinal

The specified max. effective load values in tons include a stability factor of 33% or are calculated at 87% of the hydraulic lift force in accordance with ISO 10657
These values are valid at the tip of the arm with the arm system the optimum operating position.

Articulating arm D 67.22 – effective length 2240 mm Tailswing 2000 mm

Hook height m		3,0 m		4,0 m		4,5 m		5,0 m		6,0 m		7,0 m	
		l	q	l	q	l	q	l	q	l	q	l	q
5	a	–	–	–	–	6.9	6.0	6.5	5.1	6.0	3.9	–	–
	b	–	–	–	–	6.9	3.8	6.5	3.3	6.0	2.5	–	–
4.5	a	–	–	7.7	7.1	7.2	6.0	6.7	5.1	6.0	3.9	–	–
	b	–	–	7.7	4.4	7.2	3.8	6.7	3.3	6.0	2.5	–	–
3	a	11.0	10.5	9.4	6.9	8.3	5.8	7.5	5.0	6.4	3.9	5.7	2.9
	b	11.0	6.2	9.4	4.2	8.3	3.6	7.5	3.2	6.4	2.5	5.7	1.8
1.5	a	12.7	10.4	10.6	6.8	9.2	5.8	8.2	5.0	6.8	3.8	5.8	2.9
	b	12.7	6.1	10.6	4.2	9.2	3.6	8.2	3.2	6.8	2.4	5.8	1.8
0	a	14.6	10.2	10.7	6.6	9.4	5.6	8.4	4.8	6.9	3.6	5.7	2.8
	b	14.6	5.9	10.7	4.0	9.4	3.5	8.4	3.0	6.9	2.2	5.7	1.7
-1.5	a	15.1	9.9	10.9	6.4	9.5	5.4	8.6	4.6	6.7	3.5	–	–
	b	15.1	5.6	10.9	3.8	9.5	3.3	8.6	2.8	6.7	2.1	–	–
-3	a	15.0	9.9	10.1	6.3	8.3	5.2	–	–	–	–	–	–
	b	15.0	5.6	10.1	3.7	8.3	3.1	–	–	–	–	–	–

Rail guidance

Track width 1435 mm, other widths on request

ATLAS CARSY (Computer assisted rail contact pressure system)

Automatic system for controlling and monitoring the contact pressure of the rail guidance wheels. The pressures are automatically set to the required pressure, continuously monitored and adjusted if necessary. Depending on the pre-selected operating condition, each separate bogie guidance wheel is set to a different pressure in accordance with a prescribed schedule, locked or hydraulically trailed.

The front and rear guidance wheels can be controlled independently to allow ease of re-railing and crossing of rail points

Automatic diagnostics of the electronics. Emergency function: de-railing is assured even in the event of a fault or total breakdown

Additional and special equipment

- Short tailswing version (tailswing 1750 or 2000 mm)*
- Two-man cab*
- Auxiliary heating
- Pipe burst protection with overload warning device (lift cylinder)*
- Trailer hitch on chassis*
- Emergency manual hydraulic pump*
- Special tow bar*
- German Federal Railways approved lights*
- Lift limitation electronically adjustable from the cab*
- Slew limitation adjustable from the cab*
- Wagon brake unit with footplate brake valve, Permitted trailer load is 120 t
- Federal German Railways approval from the factory with appropriate certification and all necessary accessories: fire extinguisher, fist aid kit, earth cable, red/white flag, torch with red dimmable light, loud hailer, digital speed measurement instrument, oil spill tarpaulin and oil binder*
- Rotating beacons
- Work lights
- Radio
- Fuel filling pump
- Rail bogie with track widths of up to approx. 1700 mm
- TÜV-approval

Items marked with * are a requirement for Federal German Railway approval

Operating weights, tailswing

ATLAS 1604 Rail-Road excavators with CARSY are available in the following configurations:

Type	Configuration	Operating weight with adjusting equipment	Tailswing mm	Can be operated on the network of the German Federal Railways.
1604 K ZW with 4 outriggers	A 67.5	ca. 21000 kg	1750	Track spacing \geq 3700 mm
1604 K ZW with 4 outriggers	A 67.5	ca. 21500 kg	2000	Track spacing \geq 4000 mm

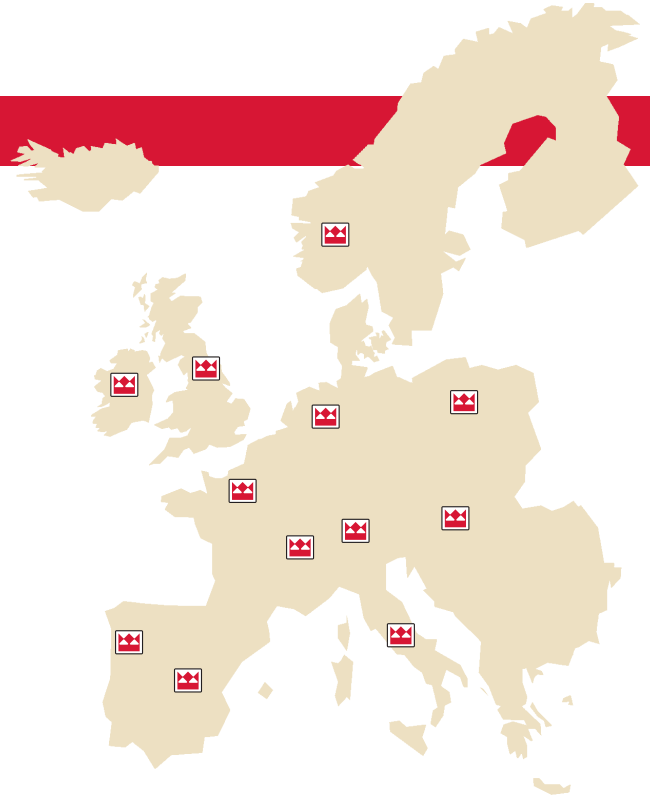
Approvals

The equipment marked * is an essential requirement of the German Federal Railways for operation on their network. The safety testing is conducted by the health and safety executive (Berufsgenossenschaft), compliance with the appropriate regulations is verified by the German Federal Railways and the TÜV.



Head office and
manufacturing

TEREX GmbH
Atlasstraße 6
27777 Ganderkesee
Germany
Tel. +49(0)4222-954-0
Fax +49(0)4222-954-220
info@atlas-terex.de
www.atlas-terex.de



Dealer

www.atlas-terex.de

Stand 11/2005. We reserve the right to modify the design as part of our ongoing product development and improvement policy, specifications are given without obligation, the machines comply with the latest European safety directives.