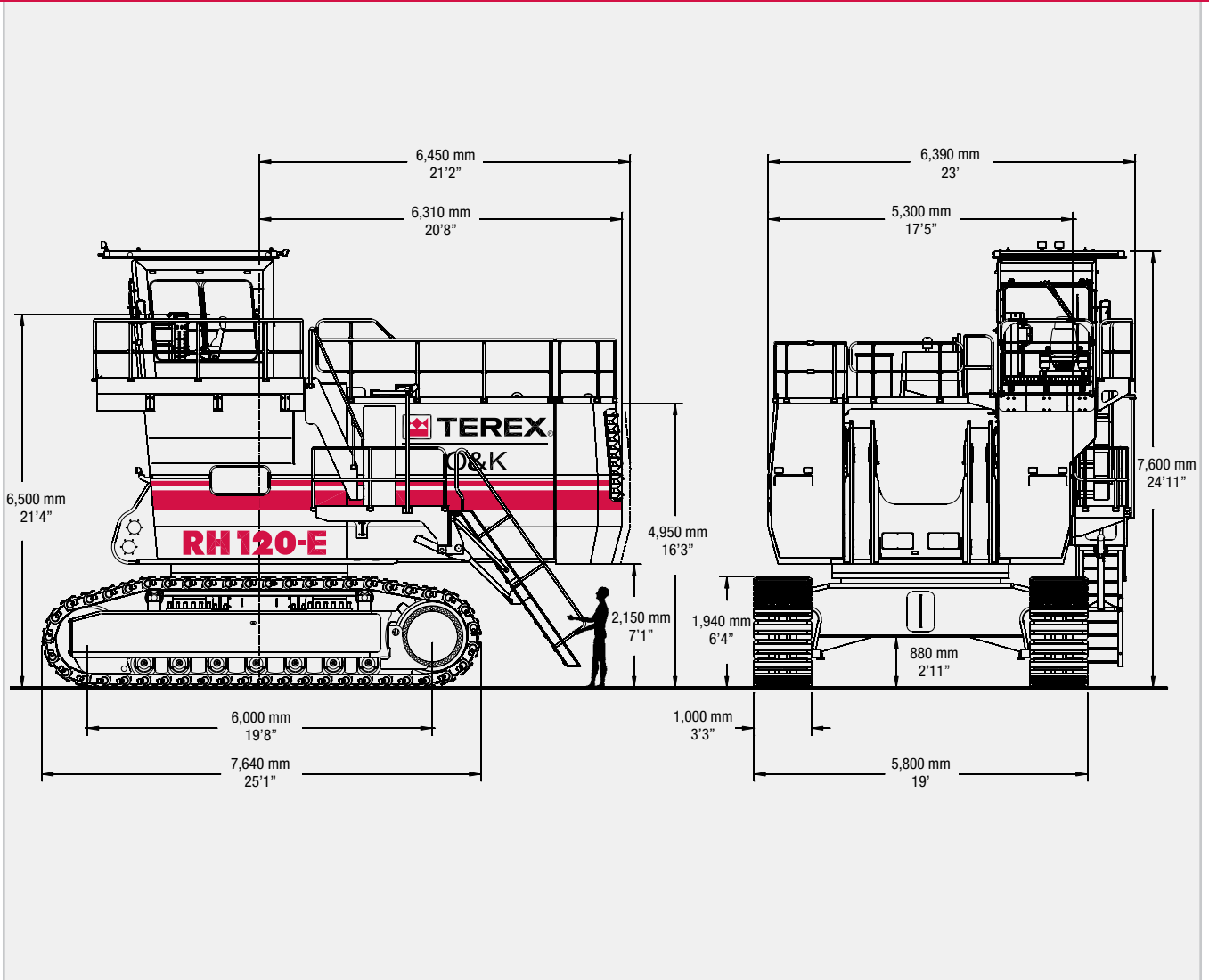


Hydraulic Mining Excavator | RH 120-E



RH 120-E

General Data:

Operating weight		
Face Shovel	284 t	313 sht
Backhoe	287 t	316 sht
Engine output SAE J 1995		
Caterpillar C18	1,044 kW	1,400 HP
Cummins QSK 19-C	1,008 kW	1,350 HP
Standard bucket capacity		
Face Shovel (SAE 2:1)	16.5 m ³	21.6 yd ³
Backhoe (SAE 1:1)	17.0 m ³	22.2 yd ³

Features:

- TriPower shovel attachment
- Independent oil cooling system
- Spacious walk-through machine house
- 5-circuit-hydraulic system
- Electronic-hydraulic servo control
- Board Control System (BCS)
- Torque control in closed-loop swing circuit
- Automatic central lubrication system
- Xenon working lights

Operating Weight

Shovel

Standard track pads	1,000 mm (3'3")
Operating weight	284,100 kg (626,330 lb)
Ground Pressure	21.3 N/cm ² (30.9 psi)
Further track pads on request	

Backhoe

Standard track pads	1,000 mm (3'3")
Operating weight	287,100 kg (632,940 lb)
Ground Pressure	21.5 N/cm ² (31.1 psi)
Further track pads on request	

Electrical System (diesel drive)

System voltage	24V
Batteries (12V each)	4 x 244 Ah
in series/parallel installation	488 Ah - 24 V
Working spot lights	8 x high brightness Xenon lights
<ul style="list-style-type: none"> Battery isolation relays Emergency stop switches accessible from ground level, in engine module and in operator's cab 	

Hydraulic Oil Cooling

Oil flow of cooling pumps	
Diesel version	2 x 467 l/min (2 x 123 US gal/min)
Electric version	2 x 459 l/min (2 x 121 US gal/min)
Diameter of fans	2 x 1,220 mm (2 x 48")
<ul style="list-style-type: none"> Cooling system is fully independent of all main circuits, i.e. controlled cooling capacity is available whenever engine is running Gear type cooling pumps supplying high volume low pressure oil to fans and aluminium coolers Variable axial piston pumps supplying low volume high pressure oil to fans Fan speed is thermostatically controlled Extremely high cooling efficiency to ensure optimum oil temperature 	

Electric Motor (optional)

Type	Squirrel cage induction motor
Output	1,000 kW
Voltage	6.3 kV ± 10 % (other on request)
Rated current I _N	109 A (at 6.3 kV)
Frequency	50 Hz (60 Hz optional)
Revolutions	1,500 min ⁻¹ (1,800 min ⁻¹ optional)
Starting current	450% of I _N (350% of I _N optional)
<ul style="list-style-type: none"> Custom-made electric motor with increased gap between rotor and stator to withstand severe mining conditions Power limit control by Pump Management System 	

Diesel Engines

Engine features

- Hydraulically driven radiator fan with electronically controlled fan speed
- Microprocessed engine management
- Automatic rev. reduction
- Heavy duty air-filters, STRATA 1 with automatic dust evacuation
- Two-stage fuel filter incl. water separator
- Additional high capacity water separator
- Pre-lube starting system (Cummins engines only)

Diesel Engines

Version 1 - Caterpillar

Make and model	2 x Caterpillar C18
Total rated net power ISO 3046/1	1,044 kW (1,400 HP) 1,800 min ⁻¹
Total rated net power SAE J1349	1,044 kW (1,400 HP) 1,800 min ⁻¹
Total rated gross power SAE J1995	1,044 kW (1,400 HP) 1,800 min ⁻¹
No. of cylinders (each engine)	6
Bore	145 mm (5.7 in)
Stroke	183 mm (7.2 in)
Displacement	18.1 l (1,105 in ³)
Aspiration	Turbocharged and charge air cooled
Max. altitude without deration	1,500 m (4,900 ft) a.s.l.
Emission certification	US EPA Tier 3; Europe NRMM Tier 3
Alternators	2 x 150 A
Fuel tank capacity	5,360 l (1,416 US gal)

Version 2 - Cummins

Make and model	2 x Cummins QSK 19-C
Total rated net power ISO 3046/1	1,008 kW (1,350 HP) 1,800 min ⁻¹
Total rated net power SAE J1349	1,008 kW (1,350 HP) 1,800 min ⁻¹
Total rated gross power SAE J1995	1,008 kW (1,350 HP) 1,800 min ⁻¹
No. of cylinders (each engine)	6
Bore	159 mm (6.25 in)
Stroke	159 mm (6.25 in)
Displacement	19 l (1,159 in ³)
Aspiration	Turbocharged and charge air cooled
Max. altitude without deration	2,438 m (8,000 ft) a.s.l.
Emission certification	US EPA Tier 2; Europe NRMM Tier 2
Alternators	2 x 175 A
Fuel tank capacity	5,360 l (1,416 US gal)

Hydraulic System with PMS

Main pumps (Diesel and electric version)	4 x variable swash plate pumps
Max. oil flow	Diesel version 4 x 552 l/min (4 x 146 US gal/min) Electric version 4 x 543 l/min (4 x 143 US gal/min)
Max. pressure, attachment	31 MPa = 310 bar (4,495 psi)
Max. pressure, travel	37 MPa = 370 bar (5,365 psi)
Swing pumps	Diesel version 2 x reversible swash plate double pumps Electric version 2 x reversible swash plate pumps
Max. oil flow	Diesel version 2 x 394 l/min (2 x 104 US gal/min) Electric version 2 x 426 l/min (2 x 113 US gal/min)
Max. pressure, swing circuit	35 MPa = 350 bar (5,080 psi)
Total volume of hydraulic oil	approx. 3,500 l (925 US gal)
Hydraulic tank capacity	approx. 2,500 l (660 US gal)

- Pump Managing Systems (PMS) contains:
 - Electronic load limit control
 - Flow on demand from main pumps depending on joystick position
 - Automatic regulation of main pumps to zero flow without demand
 - Automatic rpm reduction of engine speed during working breaks
 - Reduced oil flow of main pumps at high hydraulic oil temperature or at high engine temperature
- Pressure cut-off for main pumps
- Cooling of pump transmission gear oil
- Filters:
 - Full-flow high-pressure filters (100 µm) for the main pumps, installed directly behind each pump
 - High pressure filters (100 µm) for the closed swing circuit
 - Full-flow filters (10 µm) for the complete return circuit
 - Full-flow filters (10 µm) for the cooling return circuit
 - Pressure filters (40 µm and 6 µm) for servo circuit
 - Transmission oil filters (40 µm)

Undercarriage

Travel speeds (2 stages)	1 st stage	Max. 2.7 km/h (1.68 mph)
	2 nd stage	Max. 1.4 km/h (0.87 mph)
Max. tractive force	1,680 kN (171 t = 377,770 lb)	
Gradability of travel drives	Approximately 72 %	
Track pads (each side)	47	
Bottom rollers (each side)	7	
Support rollers (each side)	2 plus a skid plate in between	
Travel drives (each side)	1 planetary transmission with 2 two-stage axial piston motors	
Parking brakes	Wet multiple disc brake, spring-loaded / hydraulically released	
<ul style="list-style-type: none"> • Cast double-grouser combined pad-links with bushings connected by hardened full floating pins • All running surfaces of sprockets, idlers, rollers and pad links as well as teeth contact areas of sprocket and pad links are hardened • Fully hydraulic self-adjusting track tensioning system with membrane accumulator • Automatic hydraulic retarder valve to prevent over-speed on downhill travel • Acoustic travel alarm 		

Operator's Cab

Operator's eye level	approx. 6.5 m (21'4")	
Internal dimensions of cab	Length	2,200 mm (7'3")
	Width	1,600 mm (5'3")
	Height	2,150 mm (7'1")
<ul style="list-style-type: none"> • Pneumatically cushioned and multi-adjustable comfort seat with lumbar support, seat heating, safety belt, head and arm rests • Switch in seat cushion to neutralize automatically the hydraulic controls when operator leaves the seat • Joystick controls integrated in independently adjustable seat consoles • Fold-away auxiliary seat with safety belt • FOPS (rock guard; approved acc. to DIN ISO 3449) integrated into cab structure • All-round safety glass, armoured windshield and sliding side window • Windshield with parallel intermittent wiper/washer • Roller blind at windshield • Robust instrument panel incl. large colored BCS screen with transfective technology • Terex® O&K Board Control System (BCS) electronic monitoring and data logging system for vital signs and service data of engines, hydraulic and lubrication system • Machine access via retractable boarding ladder, hydraulically operated • Emergency exit harness kit 		

Attachments

- Booms and sticks are torsion resistant, welded box design of high tensile steel with solid steel castings at pivot areas
- Welding procedures allow for internal counter-welding (double prep weld) wherever possible
- Booms and sticks are stress relieved after welding
- Catwalks with rails at boom (FS and BH)
- "Pressure-free lowering" of boom (FS and BH) and stick (FS) by means of a float valve
- Shovel attachment with Terex® O&K patented TriPower kinematics ensuring the following main features:
 - Horizontal automatic constant-angle bucket guidance
 - Vertical automatic constant-angle bucket guidance
 - Automatic roll-back limiter to prevent material spillage
 - Kinematic assistance to hydraulic forces
 - Constant boom momentum throughout the whole lift arc
 - Crowd force assistance
- All buckets (FS and BH) are equipped with a universal wear wear package suitable for all standard applications, which consists of:
 - Special liner material covering main wear areas inside and outside of bucket
 - Lip shrouds between teeth
 - Wing shrouds on side walls
 - Heel shrouds at bottom edges
- Special wear packages for highly abrasive materials on request

Swing System

Swing drives	2 compact planetary transmissions with axial piston motors	
Parking brakes	Wet multiple disc brake, spring loaded / hydraulically released	
Max. swing speed	Diesel version	4.7 rpm
	Electric version	5.1 rpm
Swing ring	Triple race roller bearing with sealed internal gearing	
<ul style="list-style-type: none"> • Closed-loop swing circuit with torque control • Hydraulic braking of the swing motion by counteracting control • All race ways of swing ring as well as grease bath for internal gearing supplied by automatic central lubrication system 		

Automatic Lubrication System

Capacity of grease container	450 l (120 US gal)
<ul style="list-style-type: none"> • Dual-circuit system with hydraulically driven heavy-duty pump and electronic time relay control to adjust the pause/lube times • Connected to the lubrication system are the swing roller bearing with internal gearing and all pivot points of attachment, bucket and cylinders • System failures displayed by Board Control System • Grease filters (200 µm) between service station and container as well as directly behind grease pump 	

Retractable Service Station

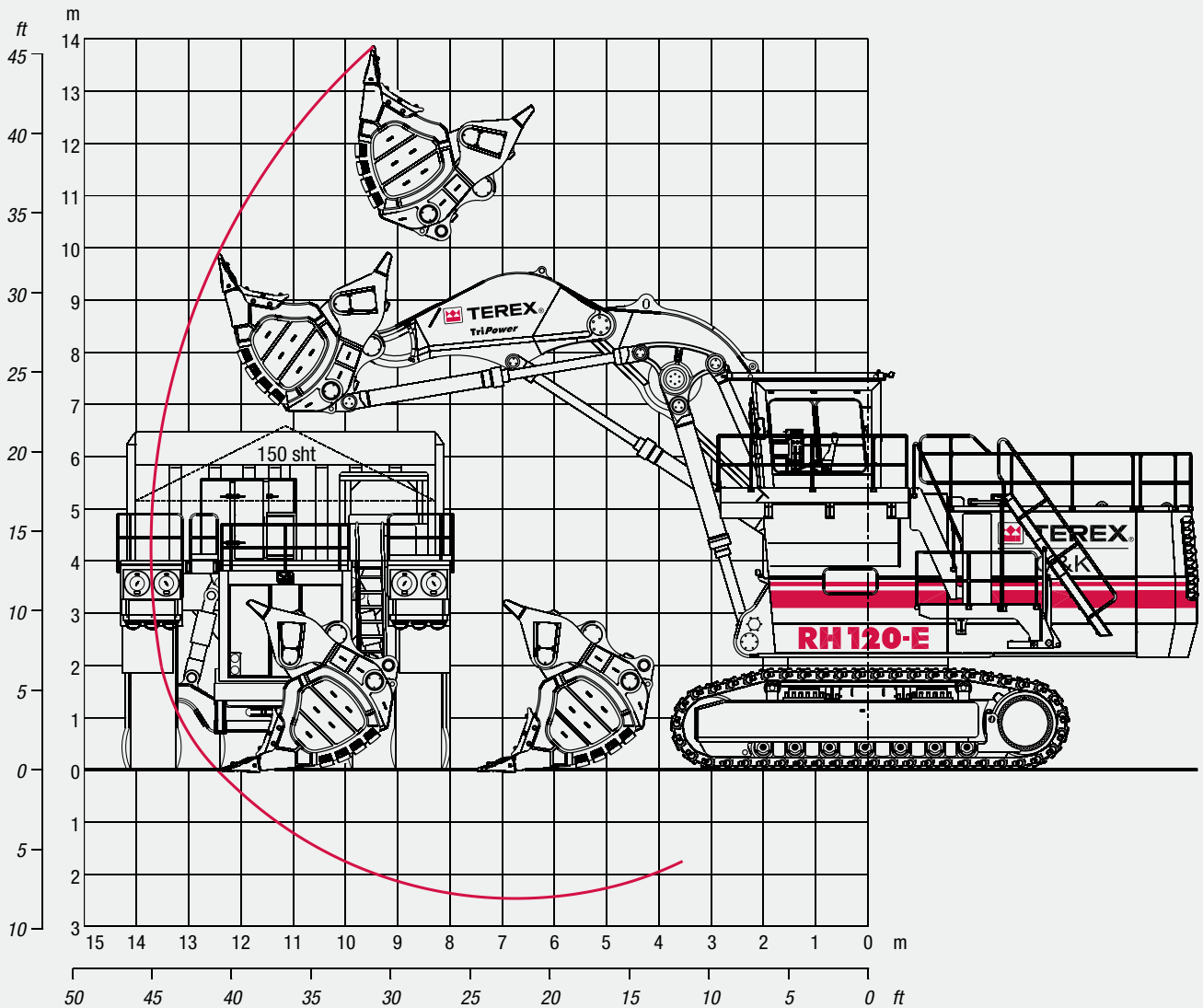
Retractable service station installed underneath the engine module and easily accessible from ground.

Equipped with:

- Quick couplings for
 - Diesel fuel
 - Engine coolant - left/right
 - Pump transmission gear oil - left/right
 - Engine oil (oil pan) - left/right
 - Engine oil (additional tank - optional) - left/right
 - Hydraulic oil tank
 - Grease container
- CAT jump start socket
- Indicator lights for "fuel tanks left / right full" and "grease container full"

TriPower Face Shovel Attachment (FS)

Working Diagram - Boom 6.2 m (20'4") - Stick 4.4 m (14'5")



Working Range

Max. digging height	13.9 m	45'7"
Max. digging reach	13.7 m	44'11"
Max. digging depth	2.5 m	8'2"
Max. dumping height	10.7 m	35'1"
Crowd distance on level	4.9 m	16'1"

Digging Forces

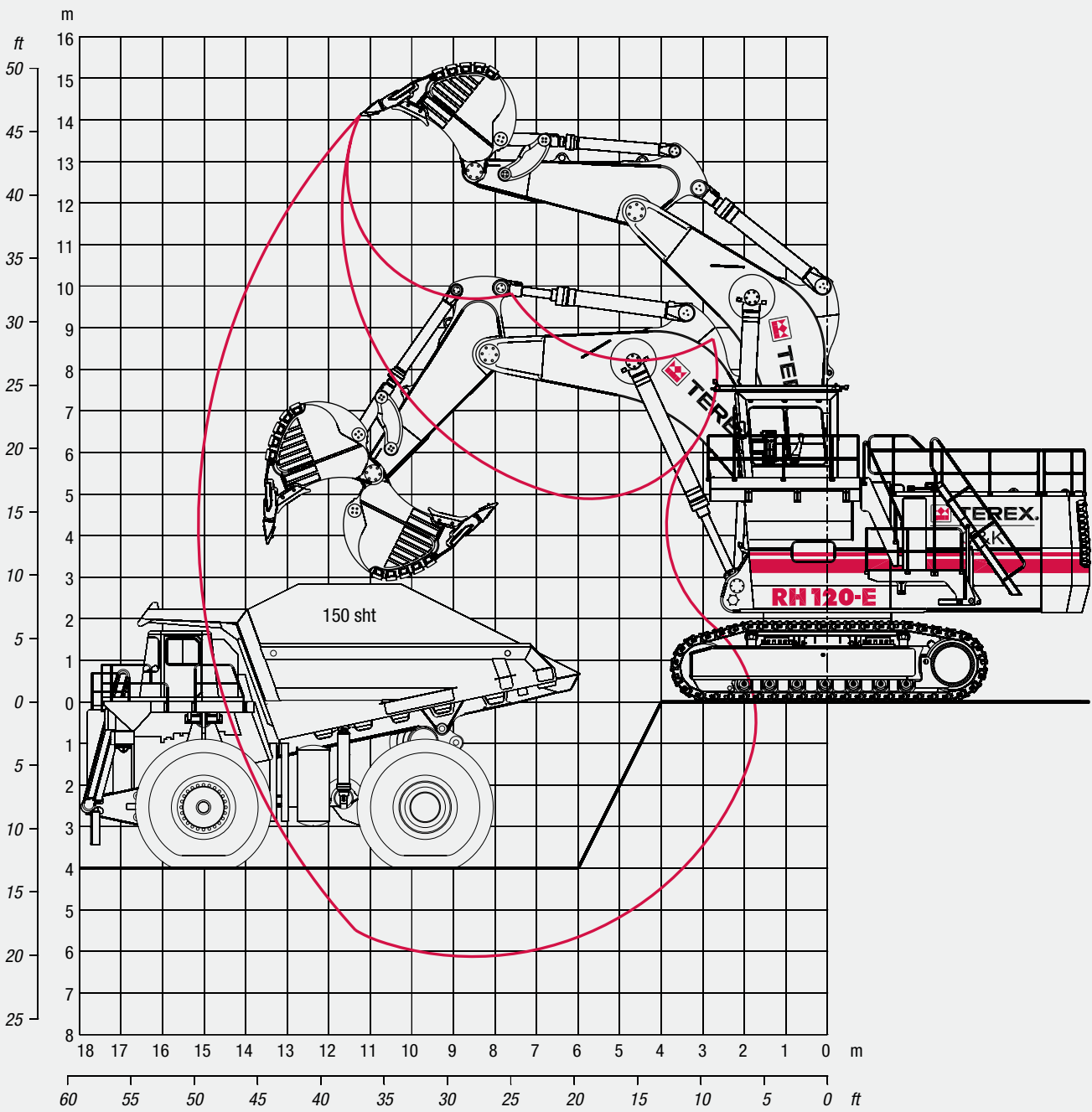
Max. crowd force	1,370 kN	307,880 lb
Max. crowd force at ground level	1,210 kN	271,920 lb
Max. breakout force	920 kN	206,750 lb

Face Shovels

Type	Heavy rock shovel	Heavy rock shovel	Standard rock shovel
Tooth system	ESCO S 95	ESCO S 95	ESCO S 95
Capacity	15.4 m ³	17.0 m ³	19.0 m ³
SAE / PCSA 1:1	(20.1 yd ³)	(22.2 yd ³)	(24.9 yd ³)
Capacity	13.5 m³	15.0 m³	16.5 m³
SAE / CECE 2:1	(17.7 yd³)	(19.6 yd³)	(21.6 yd³)
Total width	3,900 mm (12'10")	3,900 mm (12'10")	3,900 mm (12'10")
Inner width	3,500 mm (11'6")	3,500 mm (11'6")	3,500 mm (11'6")
Opening width	1,870 mm (6'2")	1,870 mm (6'2")	1,890 mm (6'2")
No. of teeth	6	6	6
Weight incl. universal wear kit	27,500 kg (60,630 lb)	27,800 kg (61,290 lb)	28,200 kg (62,170 lb)
Max. material density (loose)	2.2 t/m ³ (3,710 lb/yd ³)	2.0 t/m ³ (3,370 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)

Backhoe Attachment (BH)

Working Diagram - Boom 8.5 m (27'11") - Stick 4.0 m (13'9")



Backhoes		
Type	Heavy rock bucket	Standard rock bucket
Tooth system	ESCO V 81	ESCO V 81
Capacity SAE 1:1	15.0 m³ (19.6 yd³)	17.0 m³ (22.2 yd³)
Capacity CECE 2:1	13.6 m ³ (17.8 yd ³)	15.3 m ³ (20.0 yd ³)
Capacity struck	12.3 m ³ (16.1 yd ³)	13.5 m ³ (17.7 yd ³)
Total width	3,700 mm (12'2")	4,080 mm (13'5")
Inner width	3,310 mm (10'10")	3,690 mm (12'1")
No. of teeth	5	6
Weight incl. universal wear kit	16,600 kg (36,600 lb)	17,900 kg (39,460 lb)
Max. material density (loose)	2.0 t/m ³ (3,030 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)

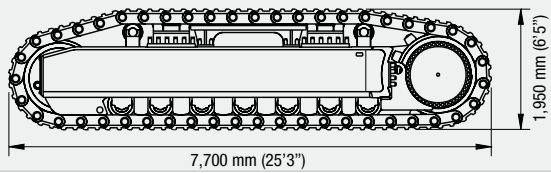
Working Range		
Max. digging depth	6.1 m	20'0"
Max. digging reach	15.1 m	49'6"
Max. digging height	14.1 m	46'3"

Digging Forces		
Max. crowd force	880 kN	197,760 lb
Max. breakout force	870 kN	195,520 lb

General Packing List

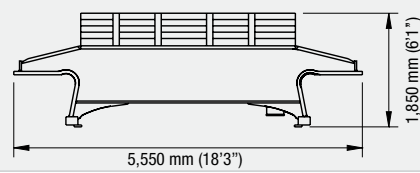
Crawler side frame with track pads (2 units)

Width 1,550 mm (5'1") Gross weight 36,800 kg (81,130 lb)



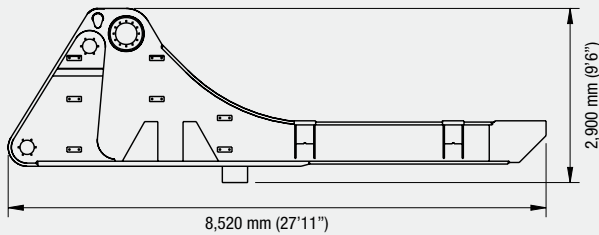
Undercarriage centre frame with swing roller bearing

Width 3,800 mm (12'6") Gross weight 25,000 kg (55,120 lb)



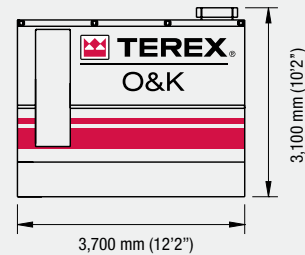
Superstructure centre frame

Width 3,120 mm (10'3") Gross weight 37,300 kg (82,230 lb)



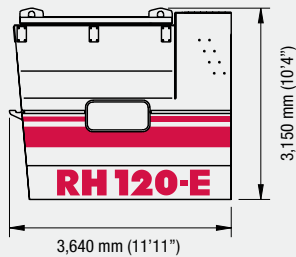
Engine module with diesel engines

Width 5,300 mm (17'5") Gross weight C32 22,300 kg (49,160 lb)
Gross weight QSK 19 23,500 kg (51,810 lb)



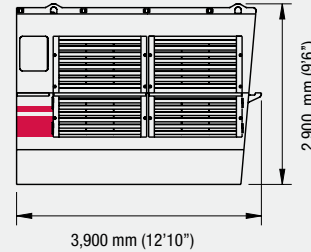
Cab pedestal module

Width 2,000 mm (6'7") Gross weight 4,830 kg (10,650 lb)



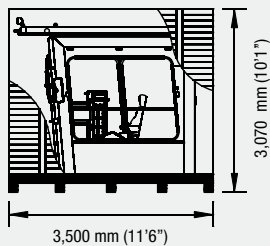
Oil cooler module

Width 1,550 mm (5'1") Gross weight 4,600 kg (9,480 lb)



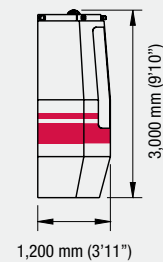
Crate with cabin and FOPS

Width 2,610 mm (8'7") Gross weight 3,800 kg (8,380 lb)



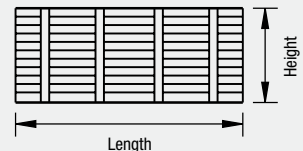
Counterweight incl. radiators

Width 5,300 mm (17'5") Gross weight 33,500 kg (73,850 lb)



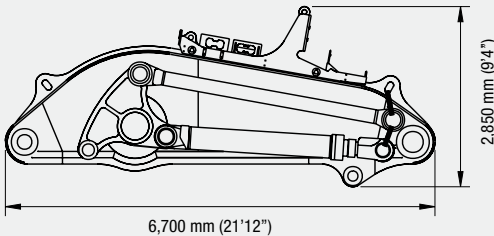
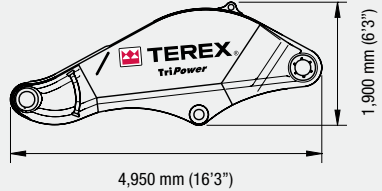
Crates

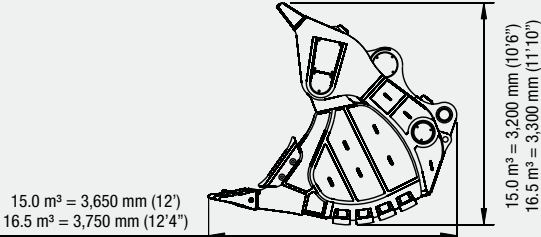
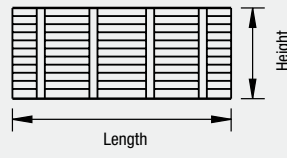
Content	Length	Width	Height	Gross weight
Grease container with pump	1,600 mm (5'3")	1,100 mm (3'7")	2,070 mm (6'9")	930 kg (2,050 lb)
Barrels (hydraulic oil; grease; antifreeze)	2,700 mm (8'10")	1,400 mm (4'7")	1,120 mm (4')	1,500 kg (3,310 lb)
Swing ring cover	2,200 mm (7'3")	1,300 mm (4'3")	1,020 mm (3'4")	370 (820 lb)
Retractable ladder	4,500 mm (14'9")	1,200 mm (3'11")	2,070 mm (6'9")	1,140 (2,510 lb)

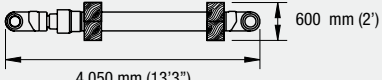
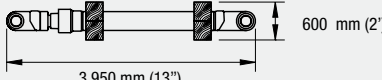


Above values are approximate. Details may vary depending on scope of supply and destination. Exact data subject to selected machine configuration and final packing list.

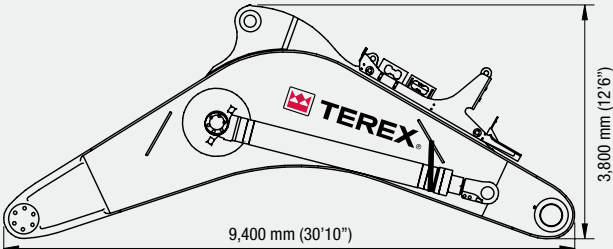
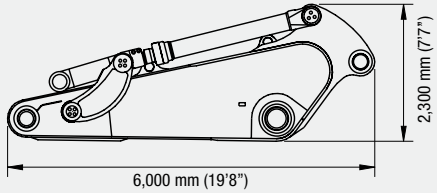
TriPower Shovel Attachment

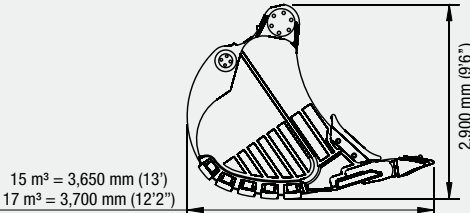
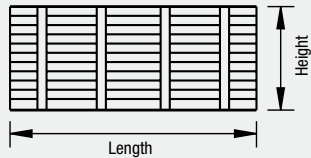
Boom with main valve block, TriPower linkages and rods		Stick	
Width 2,600 mm (8'6")	Gross weight 26,400 kg (58,200 lb)	Width 1,840 mm (6')	Gross weight 9,000 kg (19,840 lb)
			

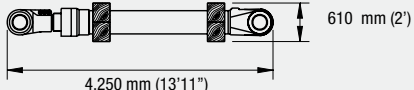
Face shovel incl. pin for stick			Crates with catwalks, railings and other parts			
Capacity (2:1)	Width	Gross weight	Length-mm (ft.in)	Width-mm (ft.in)	Height-mm (ft.in)	Gross weight-kg (lb)
15.0 m ³ (19.6 yd ³)	3,900 mm (12'10")	28,500 kg (62,830 lb)	3,900 (12'10")	1,600 (5'3")	1,250 (4'1")	1,300 (2,870)
16.5 m ³ (21.6 yd ³)	3,900 mm (12'10")	28,100 kg (61,950 lb)	4,500 (14'9")	1,900 (6'3")	1,740 (5'9")	2,400 (5,290)
						

Bundle with 2 stick cylinders		Bundles with 2 bucket cylinders	
Width 1,100 mm (3'7")	Gross weight 3,800 kg (8,380 lb)	Width 1,100 mm (3'7")	Gross weight 3,800 kg (8,380 lb)
			

Backhoe Attachment

Monoboam without main valve block		Stick with linkage and bucket cylinders	
Width 2,700 mm (8'10")	Gross weight 32,700 kg (72,090 lb)	Width 2,100 mm (6'11")	Gross weight 16,200 kg (35,710 lb)
			

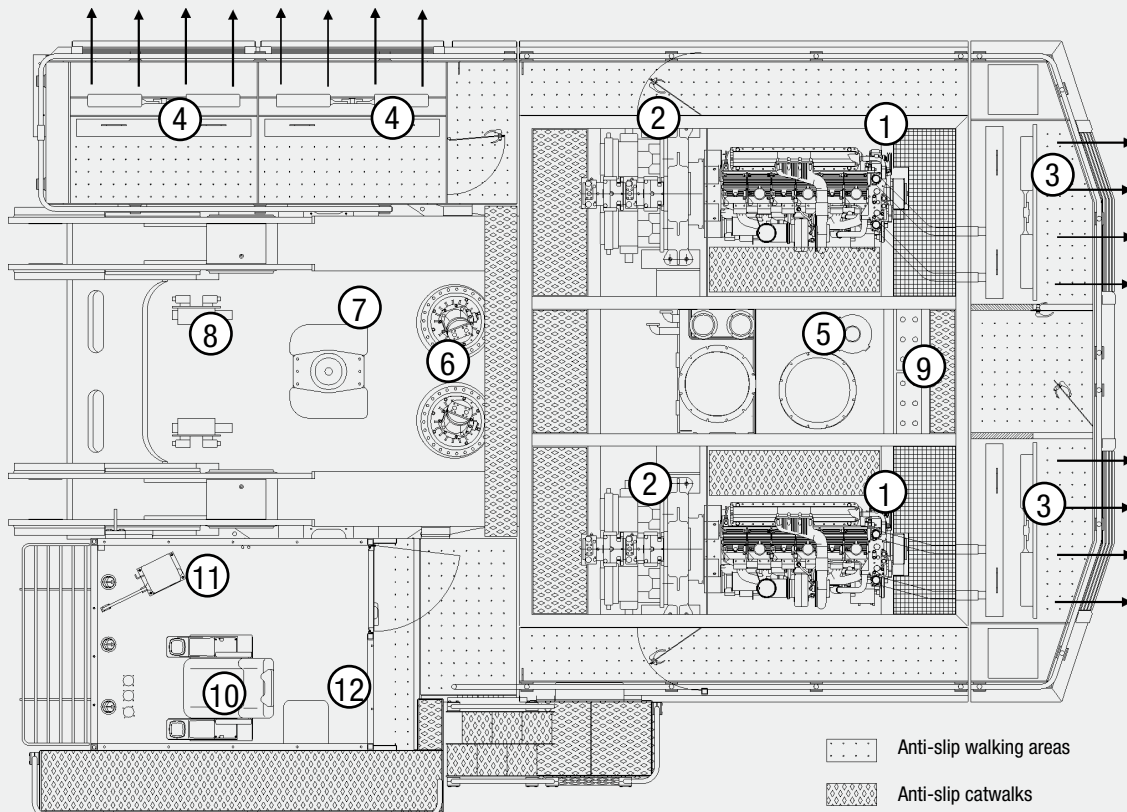
Backhoe bucket incl. pins for stick and linkage			Crates with catwalks, railings and other parts			
Capacity (1:1)	Width	Gross weight	Length-mm (ft.in)	Width-mm (ft.in)	Height-mm (ft.in)	Gross weight-kg (lb)
15.0 m ³ (19.6 yd ³)	3,700 mm (12'2")	18,000 kg (39,680 lb)	4,950 (16'3")	1,900 (6'3")	1,900 (6'3")	2,500 (7,050)
17.0 m ³ (22.2 yd ³)	4,100 mm (13'5")	19,300 kg (42,550 lb)	3,000 (9'10")	1,250 (4'1")	1,350 (4'5")	1,550 (3,420)
						

Bundle with 2 stick cylinders	
Width 1,200 mm (3'11")	Gross weight 6,350 kg (14,000 lb)
	

Above values are approximate. Details may vary depending on scope of supply and destination. Exact data subject to selected machine configuration and final packing list.

Component accessibility on superstructure

- | | | | |
|---|-------------------|-----------------------|---------------------|
| 1. Diesel engines | 4. Oil coolers | 7. Rotary distributor | 10. Operator's seat |
| 2. Gearboxes with hydraulic pumps | 5. Hydraulic tank | 8. Travel valves | 11. BCS tower |
| 3. Engine radiators with hydraulically driven fan | 6. Swing drives | 9. Batteries | 12. Auxilliary seat |



Optional Equipment

General

- Export crating
- Finishing as per enduser's corporate colours
- Customizing of logos as per customer's specification

Superstructure

- Mechanical service crane on superstructure
- Hydraulic service crane on superstructure with auxilliary engine
- Oil change interval extension for engine oil up to 1000 hrs (Cummins engines only)
- Engine oil burn system (Cummins engines only)
- Centrifuges for engine oil filtration (Cummins engines only)
- Folding access stairway, stairway angle approx. 45°
- Round container with a standard 200 l grease barrel (instead of 450 l grease container)
- Lubricated pinion for greasing of internal gearing of swing ring
- Various cold weather packages

Cab

- Various heating and airconditioning systems
- Roller blinds at all windows
- Outside mounted sun shields
- Rear windscreen wiper
- Additional instrumentation

Undercarriage

- Track pad width 800 mm or 1,200 mm
- Automatic lubrication of rollers by central lube system
- Cover plate under carbody (belly plate)

Attachment

- Guards for shovel cylinders of FS-attachment
- Xenon lighting on boom
- Special wear packages

- Further optional equipment on request

The technical specifications mentioned in this data sheet may vary according to the specific equipment/options installed.

Effective Date: April 2008. Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this brochure are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or to otherwise act irresponsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and Terex makes no other warranty, express or implied. Products and services listed may be trademarks, service marks or trade-names of Terex Corporation and/or its subsidiaries in the USA and other countries and all rights are reserved. Terex is a registered trademark of Terex Corporation in the USA and many other countries. Copyright 2008 Terex Corporation. M 121.4 e / PDF 0408

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