

Hydraulic Mining Excavator

General Data

Operating weight

Face shovel	552 t	608 sht
Backhoe	547 t	603 sht

Engine output

SAE J 1995	1,880 kW	2,520 HP
optional	2,240 kW	3,000 HP

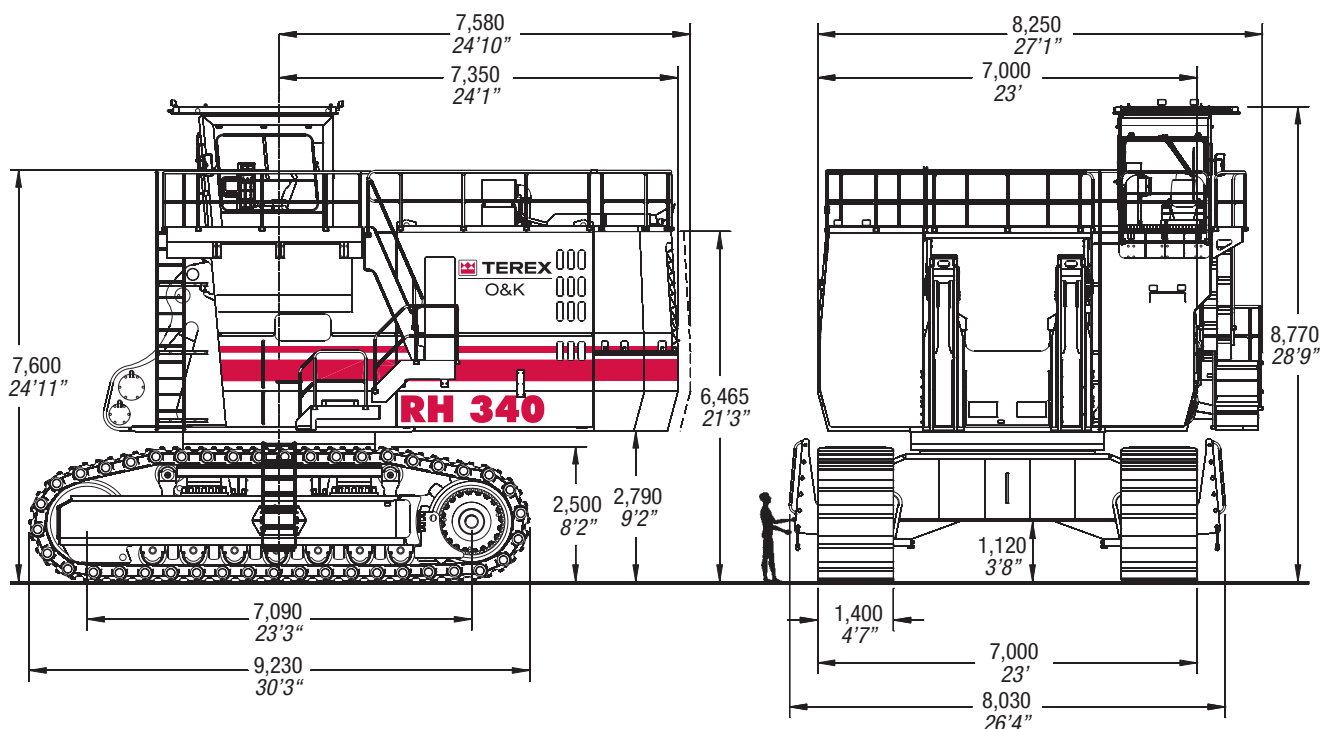
Standard bucket capacity

Face shovel (SAE 2:1)	34.0 m ³	44.5 yd ³
Backhoe (SAE 1:1)	34.0 m ³	44.5 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

General Dimensions



Operating Weight - Shovel

Standard track pads	1,400 mm	4'7"
Operating weight	552,000 kg	1,216,940 lbs
Ground pressure	24.7 N/cm ²	30.7 psi
Further track pads on request		

Operating Weight - Backhoe

Standard track pads	1,400 mm	4'7"
Operating weight	547,000 kg	1,205,920 lbs
Ground pressure	24.5 N/cm ²	30.9 psi
Further track pads on request		

Diesel Engines (standard)	
Make and model	2 x Cummins K 1500-E
Total rated net power ISO 3046/1	1,880 kW (2,520 HP) 1800 min ⁻¹
Total rated net power SAE J1349	1,880 kW (2,520 HP) 1800 min ⁻¹
Total rated gross power SAE J1995	1,880 kW (2,520 HP) 1800 min ⁻¹
Total max. gross power SAE J1995	2,240 kW (3,000 HP) 2100 min ⁻¹
No. of cylinders (each engine)	12
Bore	159 mm (6.25 in)
Stroke	159 mm (6.25 in)
Displacement	37.8 l (2,300 in ³)
Aspiration	Turbocharged and aftercooled
Max. altitude without deration	2,438 m (8,000 ft) a.s.l.
Emission certification	US EPA Tier 1
Fuel tank capacity	10,700 l (2,820 US gal)
▸ Hydraulically driven radiator fan with electronically controlled fan speed	
▸ Microprocessed engine control	
▸ 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	
▸ Eliminator with centrifuge for engine oil filtration	

Diesel Engines (optional)	
Make and model	2 x Cummins QSK 45
Total rated net power ISO 3046/1	2,240 kW (3,000 HP) 1800 min ⁻¹
Total rated net power SAE J1349	2,240 kW (3,000 HP) 1800 min ⁻¹
Total rated gross power SAE J1995	2,240 kW (3,000 HP) 1800 min ⁻¹
Total max. gross power SAE J1995	2,986 kW (4,000 HP) 1900 min ⁻¹
No. of cylinders (each engine)	12
Bore	159 mm (6.25 in)
Stroke	190 mm (7.48 in)
Displacement	45 l (2,746 in ³)
Aspiration	Turbocharged and aftercooled
Max. altitude without deration	4,267 m (14,000 ft) a.s.l.
Emission certification	US EPA Tier 1

Electric Motor (optional)	
Type	Squirrel cage induction motor
Output	1,800 kW
Voltage	4.0 - 7.2 kV ± 10 %
Rated current I _N	185 A (at 6.6 kV)
Frequency	50 Hz (60 Hz optional)
Revolutions	1,500 min ⁻¹ (1,800 min ⁻¹ optional)
Starting current	450% of I _N
▸ Custom-made electric motor with increased gap between rotor and stator to withstand severe mining conditions	
▸ Power limit control by Pump Management System	

Electrical System (diesel drive)	
System voltage	24 V
Batteries	6 x 170 Ah - 12 V each
in series/parallel installation	510 Ah - 24 V in total
Alternators	2 x 175 A each
Working spot lights	8 x high brightness Xenon lights
▸ Battery disconnect relays	
▸ Emergency stop switches accessible from ground level and in engine module	

Hydraulic System with PMS	
Main pumps	4 x variable flow axial piston pumps
Max. oil flow	4 x 925 l/min (4 x 244 US gal/min)
Max. pressure, attachment	32 MPa = 320 bar (4,640 psi)
Max. pressure, travel	36 MPa = 360 bar (5,220 psi)
Swing pumps	4 x reversible swash plate pumps
Max. oil flow	4 x 353 l/min (4 x 93 US gal/min)
Max. pressure, swing circuit	35 MPa = 350 bar (5,080 psi)
Total volume of hydraulic oil	approx. 8,400 l (2,220 US gal)
Hydraulic tank capacity	approx. 6,100 l (1,610 US gal)
▸ Pump Managing System (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 when hydraulic temperature is below / above set values or engine temperature is too high	
▸ Pressure cut-off for main pumps	
▸ Automatic double-flow for all cylinders	
▸ Filters:	
▸ Full-flow high-pressure filters (100 µm) for the main pumps, installed directly behind each pump	
▸ High pressure filters (200 µm) for the closed swing circuit	
▸ Full-flow filters (10 µm) for the complete return circuit	
▸ Pressure filters (40 µm and 6 µm) for servo circuit	
▸ Pressure filters (40 µm) for the feed pumps of the closed swing circuit	
▸ Transmission oil filters (40 µm)	

Hydraulic Oil Cooling	
Oil flow of cooling pumps	4 x 500 l/min (4 x 132 US gal/min)
Diameter of fans	4 x 1,170 mm (4 x 46")
▸ Cooling system is fully independent of all main circuits, i.e. full cooling capacity is available whenever engine is running	
▸ Gear type cooling pumps supplying high volume low pressure oil to fans and aluminium coolers	
▸ Fan speed and flow of oil to the coolers are thermostatically controlled	
▸ Extremely high cooling efficiency to ensure optimum oil temperature	

Swing System	
Swing drives	4 compact planetary transmissions with axial piston motors
Parking brakes	Wet multiple disc brake, spring loaded / hydraulically released
Max. swing speed	3.9 rpm
Swing ring	Triple race roller bearing with sealed internal gearing
▸ 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	1,000 l (264 US gal)
▸ 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	

Operator's Cab	
Operator's eye level	7.6 m (24'11") approx.
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, safety belt, head and arm rests ▶ Safety 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 auxilliary seat ▶ FOPS (rock guard; approved acc. to DIN ISO 3449) integrated into cab structure ▶ All-round tinted safety glass, armoured windshield and sliding side window ▶ Windshield with parallel intermittent wiper/washer ▶ Roller blind at windshield ▶ Robust instrument panel incl. large and 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 the engines, hydraulic system, pumps, motors and drive system 	

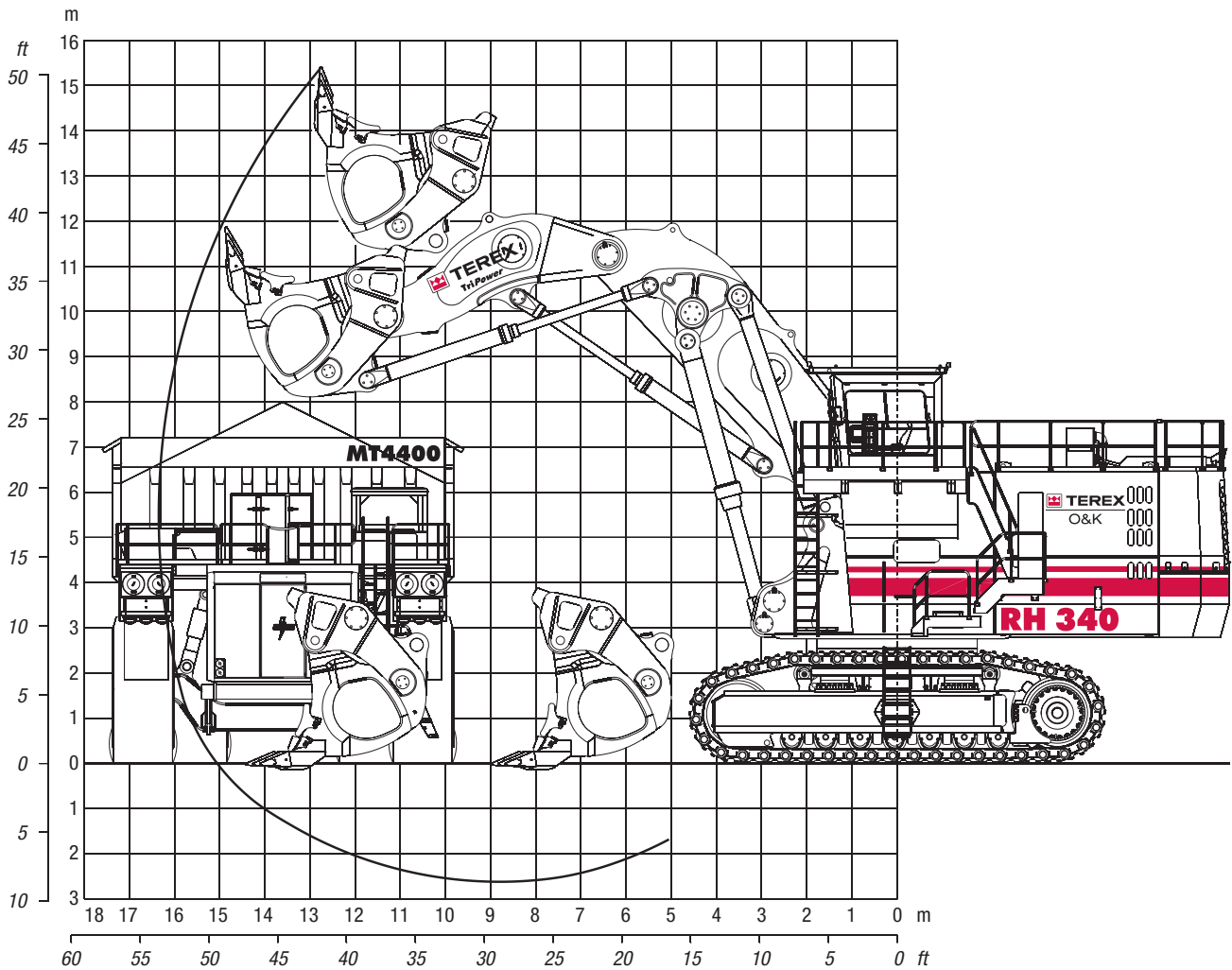
Undercarriage	
Travel speeds (2 stages):	Max. 2.0 km/h (1.24 mph) Max. 1.5 km/h (0.93 mph)
Max. tractive force:	2830 kN (288 t = 635990 lbs)
Gradability:	Approximately 54 %
Track pads (each side)	42
Bottom rollers (each side)	7
Support rollers (each side)	2 plus a sliding bar in the centre
Travel drives (each side)	1 planetary transmission with 2 two-stage axial piston motors
Parking brakes	Wet multiple disc brake, spring applied / 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 overspeed on downhill travel ▶ Acoustic travel alarm 	

Retractable Service Station	
<ul style="list-style-type: none"> ▶ Retractable service station installed underneath the engine module and easily accessible from ground. Equipped with: ▶ Quick couplings for: <ul style="list-style-type: none"> ▶ 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 ▶ Fuel gauge 	

Attachments	
<ul style="list-style-type: none"> ▶ Booms and sticks are torsion resistant, welded box design of high tensile steel with massive 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 ▶ Inspection holes in booms (FS & BH) and stick (FS only) ▶ "Pressure-free lowering" of boom (FS and BH) and stick (FS) by means of a float valve ▶ Shovel attachment with TEREX O&K's patented TriPower kinematics ensuring the following main features: <ul style="list-style-type: none"> ▶ 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 package suitable for all standard applications, which consists of: <ul style="list-style-type: none"> ▶ Special liner material covering main wear areas inside and outside of bucket ▶ Lip shrouds between teeth ▶ Wing shrouds on side walls ▶ Bottom edge protection 	
Special wear packages for highly abrasive materials on request	

Optional Equipment	
General	
<ul style="list-style-type: none"> ▶ Export crating ▶ Finishing other than TEREX O&K std. colours (TEREX O&K colour quality) ▶ Customizing of logos as per customer's specification 	
Superstructure	
<ul style="list-style-type: none"> ▶ Hydraulic service crane on superstructure with auxilliary engine ▶ Mesabi radiators instead of standard radiators ▶ Automatic fire suppression system ▶ Oil change interval extension for engine oil up to 1000 hrs ▶ Retractable boarding ladder ▶ Grease barrel 200 l (instead of grease container) ▶ Various cold weather packages 	
Cab	
<ul style="list-style-type: none"> ▶ Various heating and airconditioning systems ▶ Roller blinds at all windows ▶ Rear windscreen wiper ▶ BCS data-transfer-system ▶ Additional instrumentation 	
Undercarriage	
<ul style="list-style-type: none"> ▶ Track pad width 1,600 mm or 1,800 mm ▶ Automatic lubrication of rollers by central lube system 	
Attachment	
<ul style="list-style-type: none"> ▶ Catwalks with rails at boom ▶ Guards for shovel cylinders of FS-attachment ▶ Xenon lighting on boom ▶ Special wear packages 	
Further optional equipment on request	

Working Diagram - Face Shovel (FS) - Boom 8.0 m (26'2") - Stick 5.1 m (16'9")



Digging Forces

Max. crowd force	2,240 kN	503,400 lbs
Max. crowd force at ground level	2,100 kN	471,930 lbs
Max. breakout force	1,640 kN	368,560 lbs

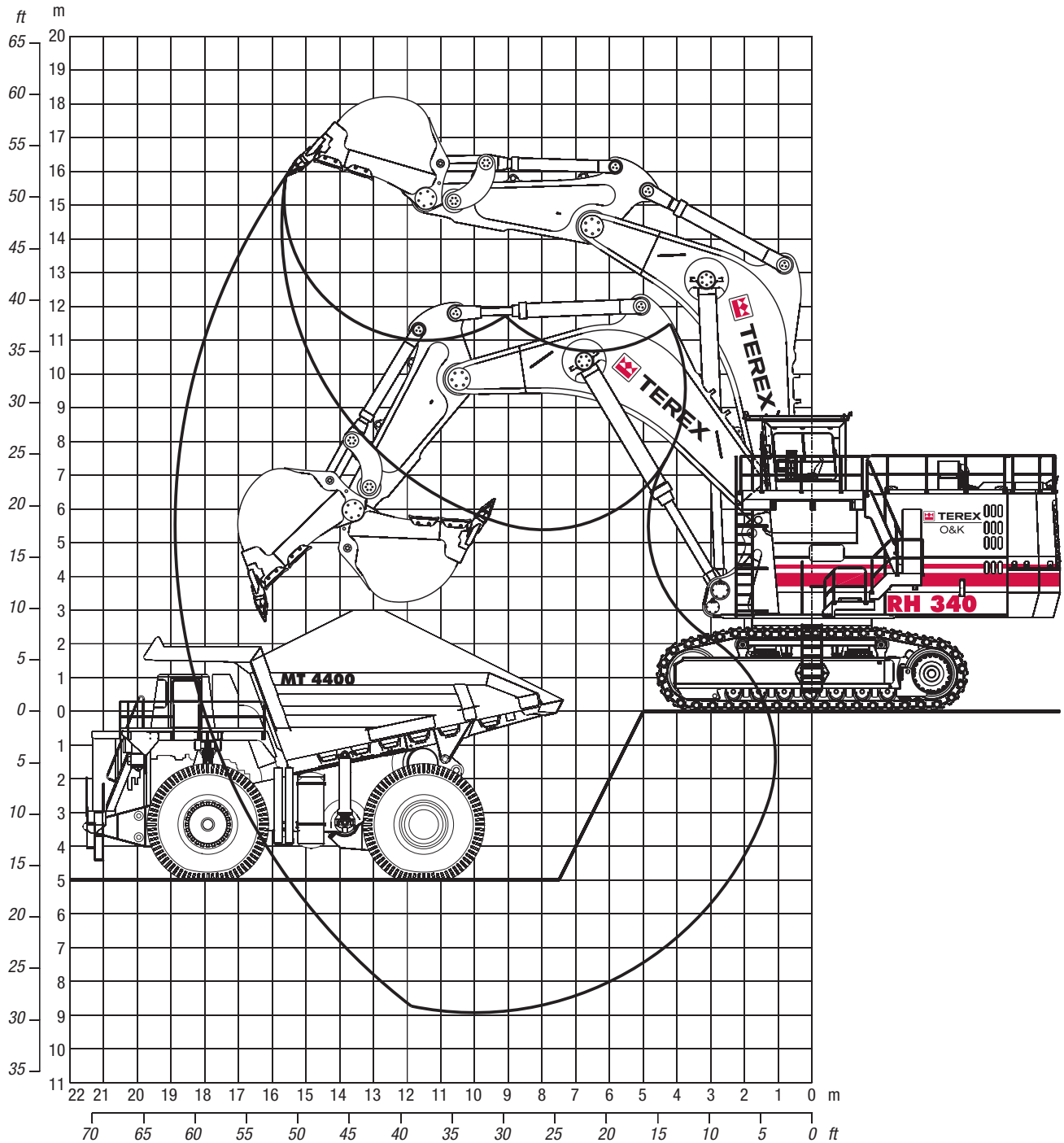
Working Range

Max. digging height	15.4 m	50'6"
Max. digging reach	16.3 m	53'6"
Max. digging depth	2.6 m	8'6"
Max. dumping height	11.5 m	37'9"
Crowd distance on level	5.4 m	17'9"

Face Shovels

Type	Heavy rock shovel		Standard rock shovel	
Tooth system	ESCO Posilok S 130		ESCO Posilok S 130	
Capacity SAE / PCSA 1:1	m ³	cuyd	33.0	43.2
Capacity SAE / CECE 2:1	m³	cuyd	28.0	36.6
Total width	mm	ft:in	4800	15'9"
Opening width	mm	ft:in	2150	7'1"
No. of teeth	6		6	
Weight incl. universal wear kit	kg	lbs	48,600	107,140
Max. material density (loose)	t/m ³	lbs/cuyd	2.2	3710
			1.8	3030

Working Diagram - Backhoe (BH) - Boom 10.5 m (34'5") - Stick 5.0 m (16'5")



Digging Forces

Max. crowd force	1,270 kN	285,410 lbs
Max. breakout force	1,240 kN	278,670 lbs

Working Range

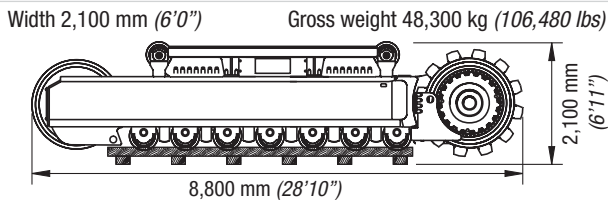
Max. digging depth	8.9 m	29'2"
Max. digging reach	18.9 m	62'0"
Max. digging height	15.9 m	52'2"

Backhoes

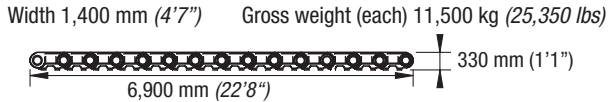
Type	Heavy rock bucket		Standard rock bucket	
Tooth system	ESCO Posilok S 130		ESCO size 110	
Capacity SAE 1:1	m³	cuyd	29.0	37.9
Capacity CECE 2:1	m ³	cuyd	25.4	33.2
Capacity struck	m ³	cuyd	21.9	28.9
Total width	mm	ft:in	4,270	14'
No. of teeth	5		6	
Weight incl. universal wear kit	kg	lbs	31,300	69,000
Max. material density (loose)	t/m ³	lbs/cuyd	2.1	3,540
			1.8	3,030

General Packing List (approx. values; details may vary depending on scope of supply and destination)

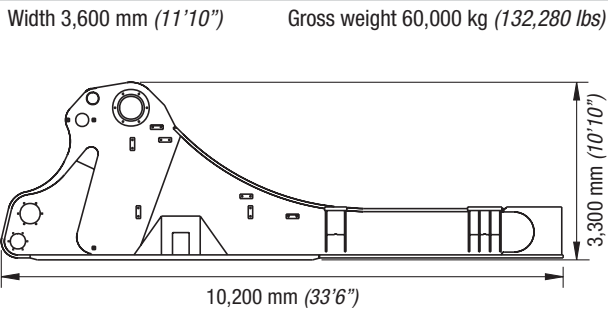
Crawler side frame (2 units)



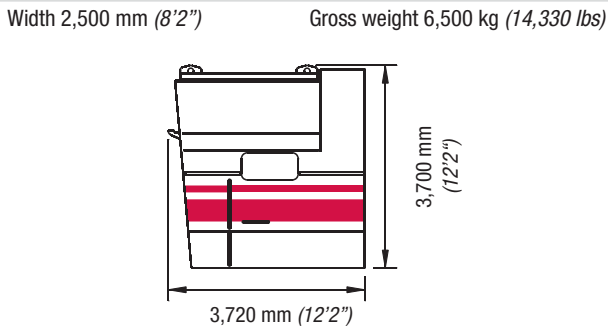
6 tracks consisting of 14 pad links; each:



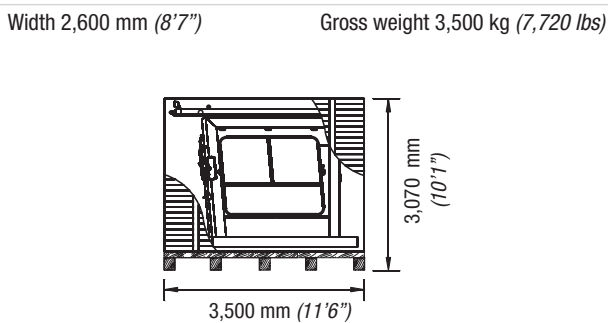
Superstructure centre frame



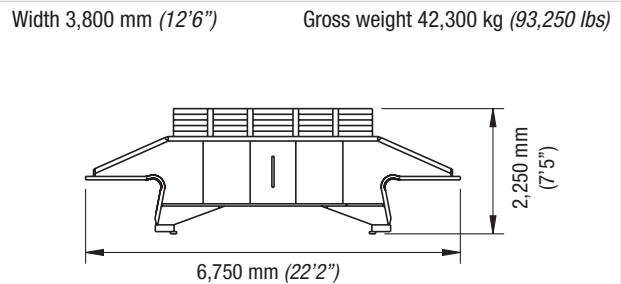
Cab pedestal module



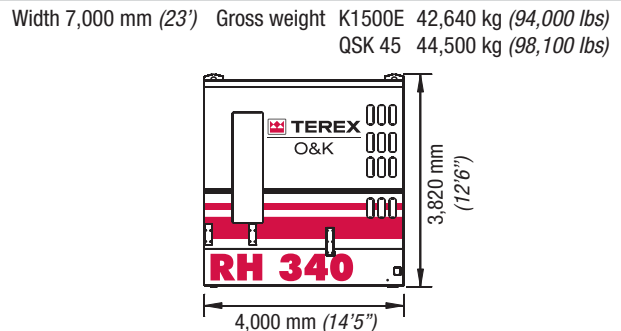
Crate with cabin and FOPS



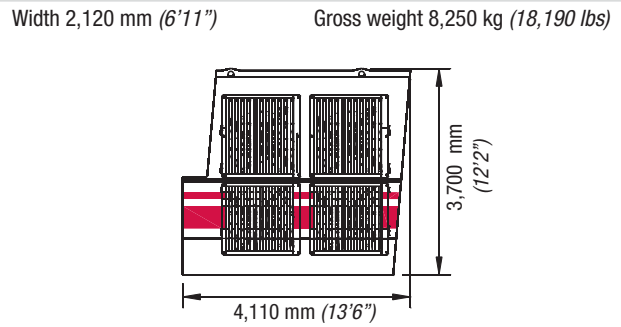
Undercarriage centre frame with swing roller bearing



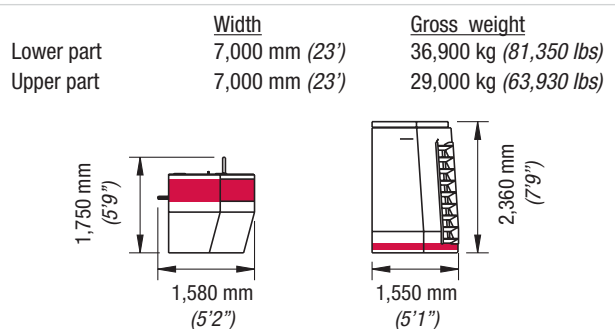
Engine module with diesel engines



Oil cooler module



Counterweights



Crates

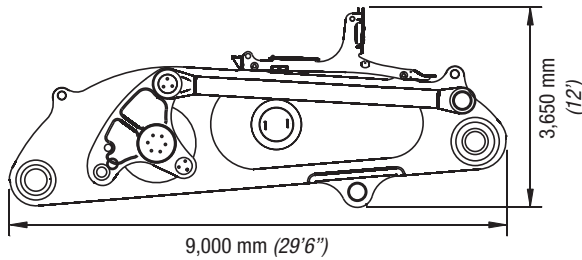
Content	Length mm (ft:in)	Width mm (ft:in)	Height mm (ft:in)	Gross weight kg (lbs)	
Radiators with fan; 2 crates each:	2,700 (8'10")	2,100 (6'11")	710 (2'4")	1,230 (2,710)	
Four swing gears	1,350 (4'5")	1,350 (4'5")	1,900 (6'3")	5,340 (11,770)	
Swing ring cover	2,200 (7'3")	1,300 (4'3")	1,030 (3'5")	390 (860)	
Swing ring bolts, access ladder, etc.	3,300 (10'10")	1,600 (5'3")	1,260 (4'2")	3,700 (8,160)	
Catwalks and other parts	4,950 (16'3")	1,900 (6'3")	1,740 (5'9")	3,500 (7,720)	
Grease container with pump	1,700 (5'7")	1,300 (4'3")	2,050 (6'9")	1,470 (3,240)	
Barrels (hydraulic oil; grease)	3,700 (12'2")	1,350 (4'5")	1,350 (4'5")	3,150 (6,940)	
Barrels (engine oil; antifreeze)	2,000 (6'7")	1,350 (4'5")	1,400 (4'7")	1,380 (3,040)	

All details provided are for general information only. Exact dimensions subject to selected machine configuration and final packing list.

TriPower Shovel Attachment

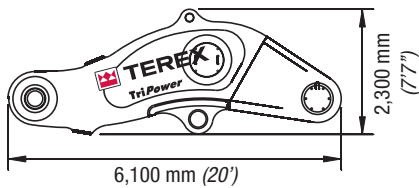
Boom with main valve, TriPower linkages and rods

Width 3,050 mm (10') Gross weight 44,000 kg (97,000 lbs)



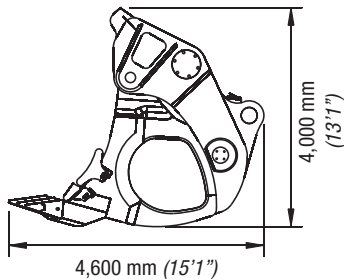
Arm / stick

Width 2,660 mm (8'9") Gross weight 16,500 kg (36,380 lbs)



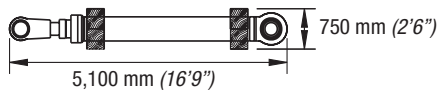
Face shovel incl. pin for stick

Capacity (2:1) Width Gross weight
34.0 m³ (44.5 cuyd) 5,000 mm (16'5") 52,600 kg (115,960 lbs)



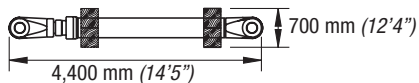
Bundle with 2 boom cylinders

Width 1,200 mm (3'11") Gross weight 8,250 kg (18,190 lbs)



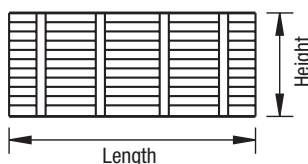
2 bundles with 2 stick cylinders and 2 bucket cylinders, each:

Width 1,200 mm (3'11") Gross weight 3,800 kg (8,380 lbs)



Crates with catwalks, railings and other parts

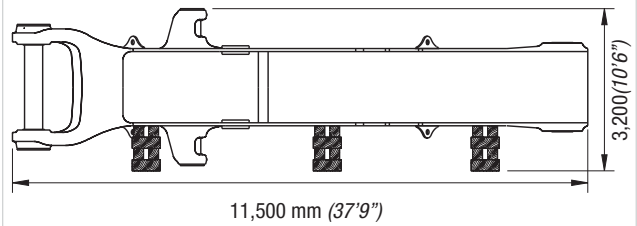
Length mm (ft.in)	Width mm (ft.in)	Height mm (ft.in)	Gross weight kg (lbs)
3,900 (12'10")	1,900 (6'3")	1,600 (5'3")	3,300 (7,280)



Backhoe Attachment

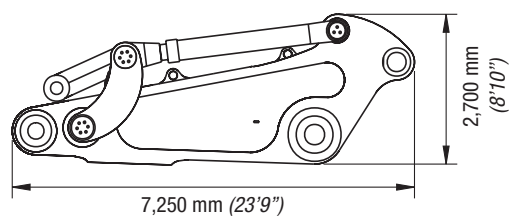
Monoboam without main valve block

Width (Height) 5,000 mm (16'5") Gross weight 41,600 kg (91,710 lbs)



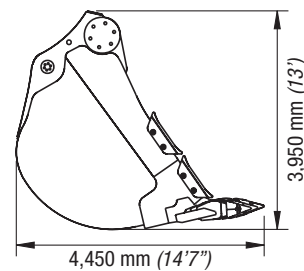
Arm with linkage and bucket cylinders

Width 2,300 mm (7'7") Gross weight 26,800 kg (59,080 lbs)



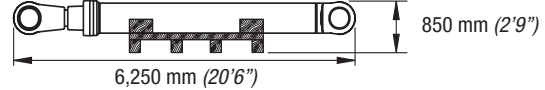
Backhoe bucket incl. pins for stick and linkage

Capacity (1:1) Width Gross weight
34 m³ (44.5 cuyd) 4,600 mm (15'1") 33,100 kg (72,970 lbs)



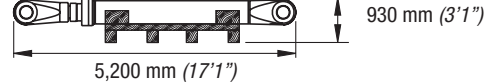
2 pallets with boom cylinders, each:

Width 800 mm (2'7") Gross weight 7,180 kg (15,830)



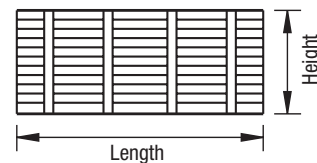
2 pallets with arm cylinders, each:

Width 800 mm (2'7") Gross weight 4,200 kg (9,260)



Crates with main valve block, catwalks, railings and other parts

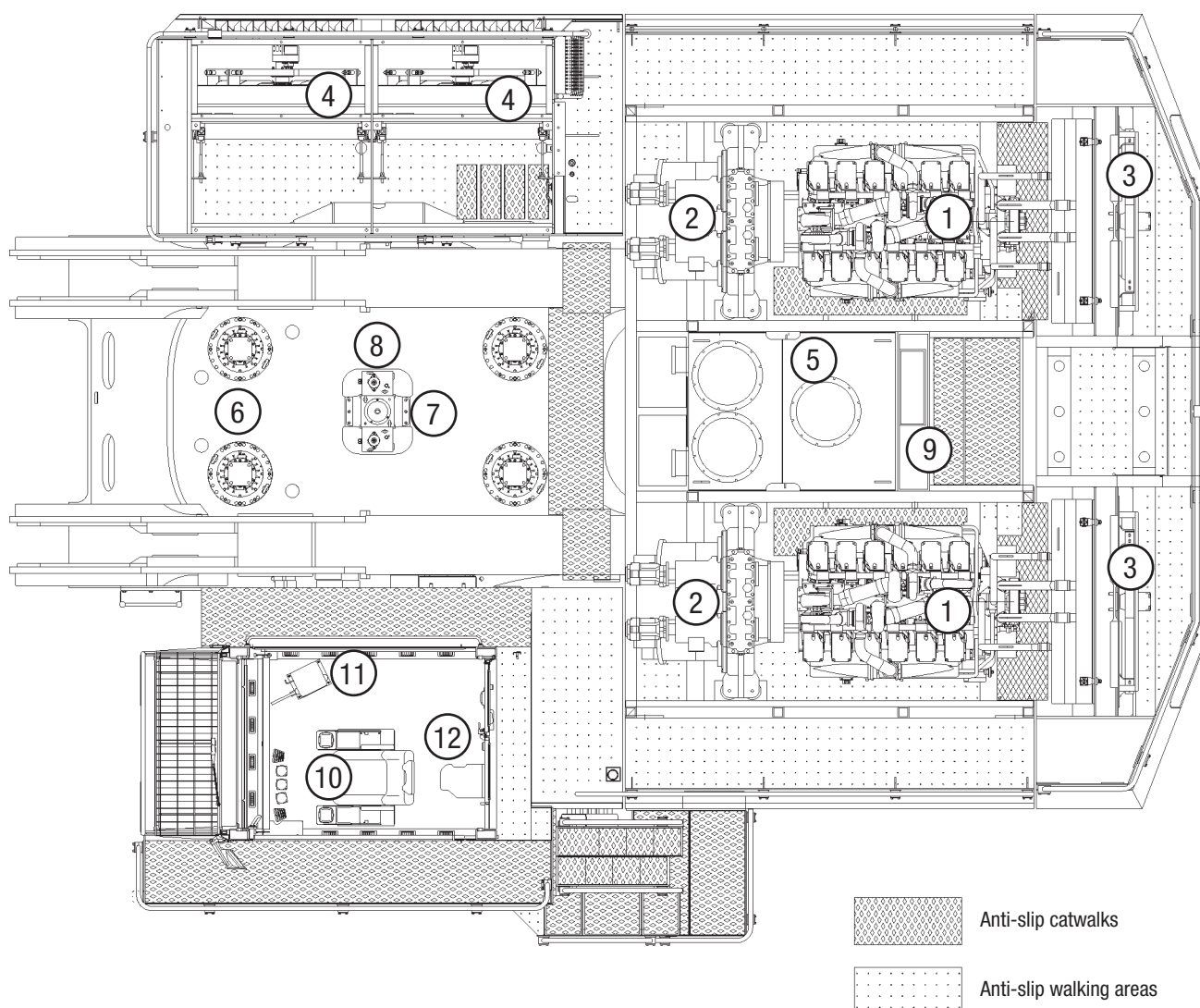
Length mm (ft.in)	Width mm (ft.in)	Height mm (ft.in)	Gross weight kg (lbs)
4,500 (14'9")	2,150 (7'1")	1,700 (5'7")	4,400 (9,700)
3,900 (12'10")	1,900 (6'3")	1,600 (5'3")	3,100 (6,830)



Hydraulic Mining Excavator RH 340

Component accessibility on superstructure

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



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