TEREX

TS14B Scraper

21 770 kg (48 000 lb) Payload
10.7 m^3 (14 yd^3) Struck Capacity
215 kW (288 hp) Net Power
All-Wheel Drive


TEREX
TEREX
TS14B

Illustrations may show optional equipment

Form No. 313/235D Feb 1989

TEREX TS14B Scraper

Tractor-B20UOT Scraper-B97SH

Capacity

Struck (SAE) ..... 10.7 m^3 (14.0 yd^3)
Heaped 3:1 ..... 12.2 m^3 (16.0 yd^3)
Heaped 2:1 ..... 13.0 m^3 (17.0 yd^3)
Heaped 1:1 (SAE) ..... 15.3 m^3 (20.0 yd^3)

Bowl backboard to prevent spillage ..... 1 070 mm (42 in)

Engines (front and rear)

Detroit Diesel 4-71N, 2 Cycle Diesel

Dual pedals allow synchronised operation of Tractor and Scraper engines or independent control of Tractor engine. The rear engine is equipped with an alarm to warn of engine malfunction.
Power ratings are at sea level and 15.5°C (60°F).

Gross Power @ 2 100 rev/min ..... 119 kW (160 hp)

Net Power @ 2 100 rev/min ..... 107 kW (144 hp)
after deductions for fan, alternator and air compressor.

Maximum Torque @ 1 400 rev/min ..... 574 Nm (423 ft-lb)

Number of Cylinders 4

Bore and Stroke ..... 108 x 127 mm (4.25 in x 5 in)

Piston Displacement ..... 4.7 litre (284 in^3)

Maximum rev/min—full load 2 100

Air Cleaner ..... Dry, T-type

Transmissions (front and rear)

Allison CLT-3461 Powershift Transmission.

Integral TC-420 Torque Converter and Planetary Gearing. Six speeds forward and one reverse. Automatic lock-up in top five speed ranges. Manual, air-assisted shifting and downshift inhibitor. The rear transmission is equipped with an alarm which warns of transmission malfunction.

Ratios: 1st 3.81:1 2nd 2.74:1 3rd 1.94:1
4th 1.39:1 5th 1.00:1 6th 0.72:1
Reverse 4.35:1

Transfer Case Gear Ratio 1.21:1

Maximum Speed @ 2 100 rev/min ..... 37 km/h (23.0 mph)

Axles

Heavy duty, full floating with single reduction bevel gear differential and planetary reduction in each wheel.

Ratios: Differential 4.11:1
Planetary 5.33:1
Total Reduction 21.91:1

A NoSpin differential is standard in rear axle for improved traction in difficult conditions.

Brakes

Full air operated drum brakes with automatic emergency application on loss of air pressure. Hand control lever for individual braking of tractor wheels to assist traction in difficult conditions. Emergency system can also be manually applied. Parking by mechanical locking of service brakes. Air-water separator standard.

Brake Lining:

Diameter ..... 508 mm (20.0 in)
Shoe Width ..... 152 mm (6.0 in)
Lining Thickness ..... 19 mm (0.75 in)
Lining Area—Each Axle ..... 3 355 cm^2 (520 in^2)
Air Compressor Capacity ..... 5.7 litre/s)12 ft^3/min)

Tires

Tire Size	Rim Width
Standard 29.5 – 25 (28 PR) E-3	25 in
or 29.5 – 25 (Two Star) XRB	25 in

NOTE: Performance capabilities of TEREX Scrapers are such that under specific job conditions the tonne-km/h (ton-mile/h) capability of Standard or Optional tires can be exceeded and may lead to premature tire problems. TEREX recommends that the user consults the tire manufacturer to evaluate all job conditions in order to make the proper tire selection.

Steering

Full hydraulic steering by two interchangeable single stage, double acting cylinders. Full 90° swing right or left.

Cylinder bore and stroke ..... 140 x 445 mm (5.5 x 17.5 in)
Pump Capacity @ 2 100 rev/min &
12 755 kPa (1 850 lbf/in^2) ..... 2.8 litre/s (37 US gal/min)
System Pressure @ 1 500 rev/min ..... 12 755 kPa (1 850 lbf/in^2)

Hydraulics

Full flow filtered system with one reservoir supplying a triple section gear pump for steering and scraper hydraulics.

Scraper Functions:
Capacity @ 2 100 rev/min ..... 4.3 litre/s (68 US gal/min)
System Pressure @ 1 500 rev/min 10 340 kPa (1 500 lbf/in^2)

Servo Controls Pump:
Capacity @ 2 100 rev/min ..... 0.68 litre/s (10.8 US gal/min)
System Pressure @ 1 500 rev/min ..... 1 725 kPa (250 lbf/in^2)

Controls
Three finger-tip servo assisted levers allow independent operation of bowl, apron and ejector.

Bowl
Operated by two interchangeable single acting cylinders and linkage.

Cylinders Bore and Stroke ..... 233 x 460 mm (9.17 x 18.22 in)

Apron
Fully floating, operated by a single acting cylinder with a roller guided 19 mm cable.

Cylinder Bore and Stroke ..... 233 x 635 mm (9.17 x 25.0 in)

Ejector
Positive roll-out type operated by a single acting cylinder.

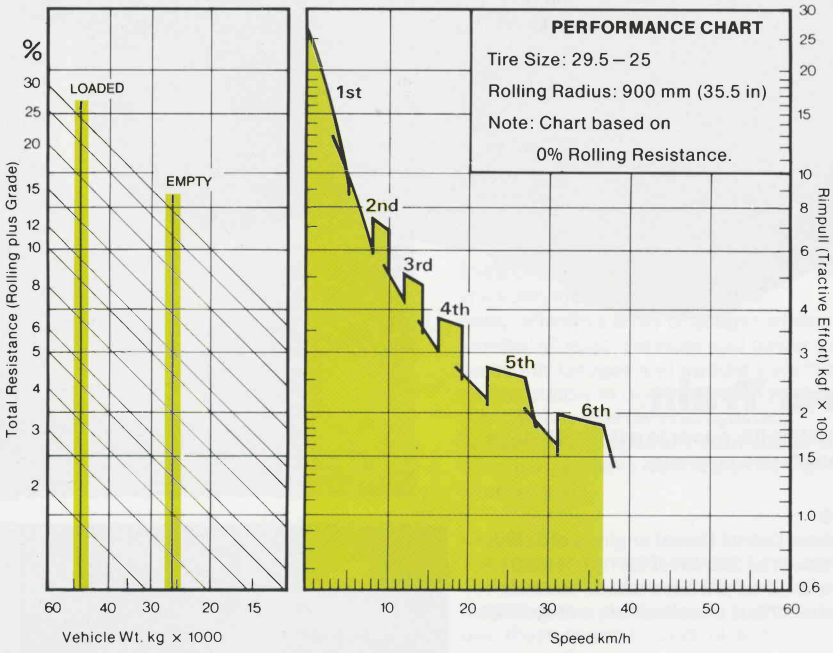
Cylinder Bore and Stroke ..... 233 x 635 mm (9.17 x 25.0 in)

NOTE: Apron and Ejector cylinders are interchangeable.

Electrics

24 Volt, negative ground, direct electric starting with neutral safety start position and master disconnect switch.

Batteries	2 x 12 Volt
Alternator	65 amp
Regulator	Transistorised and integral with Alternator
Lights	Front (4), Cutting Edge, Stop/Tail (2)



Instructions: From intersection of Vehicle Weight with Total Resistance line read across to determine gear range and Vehicle Speed.

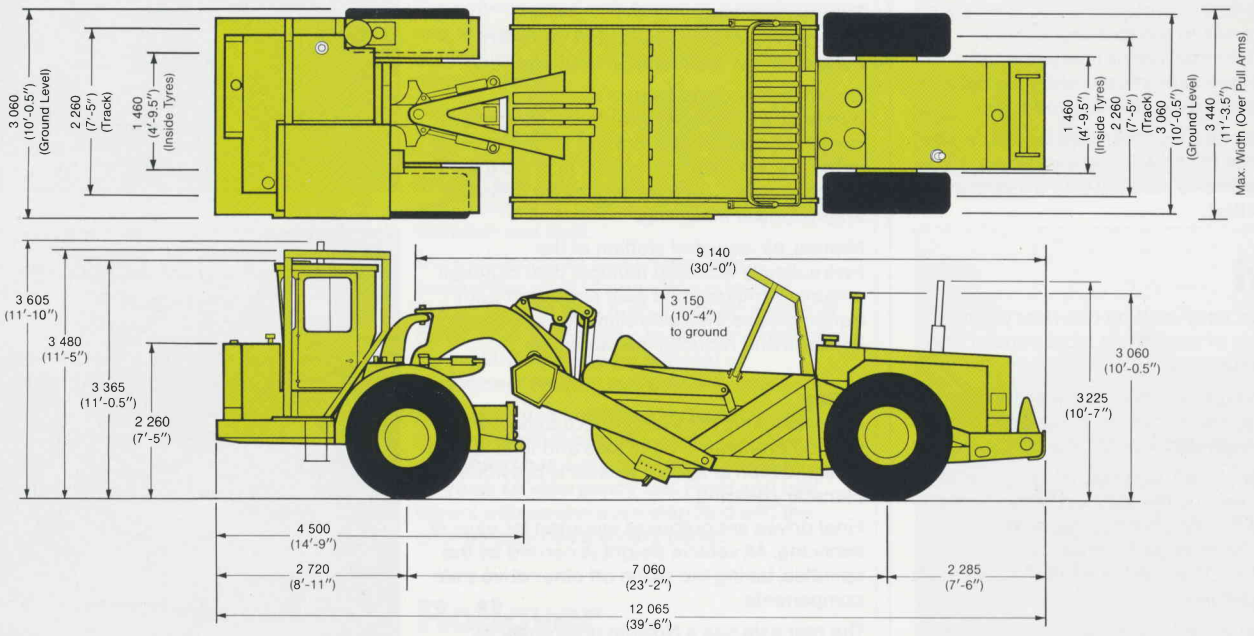
Cutting Edge

The cutting edge is in four sections which allows either straight or variable length drop center. All the sections are interchangeable and reversible. Dimensions 406 x 724 x 25 mm (16 x 28.5 x 1.0 in)

Measurements

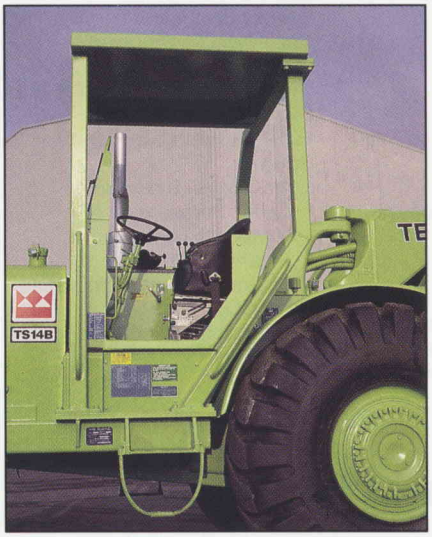
Net Weight Distribution	kg	(lb)
Tractor Axle 58.4%	15 250	(33 620)
Scraper Axle 41.6%	10 880	(23 980)
Total	26 130	(57 600)
Payload	21 770	(48 000)
Gross Weight Distribution		
Tractor Axle 51.6%	24 700	(54 450)
Scraper Axle 48.4%	23 200	(51 150)
Total	47 900	(105 600)

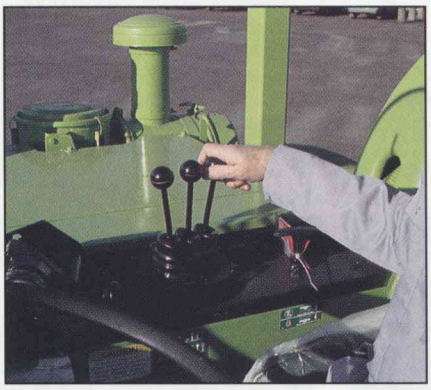
Dimensions	mm	(ft-in)
Apron Opening	2 100	(6-10.7)
Width of Bowl and Cutting Edge	2 910	(9-6.6)
Width of Cut	3 000	(9-10)
Depth of Cut—maximum	355	(1-2)
Depth of Spread—maximum ...	710	(2-4)
Clearance under Drive Axle	585	(1-11)
Clearance under Bowl	585	(1-11)
Non-Stop 180° Turning Width for vehicle clearance	16.9 m	(55-5)
Overall Length with Optional Twin Hitch	mm	(ft-in)
Bail Raised	13 600	(44-7)
Bail Lowered	14 040	(46-8)

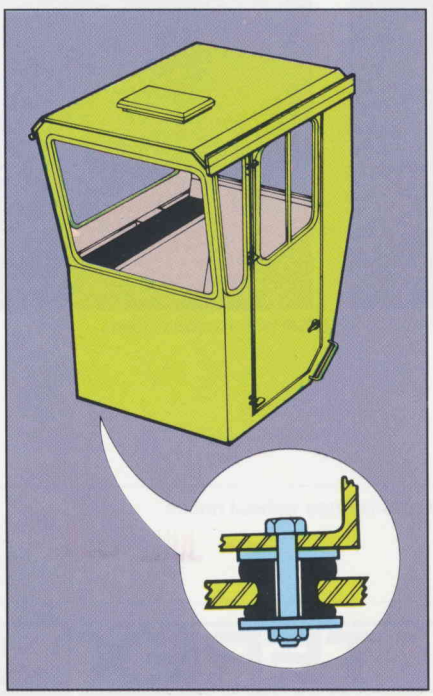


All vertical measurements with bowl at 300 mm (12 in) carry position. Unit empty.

The TS-14B, proved and continuously developed for over 20 years, is one of the most successful, low-cost, reliable scrapers in the 11m³ (14 yd³) class worldwide—with many thousands of units in service.
Ideally suited for conditions where mobility and maneuvrability are important the TS-14B's economic production capabilities gain a further improvement with the refinements in ease of operation and driver comfort introduced with this latest model.



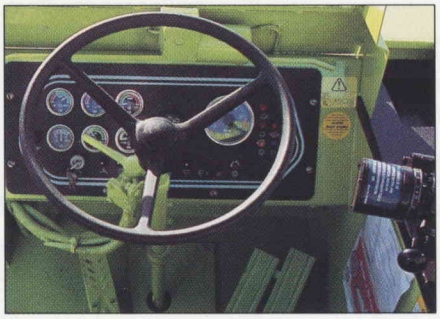




Operator's Compartment

The standard open operator's compartment is isolation mounted and includes a front windshield, wiper and washer.

The air suspension seat, which is angled slightly to the right for improved visibility of the cutting edge, is adjustable for height, tilt, fore and aft, as well as ride firmness.



Instruments

The instrument panel contains a comprehensive array of gauges which monitor all major services and power train functions. Gauges and switches are readily visible, simple to understand and are clearly identified by international symbols. Temperature gauges are color coded and all other gauges have dual scales for metric and imperial units.

Controls

The scraper control levers for bowl, apron and ejector functions are conveniently mounted on a shelf console. Light and easy to use, these finger-tip control levers are hydraulically servo-assisted.

The air-operated transmission shift control valve and the parking/emergency brake control valve are also located on the console, as is the engine shut down control.

Optional Cab

The soft-mounted cab provides a comfortable and efficient working environment which contributes to high productivity by minimising operator fatigue.

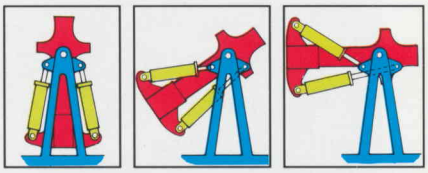
Four large rubber mountings isolate the cab from transmitted noise and vibration. In-cab noise levels are further reduced by fully lining the roof and side panels. A two-layer floor-mat provides an additional barrier to noise, vibration and heat.

The roof-mounted heater/demister/pressuriser module provides up to 7kW (23 900 Btu/h) heat output with an airflow of 8.5m³ (300 ft³) per minute via four directional vents. When desired an optional air conditioner module replaces this unit.

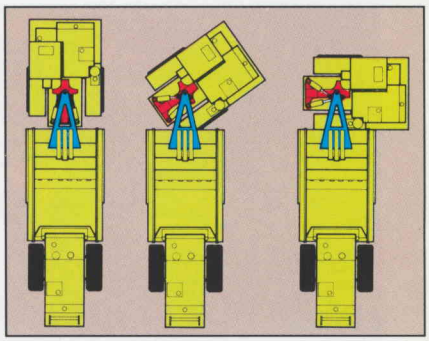
Safety features include an adjustable seat belt and laminated safety glass. The front windshield has a quick release device to serve as an emergency exit. Front and rear wipers with washers are standard and the door window has a sliding panel.

Rollover Protection

A standard ROPS Canopy fits over the open compartment or optional cab.



GOOSENECK STEERING FRAME



Full 180 degrees Steering

The TS14B can complete a full turn within a width of 16.9 m (55.5 ft)—this excellent maneuverability resulting from full 90° steering to left or right. Steering effort is provided by two low-mounted hydraulic cylinders for increased unit stability.

On steering to the right, the right hand cylinder extends and the left retracts. Approximately 35° into the turn the left cylinder is fully retracted and a flow reversing valve mounted on the steering frame is actuated. With reverse oil flow to the left cylinder it then extends, assisting the right cylinder to complete the 90° turn.

The speed of turn is controlled by the degree of rotation of the steering wheel making for quick, responsive steering with a minimum of operator effort.

Bowl

The unique, easy-loading bowl has made the TS-14B one of the world's most popular twin-engined scrapers.

The apron arms are mounted outside the bowl and are therefore not subjected to abrasion and restriction by the load.

The gravity closed, semi-radial apron gets down and around the load with ease and is controlled by one single-stage, single-acting hydraulic cylinder for simplicity of maintenance. The apron and ejector cylinders are interchangeable.

Four-piece, reversible and interchangeable cutting edges give extended total service life and can be positioned in drop center or other configurations to suit different material and loading conditions.

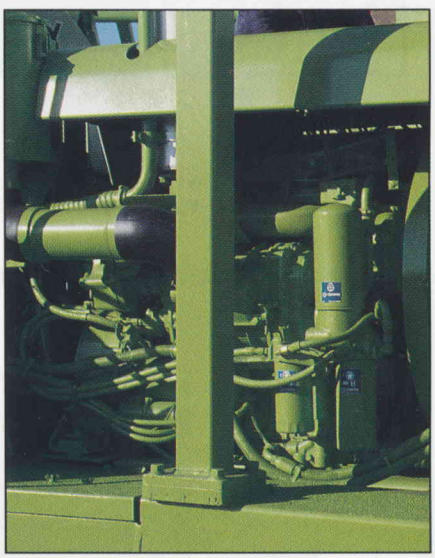
Power Train

The TS14B has the power to get the job done with reliability and economy.

Engines

Two identical Detroit Diesel engines deliver a total net power of 215 kW (288 hp). These two-cycle engines produce power on every downstroke for fast acceleration, and smooth running.

Low pressure unit-injector fuel system provides reliability and low-cost maintenance. For maximum availability and minimum cost, approximately 70% of the moving parts are interchangeable with other 71 Series Detroit Diesels. Fewer parts need to be stocked to meet maintenance requirements.



Transmissions

Well-proven Allison powershift planetary transmissions are identical front and rear.

Both transmissions feature an integral hydraulic torque converter for all six forward ranges and automatic lock-up for direct drive in the top five forward ranges, providing an effective eleven forward ranges for optimum engine power matching.

Manual, air-assisted shifting of the hydraulically actuated multiple disc clutches ensures simultaneous gear shifting of both transmissions. This also eliminates mechanical linkages and reduces maintenance.

Axles

All-wheel drive is by single-reduction, bevel gear differentials in each axle and final torque multiplication at all four wheels is provided by planetary gearing.

Final drives are outboard mounted for ease of servicing. All vehicle weight is carried by the spindles, taking the strain off other drive train components.

The rear axle has a NoSpin differential as standard and an optional controlled traction (or limited slip) differential is available for the tractor axle for use in poor traction conditions.

Service Data

	Tractor litre	(US gal)	Scraper litre	(US gal)
Cooling System	38	10	38	10
Fuel Tank	360	95	303	80
Crankcase (dry fill)	14	3.7	14	3.7
Transmission and Converter	23	6.0	23	6.0
Drive Axle	17	4.5	17	4.5
Hydraulic System	204	54	—	—

Designed for ease of servicing, daily, (10 hour) service requirements have been eliminated except for visual checks. The shortest lubrication interval is 50 service hours.

* All filters, dipsticks, level checks and fill ports are positioned for ease of accessibility.
* Engine coolant levels are continuously monitored by sensing probes and warning lights alert the operator of low levels. Access steps and skid-resistant walkways are provided at service points. Rear power train alarm alerts operator to low engine oil pressure, high coolant temperatures and high torque converter temperature.

Front Engine Dipstick and Oil Filters


Transmission Oil Level Dipstick

Standard Equipment

Standard equipment fitted may vary from country to country. Consult your local dealer.

Tractor

Operator Compartment-open, with windscreen, wiper and washer
Canopy-ROPS (SAE J1040)
Air Horn
Air Suspension Seat
Battery Disconnect Switch
Gauges:
- Air Pressure
- Ammeter
- Hourmeter
- Tachometer

Seat Belt (SAE J386)
Cutting Edge Floodlight
Fenders
Individual Wheel Brake Control
Servo Scraper Controls

Scraper

Alarm—Three Way:
- High Converter Temperature
- High Coolant Temperature
- Low Engine Oil Pressure

NoSpin Differential
Reverse Alarm-Audible (SAE J994)
Spillguard Extension

Tractor and Scraper

Aspirated Air Cleaners
Brake Drum Guards
Downshift Inhibitor
Dry, T-type Air Cleaners
Emergency and Parking Brake System (SAE J319B and J1152)
Fan Guards
Full Flow Hydraulic Filtration
Gauges:
- Air Cleaner Restriction
- Clutch Pressure
- Converter Temperature
- Engine Oil Pressure
- Engine Coolant Temperature

Exhaust Mufflers
Low Coolant Level Warnings
Security Kit

Optional Equipment

Air Conditioner
Air Dryer
Cab-isolation mounted
Cold Start Aids
Controlled Traction Differential (Tractor only)
Fenders (Scraper only)
Heater/Demister/Pressuriser
Radiator Guard, Heavy Duty (Scraper only)
Roller Push Block (cannot be used with Twin Hitch)
Severe Application Modifications
Transmission Guard (Tractor)
Twin Hitch


Rear Engine Instrument Panel

Service Access Steps

Distributor:

Specifications subject to change without notice.

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