

TS220

Towed Scraper

CATERPILLAR®



Scraper Bowl

Capacity – Heaped	18 m ³	23.5 yd ³
Width of Cut, to Router Bits	3480 mm	11 ft 5 in
Rated Load	25 580 kg	56,400 lb
Capacity – Struck	13 m ³	17 yd ³
Depth of Cut – max	262 mm	10.3 in

TS220 Features

High-Strength, Abrasion-Resistant Steel

High-strength, abrasion-resistant steel on the apron face, floor, walls, and ejector minimizes wear – yard after yard.

Standard Heavy-Duty, Construction-Grade Brakes

Standard dry-disc brakes enhance your job site safety.

Standard Radial Tires

Standard radial tires deliver reduced rolling resistance, excellent flotation, and durability.



Contents

Scraper Bowl.....	3
Tongue and Hitch	4
Attachments.....	5
Wheels, Brakes	5
Hydraulics	6
Customer Support.....	7
TS220 Towed Scraper Specifications.....	8
TS220 Standard Equipment.....	10
TS220 Optional Equipment.....	10
Notes.....	11

Originally designed by a road contractor for the construction industry, the Cat® TS220 Towed Scraper delivers outstanding performance and legendary durability. High-strength, abrasion-resistant steel in the scraper bowl minimizes wear. The rugged hitch, tongue, and structural design ensure long life in the toughest job site conditions. Designed to be pulled by Caterpillar® Track-Type Tractors or Challenger™ Special Application Tractors, the Cat TS220 Towed Scraper raises the standard.

Scraper Bowl

Unmatched Durability.

High-Strength Bowl Design

The scraper bowl is constructed using L-shaped box sections of high strength steel for superior strength and dent resistance. The floor is a box-section structure made from high-strength, abrasion-resistant steel for maximum strength during top loading and rigidity during intermittent push loading. High-strength, abrasion-resistant steel is used throughout the inside of the bowl for maximum wear resistance.

Center Lift Design

The center bowl lift design improves the strength and durability by placing the hydraulic cylinders between the tongue and spreader tube. This eliminates the need for draft arms, reduced weight and complexity.

Cutting Edges

Common Cat Wheel Tractor Scraper cutting edges and router bits are used to ensure exceptional performance and great availability. The center cutting edge is in the stinger (drop down) position for good penetration and efficient material flow into the bowl. When worn, the cutting edges can be rotated by 180 degrees, doubling the life.

Ejector

The ejector is constructed from a single plate of high-strength, abrasion-resistant steel. The ejector extends beyond the front edge of the scraper floor to minimize carryback. To minimize wear, the ejector weight is carried on steel rollers supported by a wear strip welded to the bowl floor. At the sides, alignment is maintained by Ultra High Molecular Weight (UHMW) plastic guides.

Depth Indicator

A depth indicator is mounted on trailing scrapers to provide the operator a visual reference to scraper cut depth.



Tongue and Hitch

Rugged and Dependable.



Hitches for Cat® Tractors

Robust hitches are available for Cat® Track-Type Tractors and Challenger MTS800 / MTS900 Series Tractors. See your Caterpillar dealer for hitches for other pulling machines.

Rugged Hitch

To prevent pin wear, the hitch uses a massive 89 mm (3.5 in) hitch pin securely held in place by eight bolts.

The hitch platform, positioned between the pulling machine and the tongue, contains two pins that allow ± 45 degrees of side-to-side oscillation (roll), ± 90 degree turns (yaw), and ± 27 degrees of uphill/downhill movement (pitch).

An integrated stop block allows a 90 degree turning radius while preventing contact between the tongue and the pulling machine tires/tracks.

An adapter is available to quickly convert the scraper hitch for pulling drawn implements such as disk harrows and sheepsfoot compactor rollers.

Robust, Straight-Line Design

Built from 13 mm (0.5 in) structural plate steel, the tongue is built to withstand the high drawbar forces imposed by track-type tractors pulling towed scrapers.

The straight-line design eliminates draft arms, hydraulic cylinders, and lines located outside the width of the bowl, improving the overall strength to most effectively transfer the drawbar power to the cutting edges.

Countersunk Tandem Hitch

A countersunk hitch is provided in the push block of lead scrapers, allowing the scraper to be push loaded when a second scraper is not used.

Attachments

Lower the costs of Challenger™ Tractors in scraper applications.



Rubber Track Guides

Rubber Track Guides for Challenger MTS800 Series Tractors allow the rubber tracks to move and ride along roller wheels, but do not allow the track to move into the machine and causes expensive downtime. The track guides extend the service life of the belt as the side-loading on the belt guide blocks is reduced.

Detracking is generally caused by sharp turns, usually under load. The rubber track guides can minimize tractor damage caused by detracking, but are not a replacement for sound operating techniques. Your Cat Dealer can provide training in proper towed scraper operation.

Hydraulic Hose Hanging Tower Kit

The hydraulic hose hanging tower kit for Challenger MTS800 and MTS900 Series Tractors allows the hoses to move freely and eliminate entanglement while maintaining vertical alignment for reduced hose fitting and valve wear to increase service life.

Wheels, Brakes

Raising the Standards.

Standard Brakes

Standard heavy-duty, construction-grade brakes bring a new level of safety to the job site. Each machine is equipped with four calipers. Brake components are the same as were used on Cat Articulated Trucks.

Standard Radial Tires

Standard radial tires reduce rolling resistance and provide excellent flotation and durability. Heavy-duty, five-piece rim ensure a long service life. Wheel hubs are oil filled and sealed with Cat Duo-Cone™ seals.



Hydraulics

Tough components for tough applications.



Hose and Couplings

Cat XT™-3 ES (Enhanced Spiral) hose is used. Cat XT-3 ES hose has an exclusive cover which is formulated and manufactured by Caterpillar to provide up to 20 times more abrasion resistance than industry-standard hose. Cat XT ES hose works at half of the SAE's bend radius without sacrificing cold flex capability.

As further protection, all exposed hydraulic lines are solidly secured with rubber-lined clamps, protecting the hoses from failures caused by rubbing. All hydraulic hoses and lines use O-Ring Face Seal (ORFS) fittings for maximum leak prevention.

Steel Lines in Bowl Walls

Brake lines and hydraulic lines for the rear scraper in tandem arrangements use steel lines inside the scraper bowl walls – eliminating hose damage caused by material in the bowl or during top loading.

Cushion Hitch

The optional cushion hitch adds two hydraulic accumulators to the scraper bowl lift circuit. When the operator activates the cushion hitch feature during transport, the accumulators allow the scraper bowl lift hydraulic cylinders to act as shock absorbers. The cushion hitch can be used in single scraper operations or by a lead scraper in tandem operations when pulled by a wheeled agricultural tractor.

Hose Fittings

Three hose fitting options are available:

- 19 mm (3/4 in) poppet-style
- 13 mm (1/2 in) poppet-style
- Threaded flat-face connectors

Easy-To-Use Connectors

Threaded flat-face connectors, available exclusively on Cat Towed Scrapers, allow connection and disconnection under pressure and are less susceptible to wear caused by hose movement.



Customer Support

Unmatched support makes the difference.

Your Cat dealer is ready to assist you with your purchase decision

- Make comparisons of machines with estimates of component life, preventative maintenance and cost of production.
- Financing packages are flexible to meet your needs.
- Your Cat dealer can evaluate the cost to repair, rebuild and replace your machine, so you can make the right choice.
- For more information on Cat products, dealer services and industry solutions, visit us at www.cat.com.

TS220 Towed Scraper Specifications

Scraper Bowl

Capacity – Heaped	18 m ³	23.5 yd ³
Width of Cut, to Router Bits	3480 mm	11 ft 5 in
Rated Load	25 580 kg	56,400 lb
Capacity – Struck	13 m ³	17 yd ³
Depth of Cut – max	262 mm	10.3 in
Ground Clearance – max	508 mm	20 in
Cutting Edge – thickness	22 mm	0.87 in
Depth of Spread – max	737 mm	29 in
Apron Opening	1600 mm	63 in

Pull Unit Recommendations

Steel Track-Type Tractor, Single Scraper	D8
Steel Track-Type Tractor, Tandem Scrapers	D10
Rubber Tracked Ag Tractor, Single Scraper	298 - 373 kW (400 - 500 hp)
Rubber Tracked Ag Tractor, Tandem Scrapers	373 - 447 kW (500 - 600 hp)
Rubber Tired Ag Tractor, Single Scraper	298 - 373 kW (400 - 500 hp)
Rubber Tired Ag Tractor, Tandem Scrapers	373 - 447 kW (500 - 600 hp)
Hydraulic Services Required – Single Scraper	2
Hydraulic Services Required – Tandem Scraper	4

Hydraulics

Front Bowl Cylinder Bore	140 mm	5.5 in
Front Bowl Cylinder Stroke	508 mm	20 in
Apron Cylinder Bore	102 mm	4 in
Apron Cylinder Stroke	965 mm	38 in
Ejector Cylinder Bore	127 mm	5 in
Ejector Cylinder Stroke	1524 mm	60 in

Weights

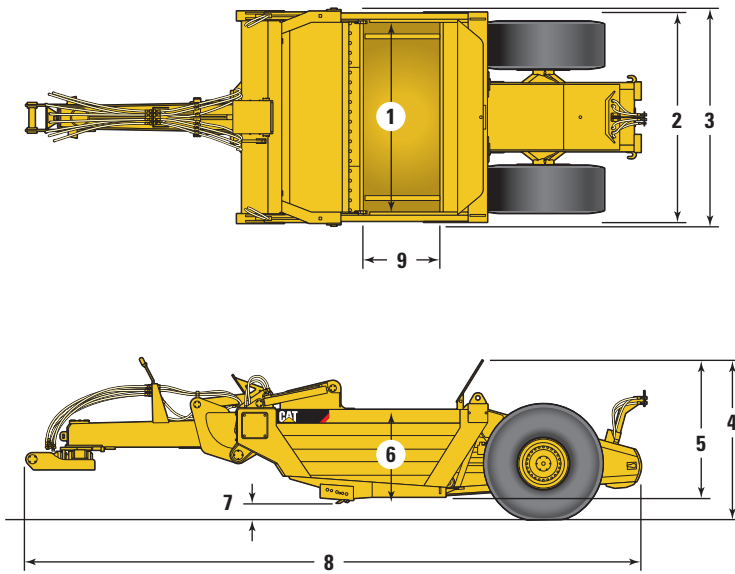
Empty Weight	13 145 kg	28,980 lb
Distribution, Empty – Tongue	28%	
Distribution, Empty – Axle	72%	
Distribution, Loaded – Tongue	29%	
Distribution, Loaded – Axle	71%	

Brakes and Tires

Brake Type	Dry-Disc
Calipers, Lead – qty	2 per side
Calipers, Trail – qty	2 per side
Tires – qty	2
Tire – Standard	875 65R29

Dimensions

All dimensions are approximate.



1	Width – Inside of bowl	3353 mm	132 in
2	Width – Outside rear tires	3378 mm	133 in
3	Width – Outside bowl	3683 mm	145 in
4	Height – Overall shipping	2464 mm	97 in
5	Height – Floor to top of ejector	2134 mm	84 in
6	Height – Sidewall	1219 mm	48 in
7	Height – Ground to cutting edge – Maximum	698 mm	27.5 in
8	Length – Maximum	9677 mm	381 in
9	Length – Floor	1448 mm	57 in

TS220 Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

BOWL

Capacity, heaped, 18 m³ (23.5 yd³)
Capacity, struck, 13 m³ (17 yd³)
Center Lift System
Cutting Edges, Reversible
Router Bits
UHMW Plastic Alignment Guides
Ejector Roller System
Apron Lock Mechanism

HITCH AND TONGUE

Hitch Pin, 89 mm (3.5 in) diameter
Hitch platform
Integrated stop blocks
Rear hitch countersunk in push block
for tandem operation (Lead)
Literature Storage Container

HYDRAULICS

Cat[®] XT[™]-3 ES Hose
Hydraulic connections for tandem
operation (Lead Scraper)
Manual Lowering Valve
ORFS Fittings
Poppet-style Fittings, 19 mm (0.75 in)

WHEELS AND TIRES

Braking System (hydraulic)
Caliper Disc (2 per wheel)
875 65R29 (2)
Five-Piece Rim

STRUCTURES

Push Block
Rear Tow Hooks

TS220 Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

HYDRAULICS

Quick-Connect Fittings
Poppet-style fittings, 13 mm (0.5 in)
Threaded, flat-face connectors

WHEELS AND TIRES

Spare Rim

TS220 Towed Scraper

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

© 2009 Caterpillar Inc.
All rights reserved

AEHQ6005 (08-2009)

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Caterpillar dealer for available options.

CAT, CATERPILLAR, SAFETY.CAT.COM, their respective logos, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

CATERPILLAR®