



# Material Transfer Vehicle

## SB-2500

### ENGINE

SB-2500e: Tier 4F; Cummins® QSL9 300 hp (224 kW) @ 2,000 rpm

SB-2500ex: Tier 3; Caterpillar® C9 300 hp (224 kW) @ 2,000 rpm\*

*\* ex machines for lesser regulated countries*

### OPERATING WEIGHT

77,240 lbs (35,035 kg)



### **Roadtec — An Astec Industries Company**

Roadtec, Inc. is proud to be a part of the family of companies that make up Astec Industries, Inc. Founded in 1972, Astec Industries, has grown to become America's leading manufacturer of equipment for asphalt road building, aggregate processing, oil, gas and water well drilling and wood processing. Roadtec continues to be an industry leader together with Astec Industries, by applying Astec's model of creative thinking bolstered by a corporate culture renowned for putting customer service first.





## THE ROADTEC DIFFERENCE: DELIVERING QUALITY AND INNOVATION WITH SUPERIOR CUSTOMER SERVICE

### **Dependability**

Roadtec has been manufacturing innovative, heavy-highway equipment since 1981. We continue to grow and add new products, yet our personal connection to our customers and our ability to respond immediately to your needs is even stronger.

### **Customer Service**

Our customers benefit from our strong focus on customer support after the sale. In-the-field service technicians live in the regions where they work and respond quickly. 24/7 parts support will get you the right parts fast, and at a fair price. Our product specialists will train your people on any newly purchased machine, and we also offer industry-leading training at our state-of-the-art training facility or in the field.

### **Count on Roadtec Equipment**

We don't build roads. We make the equipment so you can cost-effectively build and maintain the world's roads. With the Roadtec heavy-duty design, we are able to keep your machine working longer while lowering maintenance and operating costs. We are also able to make your operators more comfortable and confident with our user-friendly design and our customization for special projects.

# THE ROADTEC SHUTTLE BUGGY® MTV GIVES YOU SUPERIOR MAT QUALITY AND EFFICIENCY ON THE JOBSITE



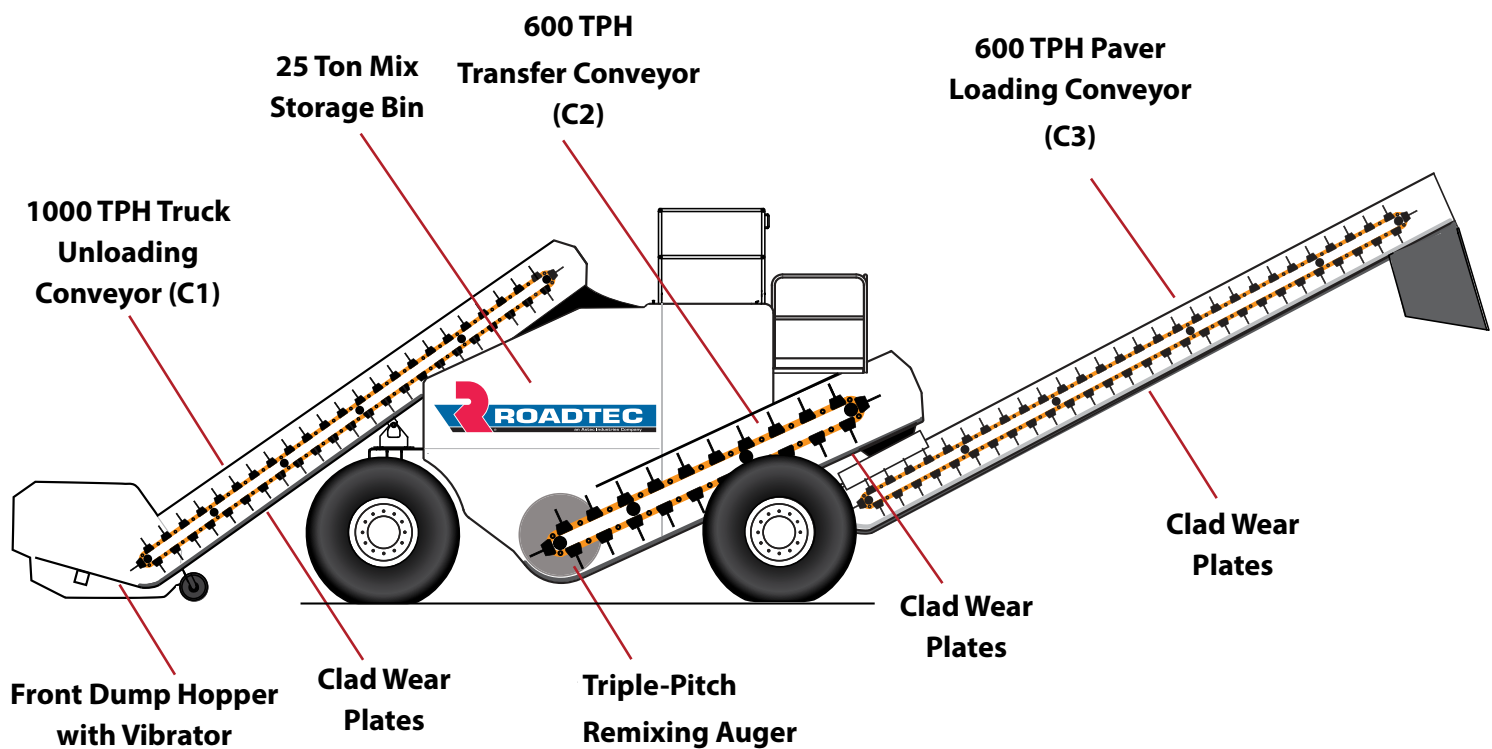
## Material Transfer Vehicles (MTVs) : A Must-Have

In 1935 Harry Barber launched his invention, the very first asphalt paver. As you might imagine road building was forever changed for the better. However, road paving technology would not significantly change again until 1989 when Roadtec introduced the very first material transfer vehicle, the Roadtec Shuttle Buggy® MTV. Roadtec material transfer technology led the way to dramatically improved pavement life and quality, making Roadtec MTV's an essential tool for today's road builders.

## The Shuttle Buggy® MTV

The Shuttle Buggy® material transfer vehicle (MTV) is designed to "shuttle" between the asphalt haul truck and paver. Thermal and/or material segregation problems are eliminated thanks to the machine's remixing action. The Roadtec Shuttle Buggy® MTV also allows continuous paving, which leads to a much smoother surface. The machine has a storage capacity of 25 tons (22.7 metric tons) in the main hopper, allowing the contractor to smooth out his truck cycles and reduce haul costs. Truck unloading capacity is rated at 1,000 tons per hour (907 metric tons/hour) and paver loading capacity at 600 tons per hour (544 metric tons/hour).





## Roadtec MTV Experience

MTV's lead a tough life. They're subject to getting bumped by trucks, they get 16 plus tons of hot mix dumped into them in less than a minute, they keep the abrasive material moving and mixing, and they feed the paver at rates up to 600 tons per hour. Materials and workmanship must stand up to those demands. With Roadtec, you'll get a heavy-duty design you can rely on, coupled with the functionality you need.

## Road Builders Rely on MTVs

The Shuttle Buggy® MTV is the only machine that combines the benefits of a remixing material transfer with unmatched reliability. That's why road builders worldwide recognize the value of using Roadtec's Shuttle Buggy® MTV to construct high quality asphalt pavements.

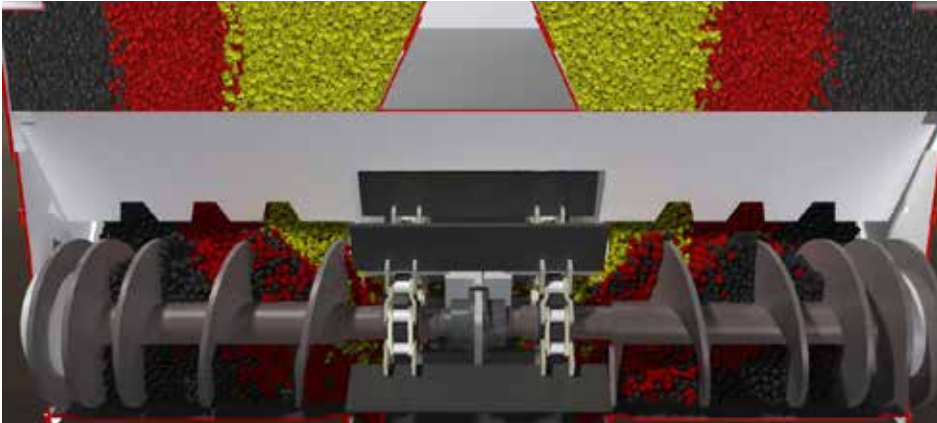
## Important Benefits

Truck handling, temperature and material segregation all contribute to poor pavement quality. The Roadtec Shuttle Buggy® MTV provides a solution for all of these issues by remixing material onsite while allowing the paver to operate at a constant speed without stopping.

- Temperature Segregation during transport cannot be avoided. Without remixing, the colder material will screed out together and form a potential trouble spot.
- The Shuttle Buggy® MTV allows continuous paving, which leads to a much smoother surface.
- The machine has a storage capacity of 25 tons (22.7 metric tons), allowing the contractor to use fewer trucks by unloading them quickly so they can return to the plant.

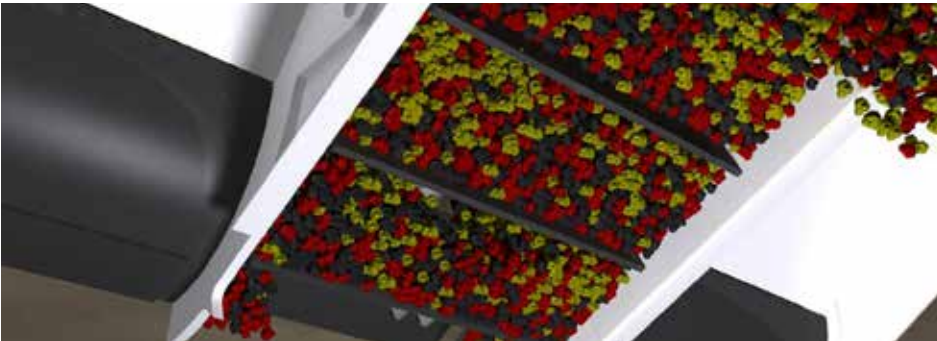


# ACHIEVE UNIFORM REMIXING AND MEET YOUR TOUGHEST JOB SPECIFICATIONS WITH ROADTEC REMIXING TECHNOLOGY



## Shuttle Buggy® MTV Triple Pitch Auger Design

The triple-pitch auger flighting design used in Roadtec Shuttle Buggy® MTV's provides uniform remixing across the width of the entire hopper. The triple-pitch auger located in the bottom of the hopper remixes the contents of the storage hopper. The mixing action equalizes temperatures and evenly mixes large and small particles. A slat conveyor runs from the bottom of the hopper and feeds the discharge conveyor.



## Why Segregation is a Problem

Segregation in asphalt pavements will compromise their surface and structure. Cracking, raveling, stripping, and rutting are all pavement failures linked to segregation. Temperature and material segregation have also been known to hinder the compaction of the asphalt mat, and non-uniform density will result in pavement failure.

## Control Over Segregation

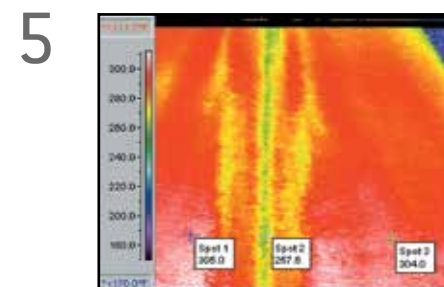
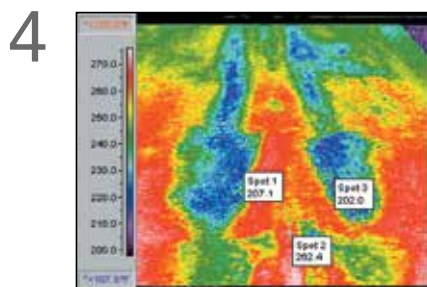
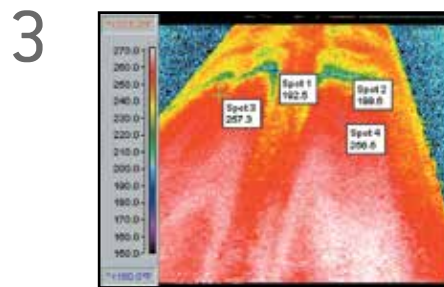
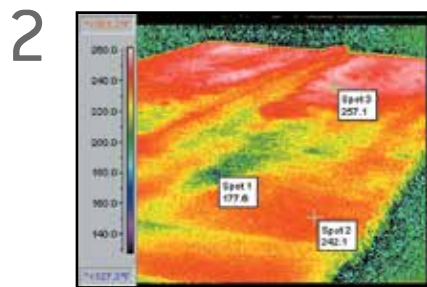
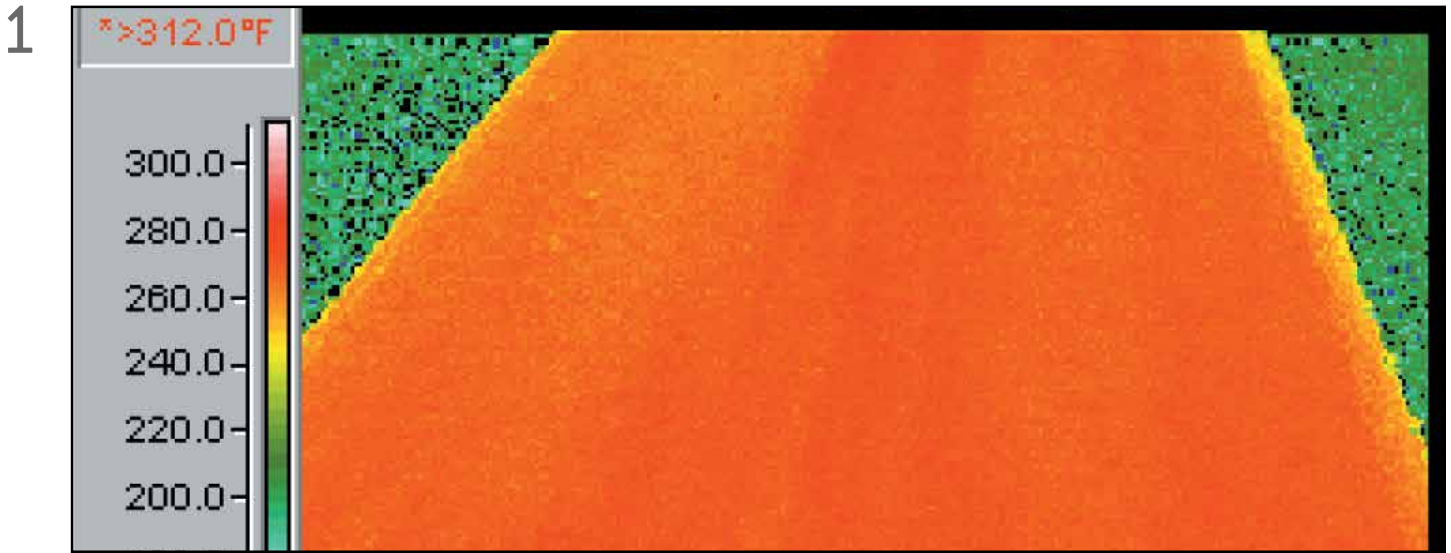
It is extremely difficult to eliminate all the potential causes of segregation in asphalt mixes. However, the presence of thermal and/or material segregation can be corrected before the new surface is paved. With Roadtec's material transfer technology, you can depend on thoroughly remixed material that is evenly distributed as it's paved.

## Single-Pitch Augers Don't Remix

Single-pitch flighting pulls material primarily from the sides of the bin. The spaces between flights fill up and the auger just tunnels through. The contents of the bin are not remixed, and therefore segregation remains a problem. The Roadtec Shuttle Buggy® material transfer vehicles use a triple-pitch auger design. This Roadtec innovation is key for achieving the best mixing results, and will help you meet the tightest temperature segregation specifications.

## Proof in Thermal Imaging: Achieve superior results

Infrared images show the quality of remixing that takes place with different devices. Time after time Roadtec machines have consistently performed better than others. Roadtec mixing technology is better engineered and achieves superior results. Infrared images have been taken behind numerous machines and are shown below. Color variations in the infrared photos show temperature variations. Uniform density cannot be achieved when mix temperatures vary. Cold spots become potholes.



1. Roadtec Shuttle Buggy MTV - Virtually no temperature difference.
2. Windrow Pickup Machine
3. Windrow Pickup Machine with Truck Dumping Head
4. Belt Conveyor Type Material Transfer Vehicle
5. Belt Conveyor Type Material Transfer Vehicle with add-on pugmill

# DRIVE PROFITS BY ELIMINATING TRUCK DELAYS AND KEEPING YOUR PAVER MOVING WITH ON-SITE MIX STORAGE



## Your Goal is Continuous Paving

Keeping your paver moving increases efficiency and the quality of the mat. Whenever the paver stops, the screed has a chance to settle. The head of mix cools, creating a bump in the mat when you start moving again. And whenever a truck backs up to unload into an idle paver, there can be another bump. All of these issues affect smoothness readings.

## Cut Costs with a Roadtec MTV

With a Shuttle Buggy® MTV you can drive profits on every job because you'll need fewer trucks. The Shuttle Buggy® MTV provides on-site mix storage and can eliminate the delays that happen at the paver when trucks are unloading.

## Keep Trucks and Paver Moving

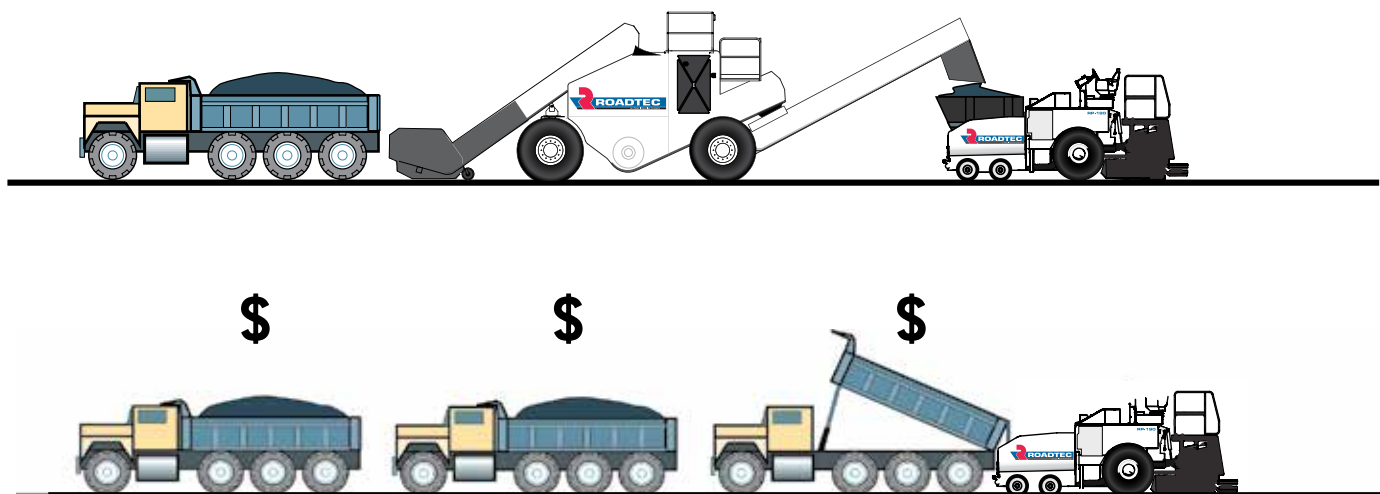
To have three or four trucks waiting to unload at a job site with no Shuttle Buggy® MTV is fairly common, but it's unnecessary and expensive.

A wait time of more than 15 minutes per truck at the job site is common for most jobs where no Shuttle Buggy® MTV is used. Even if you calculate a very conservative cost of one dollar per minute of truck time, that's \$15 extra you pay for each truck every time it's delayed for 15 minutes at the job site.

With a Shuttle Buggy® MTV, trucks can be unloaded much quicker, typically in a fourth the time. This can result either in the need for fewer trucks or increased production.



If you can create a buffer of material at the job site by using a Shuttle Buggy® MTV, you won't have to use trucks as storage bins to keep the paver supplied with mix. Don't let money sit on the road. Use fewer trucks.



## How to Maximize Storage Capacity

The Roadtec Shuttle Buggy® MTV has a 25-ton (22.7 metric tons) storage bin. Add an insert to the paver and you get another 10-15 tons (9-14 metric tons) of capacity, sufficient for continuous paving. Trucks can be stopped 100 or 200 feet (30 or 60 meters) away from the paver and dump safely into the Shuttle Buggy® MTV without moving. Being able to unload without moving also makes it possible to use bigger trailers, thus even further reducing the number of trucks needed. However, even with regular dump trucks you can cut your trucking cost when you use a Shuttle Buggy® MTV.

Example assumes: 10-hour workday. Mix usage rate 2,400 tons per day. 20-ton truck capacity. Truck cost \$60/hr = \$1.00 per minute. Distance to hot mix plant 10 miles.

Use the job calculator on our web site to run the numbers on your projects. Go to [roadtec.com](http://roadtec.com) and click on "Training/Tools."

## TRUCK CYCLE CALCULATION

	Without Shuttle Buggy	With Shuttle Buggy
Delay at Plant	0 min.	0 min.
Loading time	1 min.	1 min.
Ticket, Tarp & Sampling	5 min.	5 min.
Haul to Job	20 min.	20 min.
Delay at Job	15 min.	0 min.
Truck Exchange	2 min.	0 min.
Dump	3 min.	2 min.
Return to Plant	20 min.	20 min.
Total Minutes per Truck Cycle	66 min.	48 min.
<b>Cost per Truck Cycle</b>	<b>\$66.00</b>	<b>\$48.00</b>
Cost per Ton	\$3.30	\$2.40
Cycles per Truck	9	12
Cycles Required	120	120
Number of Trucks Required	14	10
Total Cost	\$8,400	\$6,000





# HEAVY-DUTY DESIGN YOU CAN RELY ON, COUPLED WITH THE FUNCTIONALITY YOU NEED FOR MAXIMUM PERFORMANCE

## Dump Hopper Performance Features

Sized for mass discharge from standard haul trucks, the front hopper allows trucks to unload fast. A steep slope and vibrating bottom plate in the hopper prevents material build-up. Heavy-duty, swiveling support casters under the hopper assure smooth movement. Ground operators can adjust the hopper position from either of two separate control boxes. They can also adjust the position of the push roller for different truck designs.

## Moving Parts Made for Durability

All conveyors are outfitted with durable roller bushing chain. Flights are made of abrasion-resistant steel, and we install thick wear plate linings on the conveyor floors. The floor of the paver-loading conveyor is insulated against heat loss. Rails installed at the bottom of this conveyor help protect it from any damage that could be caused by impact with the paver.

## Engine Meets Latest Emission Specs

A 300 hp Tier 4f diesel engine powers the Shuttle Buggy® MTV. The engine delivers plenty of power while incorporating the latest technology for low cost of operation and maximum performance.

## Drive Features

The Shuttle Buggy® MTV rides on four 21" wide x 25" high flotation tires. The steering wheel controls the front wheels of the all-wheel drive machines. The hydrostatic drive mechanism offers two speed ranges (working and travel) with continuously variable speed.



## Security of a Wear Guarantee

All chains, sprockets, liners, bearings, as well as the remixing auger are warrantied up to 250,000 tons (227,000 mt) or 1,500 hours of operation.

# LARGER, THICKER AND MORE DURABLE WEAR COMPONENTS

## Improved Wear Components

Road construction is not a delicate business. All machines involved have to perform daily in difficult environments. Roadtec has made an effort to reduce operating costs by incorporating stronger, wear resistant components.



### Floor Liners

Bolt-on chromium carbide floor plates are used on all three conveyors. The abrasion resistance of chromium carbide drastically increases the wear life of the floor plates and eliminates the need for wear liners.

### Augers

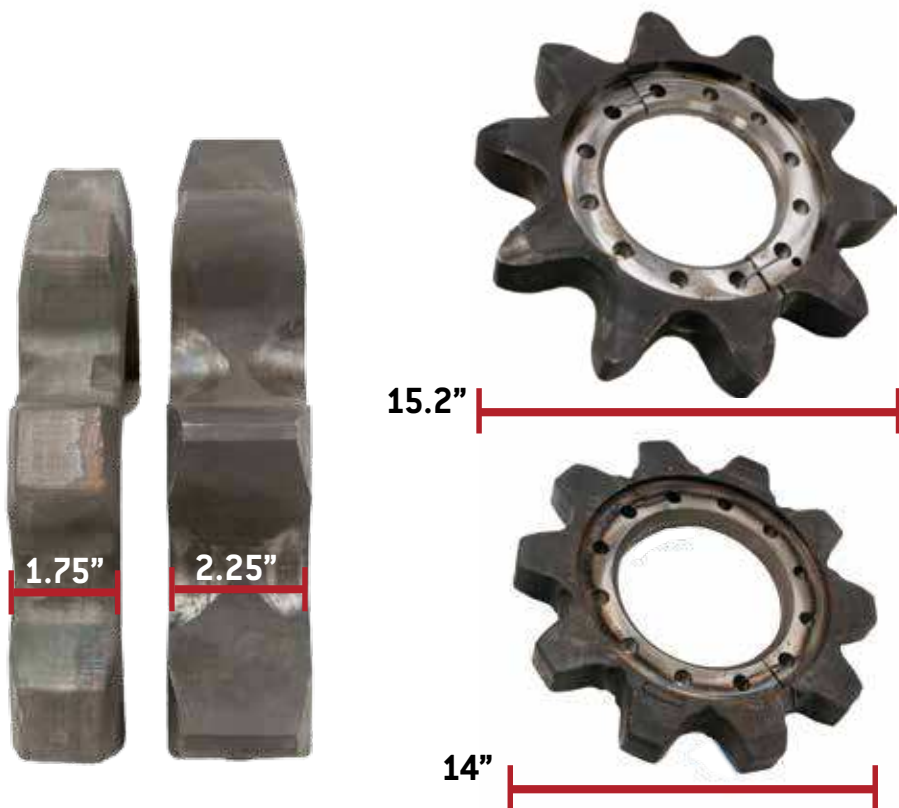
The SB-2500 is now equipped with 29" diameter cast augers. The larger triple flight augers offer 38% more wear surface without compromising the machine's remixing ability.

### Chains

Complete offset chains are used throughout the machine providing a substantial increase in tensile strength compared to straight linked chains or partially offset chains used in other models. The upgraded chains also have larger flights to transfer more material and keep the chain out of the mix.

### Sprockets

Larger and thicker sprockets that provide 38% more surface area are used in the SB-2500 to match the wear life upgrades of the other conveyor components.







## SIMPLIFY DIFFICULT PAVING JOBS AND INCREASE PRODUCTIVITY

### Intersection Pay-off

Intersection work is typically slow, and getting trucks to the paver is often difficult. The Shuttle Buggy® is able to improve the maneuverability of your pavers on intersection work by freeing them from trucks.

### Pivoting Discharge Conveyors as Standard

The discharge conveyor swings 50° right or left, allowing you to do offset paving and to save significant time and dollars when adding lanes, or working with string lines or barriers. This feature also lets you keep trucks off the milled edge and off the tack coat. Specialty projects, such as high-banked racetracks or airports requiring string lines on both sides, are paved much easier with Roadtec's standard pivoting conveyors.

### Make Tricky Paving Projects Easy

Parking areas that have a lot of islands or peninsulas are difficult to pave. Overhead power lines, tunnels, overpasses and other obstructions can present a different challenge. It's often impossible to form a good paving train and get the material in front of the paver. When you have a Shuttle Buggy® MTV the truck can unload at a convenient spot and the Shuttle Buggy® can bring the mix to the paver.

### Speed Up Handwork

At times, there are spots that a paver can't reach, no matter what, and handwork is required. Roadtec MTV's are able to carefully dispense material to the workers exactly where they need it because the discharge conveyor can be lowered and pivoted from side to side.

# INNOVATIVE MAINTENANCE AND DESIGN FEATURES MAKE TASKS EASIER FOR YOUR CREW



## Operator Station

Dual operator stations allow the operator to occupy the left or right side. The operator platform slides 16" to the left and right of center for excellent visibility down the sides of the machine. The FXS® fume extraction system comes standard to increase operator comfort.

## Better Maintenance Access

Maintenance access is a major goal in all our designs. Engine access is gained by hydraulically lifting the one-piece hood. There are hinged access doors that make the oil cooler, radiator and pumps easy to reach. Hydraulically operated clean-out doors are found at each conveyor. Your mechanic will really appreciate the remote lube points for all the conveyors.

## Safety & Convenience

The Shuttle Buggy® is equipped with a telescopic flashing amber beacon and a mirror package. The beacon calls attention to the machine from a long way off, and the operator uses mirrors to see both sides of the machine. Safety brackets at the front of the machine keep personnel from entering the area between the tires and the dump hopper. Safety bars at the operator station prevent falls. Emergency shut-off switches are found at ground level and at the main operator stations.

The sunshade umbrella supplied increases operator comfort. A wash-down system is provided and includes a 50-foot retractable hose. Longer hoses can be supplied.



## Improved Control Panels

The SB-2500e features ergonomic control panels that increase operator safety and comfort. The controls are laid out to be operator friendly, and all panels are now fully backlit for safe control at night.



Ground level control boxes also feature improved layout and are backlit as well.

## Full width cleanout doors

Clean out and maintenance accessibility is made quick and convenient with a full-length hydraulic door on the C1 conveyor. Full-length bomb bay style cleanout doors are also located on the storage hopper. These cleanout doors provide incredible access to the remixing augers and C2 conveyor and drastically improve end of the day cleanup time. Another hydraulic access door is located on the C3 conveyor just below the C2 conveyor.



Easy access to the C1 & C2 improves cleanup time at the end of the day.





## OPTIONS

### Auxiliary Power

- 4 kW 60 Hz Continuous Duty Hydraulic Generator
- 4 kW 50 Hz Continuous Duty Hydraulic Generator (Europe)
- 4 kW 60 Hz Continuous Duty Hydraulic Generator (Australia)
- 6.2 kW 60 Hz Continuous Duty Hydraulic Generator

### Additional Lighting

- Light Package – Five 24v HID Lights Mounted At Machine Corners
- Truck Dump Signal Light Package – LED Signal Light (Dump, Stop, or Lower)

- Dump Hopper Landing Lights – Lights located on both sides of hopper opening for trucks to use as a guide

### Mass Flow Hopper Inserts

- Low Profile Hopper Insert for RP 170 Pavers
- Low Profile Hopper Insert for RP 175 Pavers
- Low Profile Hopper Insert for RP 190 Pavers
- Low Profile Hopper Insert for RP 195 Pavers
- Low Profile Universal Hopper Insert
- Mass Flow Hopper Side Wall Extensions

## Miscellaneous

- Automated Lubrication System
- Truck Hitch Instead of Push Rollers
- Bindicators for both high and low level
- Release Agent Spray-Down System – Includes 55 Gallon Tank, Pump, Retractable Hose Reel with 50' Hose Length (Replaces Standard Wash-Down)
- Automatic release agent system nozzles
- Tire Spray System
- Windrow Pick Up Head Instead of Dump Hopper\*
- Windrow Pick Up Head Assembly as Spare\*

*\* Windrow Head Includes Oscillating C-1 Pivot, hinged, hydraulically controlled right-hand and left-hand caster wheels; spring-activated end gates; and material plow.*

## Buggy-Paver Autotracking

- Sonic sensors allow the buggy and paver to move simultaneously. Option includes a remote for the paver operator to control the position of the C3 conveyor on the shuttle buggy.

## Camera System

- (2) color, night-vision-capable cameras, one on the front and one on the back of the machine. Includes color monitor in waterproof case.

# WARRANTY

## EDGE Extended Equipment Warranty

The EDGE Extended Equipment Warranty is an industry leading warranty that demonstrates our confidence in the quality and reliability of everything we make. This warranty goes above and beyond power train or extended engine warranties currently offered in the industry by covering more components and repairs as well as covering repairs done by the customer for a term of 3 years or 3000 hours on the machine and 5 years or 6000 hours on the engine. By covering most components other than wear items at full replacement cost and for a longer time period, the EDGE warranty gives owners an EDGE over their competition by lowering their operating costs.





# SPECIFICATIONS

## ENGINE

- SB-2500e: Tier 4F; Cummins® QSL9 300 hp (224 kW) @ 2,000 rpm
- SB-2500ex: Tier 3; Caterpillar® C9 300 hp (224 kW) @ 2,000 rpm\*

\* ex machines for lesser regulated countries

## WEIGHT

- 77,240 lbs (35,035 kg)

## CONSTRUCTION

- Heavy-duty conveyor flights and chain. Replaceable wear plate in all high wear areas. Stability without unnecessary weight.

## COOLING SYSTEM

- Quiet operation, dual, variable speed hydraulically driven fans

## ELECTRICAL SYSTEM

- Two 4D batteries & 95 amp alternator
- 24v system with master disconnect switches.
- Electric-over-hydraulic solenoids with manual override.

## PROPEL SYSTEM

- Hydrostatic drive
- Continuously variable speed control with two speed ranges.
- Front-wheel steer

## SPEED

- Working: 0-3.0 mph (0-4.8 kph)
- Travel: 0-9 mph (0-14.5 kph)

## BRAKE SYSTEM

- Hydrodynamic disc caliper brakes, and parking brake

## TIRES

- 21" (533 mm) wide x 25" (635 mm) interior diameter high-flotation tires.

## OPERATOR STATIONS

- Two operator stations (left & right side) with deluxe adjustable seats.
- Operator stations can slide 16" (400 mm) out past edge of machine for visibility.
- Center control console pivots to right or left

## GROUND CONTROLS

- (2) front dump hopper control boxes

## FUME EXTRACTION SYSTEM

- Clearview FXS® system with dual fans to draw fumes away from operator area.

## TRUCK DUMP HOPPER

- Front hopper has swivel support casters. Vibrating floor plate. 9'2" (2,794 mm) wide truck opening (adjustable width option available).
- Hydraulic, adjustable push rollers.
- Hydraulic front hopper baffle adjustable for optimal material flow.

## DUMP HOPPER TRANSVERSE AUGER

- 29" (737 mm) o.d. cast, ni-hard, segmented auger.

## DUMP HOPPER UNLOADING CONVEYOR (C1)

- Drag conveyor with 1,000 tph (907 mtph) capacity.
- Dual roller bushing offset link chain
- Conveyor floors lined with replaceable chrome-carbide clad wear plates.

## SURGE BIN

- 25 tons (22.7 mt) storage capacity.

## REMIXING AUGER IN SURGE BIN

- 29" (737 mm) o.d. cast, ni-hard, variable pitch augers

## SURGE BIN UNLOADING CONVEYOR (C2)

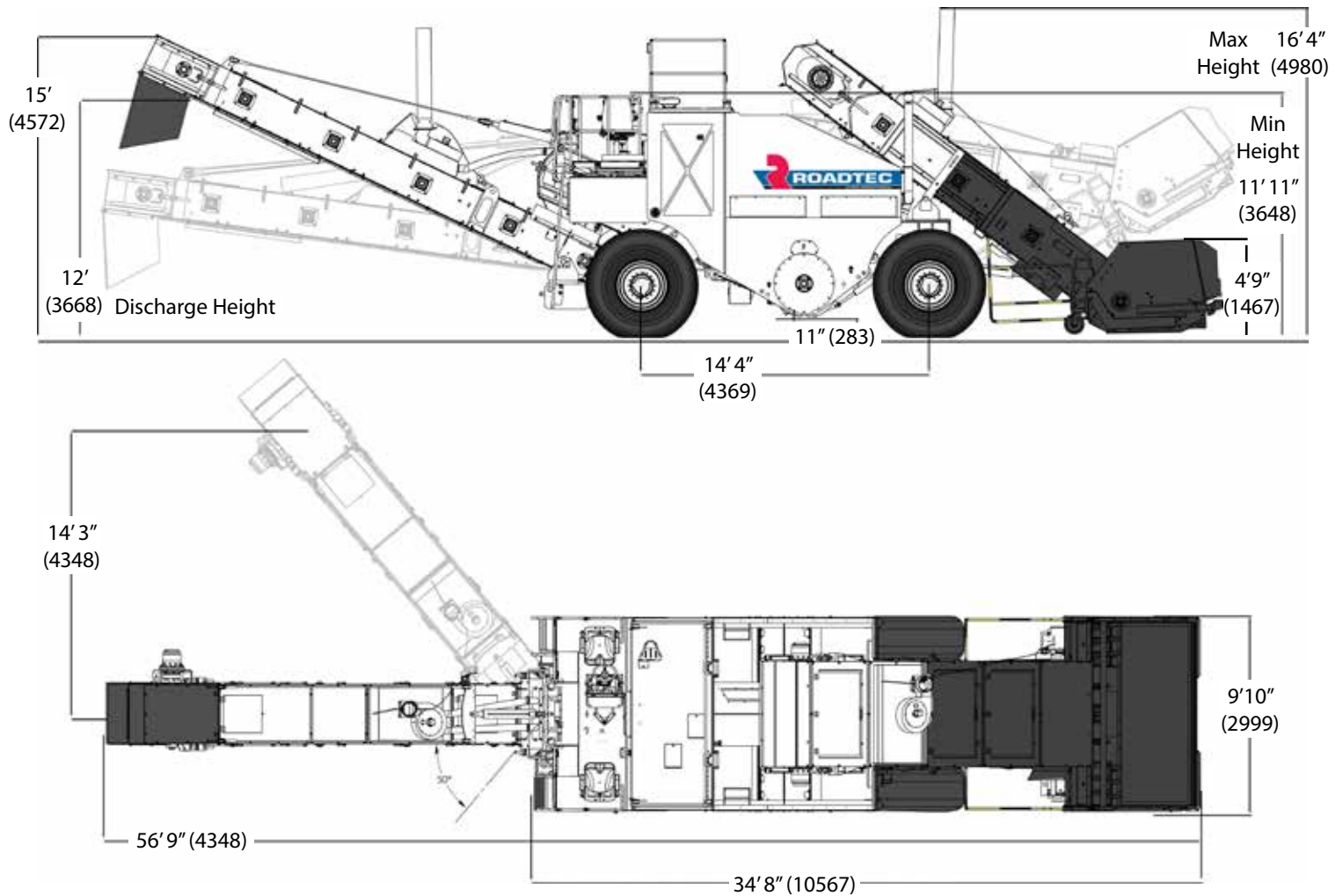
- Drag conveyor with 600 tph (544 mtph) capacity.
- Dual roller bushing offset link chain
- Conveyor floors lined with replaceable chrome-carbide clad wear plates.

## PAVER LOADING CONVEYOR (C3)

- Drag conveyor with 600 tph (544 mtph) capacity.
- Dual roller bushing offset link chain
- Conveyor floors made of chromium carbide clad plate.
- Insulated conveyor floor.
- Controls interlock with surge bin unloading conveyor.
- Conveyor can be positioned up to 50° to either side of center.
- Conveyor guard rails.

## SERVICE CAPACITIES

- Fuel Tank ..... 150 gal (568 l)
- Hydraulic Fluid Tank..... 96 gal (363 l)



Dimensions in brackets are mm.

Specifications are subject to change without notice.



ROADTEC.COM

**ROADTEC** an Astec Industries Company

800 MANUFACTURERS RD • CHATTANOOGA, TN 37405 USA • 800.272.7100 • FAX 423.267.7104 • [roadtec.com](http://roadtec.com)

2/20/15



© 2014 Roadtec, Inc. All Rights Reserved