

RM-350B

Reclaimer/Mixer



Machine shown may have optional equipment.

Cat® 3406C DITA Diesel Engine

Gross power	373 kW	500 Hp
Rotor Width	2438 mm	96"
Rotor Depth (maximum)	508 mm	20"

Cat® 3406C Diesel Engine

Dependable, field-proven, efficient Cat power.

Caterpillar four-stroke cycle engines blend power and efficiency.

Direct-injection fuel system with individual adjustment-free injection pumps and valves.

Turbocharger reacts to load demands while delivering full rated power up to 1525 m (5000') elevation.

Three-ring aluminum-alloy pistons cam-ground, tapered and cooled by oil spray.

Steel-backed, copper bonded aluminum bearings.

High carbon steel alloy crankshaft with hardened journals.

Pressure lubrication with full-flow filtered oil and heat exchanger oil cooler.

Fan Guard helps prevent debris from entering radiator and provides protection during servicing.



Operator's Station

Designed for comfort, efficiency and operator productivity.

Convenient controls located for easy one-handed control while seated.

Comfortable padded seat is three-way adjustable with flip-up arm rests. Positioned at an angle to facilitate operation in forward or reverse.

Speed and direction lever with center detent for forward/reverse operation and variable machine speed.

Adjustable steering wheel tilts and telescopes for a comfortable operating position.

Low effort steering with four steering modes for maneuvering in tight quarters: crab, coordinated, front-only and rear-only position.

Uncluttered platform and flat deck with clear visibility to both sides of the machine. Sound absorbing floor mats.



- 1 Speed and Direction Lever
- 2 Steering Mode Selector

Operational Controls

Easy-to-use controls minimize operator fatigue.

Clear instrumentation includes gauges for system pressures, temperatures, fuel level and engine rpm.

Four-position switch for propel speed selection—shift up on-the-go.

Clear front console displays for engine speed, gear selection, ground speed and machine operation.

Load control selection switch to control speed manually or automatically.

Control switches for rotor speed, propel speed, hydraulic functions and throttle.



Electronic Control Module (ECM)

Constant monitoring for peak performance and machine trouble shooting.

Automatic load control adjusts propel speed so that engine speed is maintained at no less than 1800 rpm. Machine always works at peak efficiency for maximum output.

Steering Control provides four steering modes: rear wheel steer, front wheel steer, crab steer and coordinated steer. The coordinated steering mode reduces turning radius to 5,48 m (18'). Rear tires automatically realign to center position.

Automatic depth control provides consistent quality and performance.

Diagnostic mode provides three warning levels and fault indicators to alert operator to potential problems.

Color coded and numbered wiring provides easy reference and trouble shooting.



Rotor Drive

Maximum production with high reliability.

Heavy duty gear reducers with four planetary carriers provide excellent rotor drive reliability.

Rotor engagement locked out unless engine speed is between 1000 - 1200 rpm. Second and third rotor speeds can be attained only by shifting up from first after the rotor is engaged.

Rugged drive chains provide efficient, continuous power to the rotor. Single strand heavy-duty chain resists breakage.

A Cat powershift transmission drives the rotor and is sized to handle tough cutting and deep mixing.



Rotor Chamber

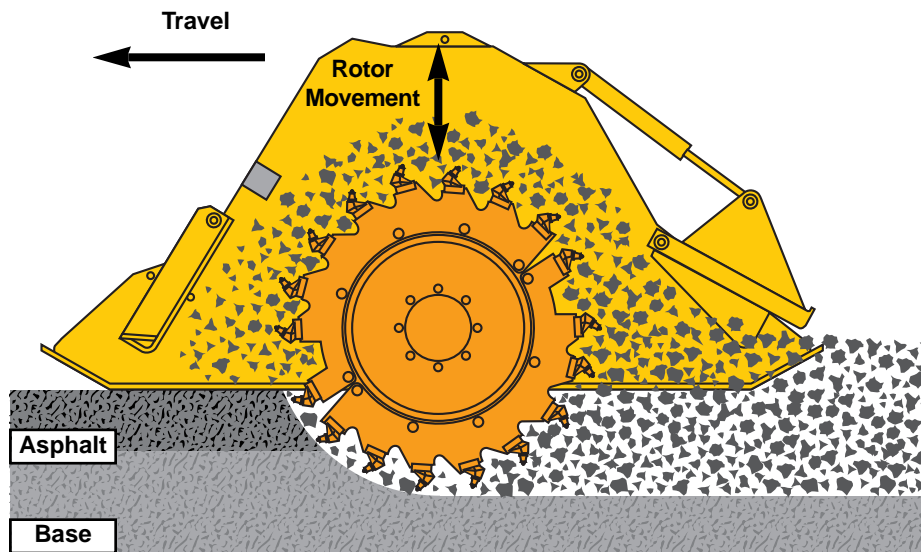
Large capacity adds to quality and productivity.

Mixing chamber allows rotor to move down independently so that the capacity of the chamber actually increases in deeper cuts to allow better material mixing.

Breaker bars help achieve uniform sizing.

Bi-directional mixing capability increases machine efficiency.

Optional hydraulically operated front door allows more precise sizing control when operating in reverse.



Propel System

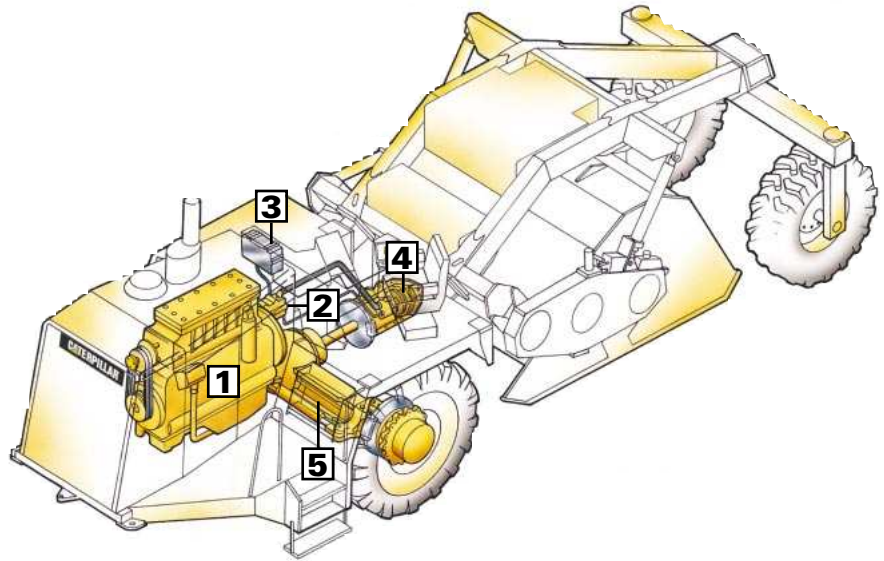
Designed to match application demands.

Heavy-duty propel pump receives signals from the load sensing system to regulate swashplate angle.

Heavy-duty drive shaft transfers power to the wheel drive axle.

Three brake systems – hydrostatic propel lever, brake pedal and parking brake. Propel pump automatically destroyed when brakes are applied.

Four speed ranges allow the machine to operate effectively in a wide range of applications.



- | | |
|-----------------------------|--|
| 1 Engine | 4 Two-speed motor,
two-speed transmission |
| 2 Propel pump | 5 Drive axle |
| 3 Electronic Control Module | |

Serviceability

Less time on maintenance means more time on the job.

Hydraulic rotor hood tilt rotates hood forward for convenient access to rotor for tool maintenance.

Hinged service doors open wide on sides of engine and on top deck for access to power train and rotor drive components.

Self-lubricating rotor drive chains in sealed chain cases partially filled with oil.

Three warning levels alert operator to conditions on the machine that require attention. Encourages repair before major failure.

Level One – flashing indicator light or gauge in red zone.

Level Two – level one plus flashing master warning light.

Level Three – level two plus warning horn.

Self-diagnostics and fault records simplify troubleshooting and reduce repair time. Identifies intermittent problems.



Liquid Additive System Option

High capacity, low maintenance pump for asphalt emulsions, water and water-based solutions or slurries.

Jacket heated by engine coolant to soften residual asphalt emulsion at the start of each shift.

Flow meter senses a wide range of flow rates and viscosities and transmits information to the controller.

Hydraulic drive motor is reversible to aid in system clean-out.

System controller receives input from machine speed sensor, flow meter and rate set by operator.

Adjustable spray bar uses nozzles that are hand removable for easy cleaning.



- 1 Supply pump
- 2 Drive motor
- 3 Flow meter

Water Spray System Option

Self-priming, centrifugal supply pump delivers water or low viscosity water-based solutions.

Wide flow range from 190 l/min (50 gpm) to 1137 l/min (300 gpm).

Multi-functional flow rate analyzer provides system control and information at the operator's station.

Adjustable spray bar uses nozzles that are hand removable for easy cleaning.

Turbine-type flow meter senses turbine rpm and relays data to flow rate analyzer.



Rear Wheel Power Option

On-demand rear wheel power uses a portion of the hydraulic flow from the drive propel pump.

Freewheel valve directs hydraulic flow to the rear wheels or to the tank.

Increased tractive effort helps power the machine through soft, wet soils.

Traction increases in all four propel speed ranges:

- +24% in 1st gear
- +36% in 2nd gear
- +41% in 3rd gear
- +58% in 4th gear



Hydraulic Front Door Option

Hydraulically operated front door allows the operator to control the opening of the front door from the operator's station.

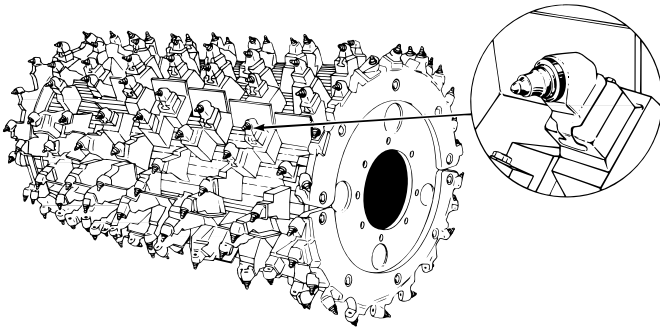
Improved versatility in soil stabilization because the machine is able to work in both directions.

Forward or reverse operation increases machine versatility in soil stabilization and asphalt reclamation.



Rotor Options

Quality results from three rotor choices.



Reclamation Rotor (2438 mm/96")

Designed primarily to pulverize asphalt layers.

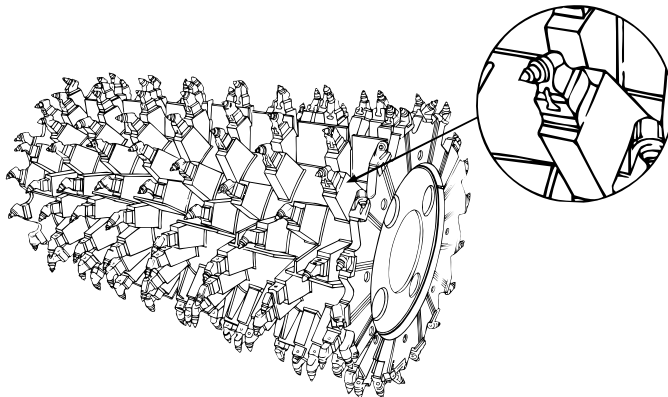
188 carbide-tipped tools are mounted in drive-in, knock-out tool holders and arranged in a chevron pattern for maximum breakout force.

Breakaway design tool holders allow for fast replacement without welding.

Kicker paddles strategically placed to help carry pulverized material over rotor.

Replaceable end rings protect rotor mandrel from wear. Rings are hard-faced for extended service.

Maximum depth is 381 mm (15").



Combination Rotor (2438 mm/96")

Can be used for either reclamation or stabilization by simply changing rotor tools.

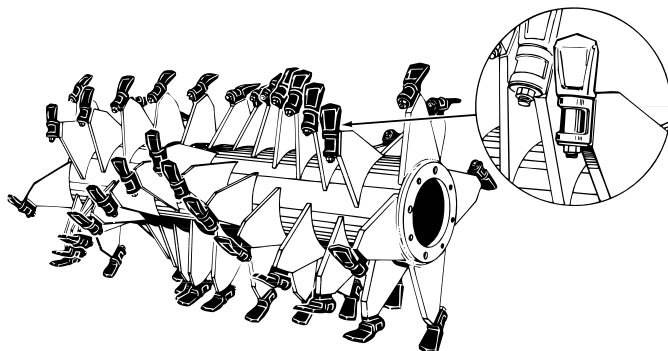
108 tools are mounted in drive-in, knock-out tool holders.

Holders accept either point-attack reclamation tools or spade-type 38 mm (1.5 ") wide stabilization tools.

Breakaway design tool holders allow for fast replacement without welding.

Replaceable, hard-faced end rings protect rotor mandrel from wear.

Maximum depth is 457 mm (18").



Quick Change Stabilization Rotor (2311 mm/91")

Designed for soil stabilization.

Extended service life and reduced maintenance time.

58 spade-type tools secured by a single nut and bolt for reduced maintenance time.

Carbide faced tools standard for long service life.

Universal application—blends additives with cohesive, semi-cohesive or granular materials.

Maximum depth is 508 mm (20").

Optional Equipment

Optional Front Tires 67 x 34.00-25. High flotation, high-grip tires. Increase overall machine width by 305 mm (12").

Roll Over Protective Structure (ROPS). Meets SAE recommended practice J1040APR88 and ISO 3471-1986. Includes overhead canopy with Falling Objects Protection Structure (FOPS) rating. Can be field installed.

Deluxe Cab includes:

- Access door that latches open for ventilation, and locks by ignition key.
- Tinted windows with all-around safety glass construction. Three latch open for ventilation.
- Electric wiper/washer on all doors and windows.
- Climate controlled with heater, defroster and air conditioner.
- Cloth seat.

Roading Light Package. Includes headlights, turn signals, clearance lights and reflectors.

Working Light Package. Five adjustable flood lights, two positioned in front and

three in rear. For use under working conditions, not highway transport purposes. Includes brake lights.

Mirror Package. Includes three rear view mirrors—one in cab and one on each side of engine compartment at front; one mounted below left front rear view mirror that provides visibility across front of the machine; one on right front fender that provides view along right side of machine to the front; and one on the rear bolster that provides view of the rear of the rotor chamber.

EC Certification Arrangement. Includes deluxe cab, working light package, mirror package, sound suppression package, mixing chamber guard group, and blower fan with vented hood.

When equipped with EC Certification Arrangement, operating weight is 25 070 kg (55,289 lb)

Sound Suppression Package. Includes louvered grill in front of radiator and sound suppression material inside the radiator guard.

Warning Beacon Light. Increases noticeability while working or maneuvering around the job site.

Blower Fan. Includes blower fan and vented hood.

Friction Torque Limiter. Slips when spike loading occurs at rotor so shocks aren't sent through the drivetrain.

Liquid Additive System. See page 6.

Water Spray System. See page 6.

Rear Wheel Power. See page 7.

Hydraulic Front Door. See page 7.

Sound and Vibration Information

Sound Level for Open ROPS

The operator sound pressure level 92 dB measurements were obtained on a static machine following the procedures and conditions as described in ISO 6393 and ISO 6394 or 86/662/EEC.

Sound Level for Enclosed Cab

The operator sound pressure level 87 dB measurements were obtained on a static machine following the procedures and conditions as described in ISO 6393 and ISO 6394 or 86/662/EEC.

Vibration Level

- Hands/Arms: The weighted root mean square acceleration to which the hands/arms are subjected, is less than 2.5 m/s².
- Whole Body: The weighted root mean square acceleration to which the whole body is subjected is less than 0.5 m/s².
- Measurements are obtained on a representative machine, using measuring procedures as set forth in the following standards: ISO 2631/1, ISO 5349, and SAE J1166.

Engine

Caterpillar 3406C turbo-charged after-cooled diesel engine. U.S. EPA emissions certified.

Ratings at	RPM	kW	hp
Gross power	2100	373	500
Net power	2100	345	462

Ratings of Caterpillar machine engines are based on standard air conditions of 25°C (77°F) and 99 kPa (29.32" Hg) dry barometer. Power is based on using 35° API gravity fuel having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/U.S. gal)]. Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator. No derating required up to 1525 m (5,000') altitude.

The following ratings apply at 2100 RPM when tested for the specified standard:

Net Power	Kw	hp	Ps
Caterpillar	345	462	—
EEC 80/1269	345	462	—
ISO 3046	345	462	—
ISO 9249	345	462	—
SAE J1349 (JAN90)	341	457	—
DIN 70020	—	—	479

Dimensions

Bore	137 mm	5.4"
Stroke	165 mm	6.5"
Displacement	14,6 liters	893 cu in.

The dry-type air cleaner with primary and secondary elements has an automatic dust ejector and service indicator.

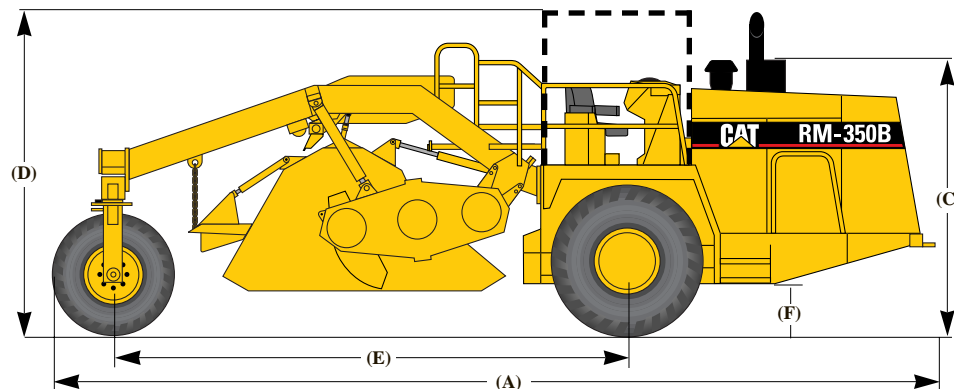
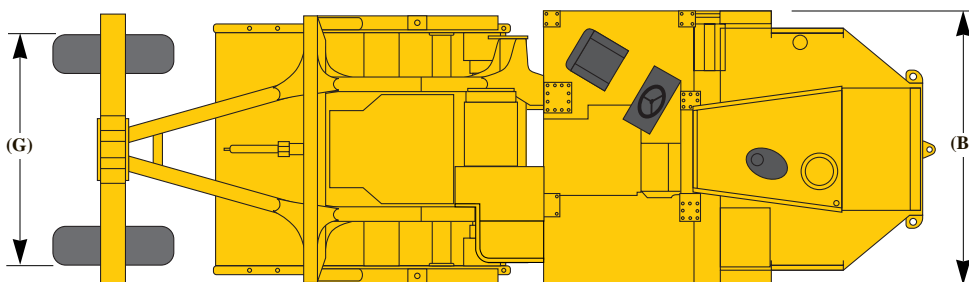
24-volt direct-electric starting and charging system with ether aid (ether canister not included).

Tires

Front	23.5 R25 Lug type L2 60 psi
Rear	19.5L x 24 12 ply Lug type R4 34 psi

Operating Dimensions

	Metric	English
Length (A)	9595 mm	31' 6"
Width (B)	2997 mm	9' 10"
Height (shipping) (C)	3169 mm	10' 5"
Height (to ROPS/Cab) (D)	3404 mm	11' 2"
Wheelbase (E)	5600 mm	18' 4"
Ground Clearance (F)	419 mm	16.5"
Width @ Rear Wheels (G)	2500 mm	8' 3"
Weight		
RM-350B	24 040 kg	53,000 lb
ROPS/FOPS Canopy	455 kg	1,000 lb
ROPS/FOPS Cab	958 kg	2,110 lb



Frame

Fabricated from heavy gauge steel plates and structural steel tubing. Frame joined to rear bolster with welded-in trunion and spherical plain bearings to allow rear bolster oscillation of 15°.

Rotor Options

Three rotor styles are available. All are mount to the standard mixing chamber.

Stabilizer rotors can be set to upcut or downcut.

Rotor	Tools	Max. Depth
Reclamation	188	381 mm 15"
Quick Change	58	508 mm 20"
Combination	108	457 mm 18"

Propel System

Features

- A variable displacement, piston-type pump with electronic displacement control driving a variable displacement motor.
- Two-speed motor drives a two-speed transmission and steerable drive axle with planetary gear reduction in each wheel end.
- Gear selection controlled electrically by a four-position switch on the operator's console.
- Direction of travel controlled by propel lever.
- Infinitely variable machine speed determined by propel lever.
- Load sensing system, controlled by Electronic Control Module (ECM), matches propel speed to load on rotor.
- Differential lock on drive axle engaged via foot switch on operator's platform.

Speeds:

1st gear	0-50 mpm	0-160 fpm
2nd gear	0-5,9 km/hr	0-3.7 mph
3rd gear	0-9,4 km/hr	0-5.9 mph
4th gear	0-16,8 km/hr	0-10.5 mph

Brakes

Service brake features

- Closed-loop hydrostatic drive provides dynamic braking.

Pedal brake features

- Pedal actuated hydraulic caliper/disc brakes in wheel ends.
- Propel pump destroyed when brake pedal is depressed.

Parking brake features

- Caliper/disc brake installed on drive line is spring-applied and hydraulically released.
- Propel pump is destroyed when parking brake is engaged via switch on operator's console.

Steering

Equipped with hydraulic power steering for smooth machine handling.

Features

- Two double-acting steering cylinders are attached to the drive axle and are powered by a pressure-compensated, piston-type pump. Constant pressure is assured in steering system.
- Four steering modes are available via switch on operator's console.

Steering Modes:

- Front wheel only—ECM automatically aligns rear wheels for straight tracking.
- Crab—front and rear wheels turn simultaneously in same direction.
- Coordinated—front and rear wheels turn simultaneously in opposite direction.
- Rear wheel—controlled by toggle switch, maintained by closed-loop control.

Minimum inside

turning radius: 5,48 m (18')

Rotor Depth Control

Rotor depth adjusted via two hydraulic cylinders on sides of mixing chamber.

Features

- Three-position mode switch allows rotor depth control manually or automatically.
- MANUAL mode controls depth via RAISE/LOWER switch. Visual depth gauge from operator's station.
- AUTOMATIC mode automatically controls rotor depth. Setting work depth is easily accomplished in manual mode by a switch on the display console.
- TRAVEL mode selection automatically raises rotor for travel clearance.

Rotor Drive System

Operates direct through Cat 3-speed, powershift transmission.

Features

- Choice of rotor speeds permits working in wide range of materials, depths and applications.
- ON/OFF switch controls clutch pack engagement in transmission. Disc-type brake on rotor driveline activates when master switch in OFF position.
- Three-position switch determines rotor speed. Gear selection can be changed in operation.
- Single strand, high strength rotor drive chains on both sides are contained in heavy-duty chain cases partially filled with oil.
- Shear disk or optional torque limiter protect rotor drive components.

Rotor Speeds (@ 2100 engine rpm)

1st gear	115 rpm
2nd gear	160 rpm
3rd gear	215 rpm

Service Refill Capacities

	L	Gallons
Fuel tank	779	206
Cooling system	61	16
Crankcase	34	9
Differential (propel)	17,1	4.5
Wheel ends (each)	2,4	0.6
Hydraulic system	136	36
Rotor drive axle	17,1	4.5
Rotor bearing reservoir	1,9	0.5
Chain case (each)	22,7	6
Rotor Drive Planetary Gear Reducers (each)	3,8	1
Rotor Transmission	12,4	3.25

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Total Customer Support

Parts availability—most parts on dealer's shelf when you need them. Computer-controlled, emergency search system backup.

Parts stock lists—dealer helps you plan on-site parts stock to minimize your parts investment while maximizing machine availability.

Flexible financing—your dealer can arrange attractive financing on the entire line of Caterpillar equipment. Terms structured to meet cash flow requirements. See how easy it is to own, lease or rent Cat equipment.

Machine management services—effective preventive maintenance programs, cost-effective repair options, customer meetings, operator and mechanic training.

Remanufactured parts—pumps and motors, engines, fuel system and charging system components available from dealer at 20-50% of new part cost.

Dealer Support—Total Cat dealer support to meet your needs for parts, service and financing.

PM Planner—Cat software program helps you schedule preventive maintenance, plan required parts purchases, and track total maintenance costs.

Literature support—easy-to-use parts books, operation and maintenance manuals, and service manuals help you get maximum value from equipment.

Service capability—dealer's shop or fast field service by trained technicians using latest tools and technology.