

SPECIFICATIONS FOR COLD PLANER, MILLING MACHINE, DIESEL ENGINE, 610 HP

ACCEPTABLE BRANDS/MODELS: ROADTEC RX-600e, WRITGEN W200i OR EQUAL

ALL SPECIFICATIONS ARE CONSIDERED MINIMUM UNLESS OTHERWISE NOTED

GENERAL SPECIFICATIONS

It is the intent of these specifications to specify the minimum requirements for furnishing and delivery on one (1) half lane asphalt cold planer. The unit shall be new and the manufacturer's current production model. Unit shall be delivered complete and ready for service, as specified, and shall be equipped with all of the manufacturer's standard equipment, as advertised, whether or not specifically mentioned in these specifications, in addition to all other equipment and attachments specified herein.

DESCRIPTION

The unit shall be a front loading pavement profiler mounted on four (4) crawler tracks.

DIMENSIONS AND CAPACITIES

Overall Length: 47' 5" (min)

Height (Transport): 9' 10" (max)

Weight (Shipping): 59,194 lbs. (min)

Fuel Tank: 250 gallons (min)

Water Tank: 800 gallons (min)

Hydraulic Oil Tank: 52 gallons (min)

FRAME

Machine shall be constructed with high tensile strength steel.

MILLING DRUM

Drum Diameter w/teeth: 40" (min)

Cutting Width: 86" (min)

Maximum Cutting Depth: 13"

Cutting Pattern: Industry Standard with 5/8" Pattern; Cutter housing shall be designed for rapid removal to allow easy tooth changing for width and pattern or equivalent design.

LOADING CONVEYOR

Secondary conveyor length: 25' 11" (min)

Belt Width: 32"

Belt: Endless with 1" molded cleat

Discharge Height: 9' 10" (min)

Minimum conveyor swing: 60 degrees left & right

Travel Speed: 3.1 MPH (min)

Milling Range: 0 – 127 FPM

ENGINE

Diesel power with turbocharger, 610 HP. Tier 4 final/stage IV emissions compliant. Engine soundproofing required. Dual air filters or dust ejector w/service indicator is required. Hinged doors for engine accessibility. Fuel/water separators and filters shall be provided in accordance with engine manufacturer's recommendations or equivalent design.

CHASSIS

Chassis shall be a four-track 10-inch width machine designed for heavy use and be capable of withstanding all forces and loads developed in pavement milling operations without permanent deformation or cracking. The machine shall be designed for front discharge and equipped with all controls for operating in a

forward direction for upcut milling and equipped with all safety controls. The work platform shall have two (2) access ladders (one on each side) with non-slip rungs. The operation station shall have conveniently located controls and provide excellent visibility forward and backward. Decking and walk areas shall be "Gripstrut" grating or non-skid coating. The operator station shall be positioned directly over the cutter assembly with access to operate from left or right side. The machine shall be equipped with suspension lift safety locks. The front and rear tracks shall have individual support legs that utilize hydraulic cylinders for simultaneous height and cutting adjustments. All four tracks shall be capable of steering with independent front and rear steer, crab steer and coordinated steering. Both front and rear tracks shall be positioned to travel within the cutting path of the cutter to allow milling next to curbs or barriers on the right side of the machine or equivalent design.

INSTRUMENTS AND CONTROLS TO INCLUDE:

Engine oil pressure gauge

Engine water temperature gauge

Engine tachometer

Engine hour meter

Fuel level gauge

High water temperature warning light or alarm

Low oil pressure warning light or alarm

Hydraulic oil temperature gauge

High hydraulic oil temperature warning light or alarm

Conveyor drive system pressure gauge

Ground drive system pressure gauge

Clutch engaged hydraulic system pressure gauge

Hydraulic oil filter contamination warning light or alarm

All gauges shall be illuminated and have vandalism protection cover over operator console with lockable hasp. Vandalism cover shall be removable or hinged and not hinder operator's view.

Direction control device (joy stick) on both sides of machine

Ground speed control

Conveyor system controls to include on/off, speed, forward/reverse, and swing left/right and elevation.

Moldboard controls

Fully automatic grade and slope controls with manual override

Machine elevation controls with manual override

Emergency shut-down switch

Rear track steering controls independent of front track position with automatic centering selection or centerline gauge.

Selector switch for automatic performance (on/off), adjustment for engine RPM operating range and manual control of ground system.

Onboard diagnostics

Back-up camera shall be included to increase operator visibility or equivalent design.

AUXILIARY CONTROLS

Emergency engine stop switch, one on each side and one at the front and one at the rear (total of four (4) emergency engine shut-down switches)

Ground level control boxes to include rear/left/right side chassis lift, front/rear mold board lift, left/right end gate lift, rear track steer and automatic depth controls on/off or equivalent design.

All instruments and controls shall be fully labeled

ELECTRICAL SYSTEM

CAN-based, 24 volt system. All electrical circuits shall have circuit breaker protection. To be included shall be a 105 amp alternator, two (2) 8D batteries, regulator, starter and battery disconnect switch or equivalent design.

HYDRAULIC SYSTEM

Hydraulic power shall be provided to the following systems:

1. Ground drive
2. Steering
3. Chassis lift
4. Mold board lift with lock in any position
5. Conveyor drive, lift and swing
6. Cutter housing side gate lifters
7. Water pump
8. Cooling system with variable speed fan for on-demand cooling
9. Dust extraction system

NOTE: The hydraulic system shall be manufacturer's standard design and shall include the following:

- A. Oil Cooler
- B. 100 micron oil strainer
- C. Two (2) filters, 3 micron each on return line
- D. 10 micron on pressure side

- E. System shall have shut-off valves or alternate way to change filters without the loss of hydraulic fluid.

ALL MICRONS LISTED ARE CONSIDERED MINIMUM

GROUND DRIVE

Four B2 (or equivalent) crawler tracks with bolt on polyurethane track pads readily replaceable without disassembly of the crawler track. Full hydraulic (hydrostatic) proportional balanced drive with automatic traction control, infinitely variable throughout the travel and milling speed ranges. Hydrostatic drive type brakes, providing dynamic braking. Over pressure bypass valve, over pressure cut-off valve to prevent excessive temperatures in pump. Parking brake, spring applied hydraulic released disc type on front brakes. An emergency tow system shall allow the machine to be towed or moved short distances in case of a catastrophic engine failure or equivalent design.

CUTTER DRUM

Cutter mandrel shall be constructed of a minimum $\frac{3}{4}$ " steel. Drum helix thickness shall be a minimum of three (3) inches. Cutter drum shall be capable of cutting 13 inches below grade without the need to remove the grade shoes. A triple wrap, pressed on or Type 22 heavy-duty bolt on "quick change" type holder system allowing easy field replacement of the tool and holder without the need for a welder, using only common hand tools, ensuring correct realignment of the holder geometry to maintain high tooth endurance and to ensure proper milling pattern ($\frac{5}{8}$ " milling tool spacing). Cutter drum shall be equipped with manganese faced, bolt on material paddles or equivalent design.

CUTTER HOUSING

Cutter housing shall be designed to quickly detach from tractor. Special liners or a hardened steel housing with inlayed carbide inserts shall extend the life span of the cutter housing. Cutter housing shall include front and rear mold boards to allow for efficient material evacuation. Housing shall be equipped with depth of cut gauges on both sides. Alternatively to manual gauges, the depth of cut can be

digitally displayed through machine control panels. Hand crank shall be provided for manually rotating cutter while changing cutter teeth. The end gates shall be equipped with hydraulic lift cylinders. End gates shall return to the lowest position automatically as a safety measure. Automatic disengagement of cutter drum when the access door is open. The support bearing on opposite end of the drum from the cutter gearbox shall be a heavy duty, long life, cylinder roller bearing using lubrication. Replaceable Tungsten carbide scraper blade shall also be included on the machine. Front and rear water spray bars with volume and pressure control valves shall be standard or equivalent design.

CUTTER DRIVE

Bolt-on with mechanical V-belt drive. Belt drive shall have automatic hydraulic belt tensioner. The machine shall have a hydraulically engaged, dry, multi-disc drum clutch or equivalent design.

MOLDBOARD

The rear moldboard shall have replaceable abrasion resistant carbide steel scraper blade wear edges across the full width and hydraulic lift cylinders with positive up/down controls and a “float” mode. Rear moldboard shall have a positive mechanical lock to keep the door open while working on the cutter drum or equivalent design.

CONVEYORS

The conveyors shall be capable of discharging into a truck bed and windrowing onto the pavement. The conveyors shall be capable of loading semi bottom dump and semi end dump trailers from directly behind the truck. The conveyor belt speed shall be infinitely variable. The load out conveyor must swing a minimum of 60 degrees to left or right. The single assembly conveyor carrier and bottom support rollers shall be fitted with safety “rub rails” to protect from truck damage. The conveyor frame shall be of one-piece tubular design for lightweight, stiffness and ease of belt replacement. The drive pulley tension must be adjustable on both sides. Remote grease fittings shall be installed on all “hard to reach” bearings. Pickup belt and load out belt shall be heavy-duty seamless belts with 1”

tall molded cleats. The conveyor system shall have a discharge capacity to handle all material milled by the drum within the operating speed and depth specifications. Both pickup conveyor and load out conveyor shall be completely covered to prevent the formation of debris clouds during windy weather. The primary conveyor must be capable of dropping without removing secondary conveyor to maximize maintenance accessibility. The conveyors shall be equipped with a dust extraction system to remove excess dust and debris from the milling operation and deposit the material at the far end of the secondary conveyor discharge. The dust extraction system shall be included to remove dust from the primary conveyor via hydraulic fan and place the material into the dump truck alongside the discharge end of the secondary conveyor or equivalent design.

STEERING

The machine must be steered from the tops of leg tubes with keyway steering or equivalent design.

WATER SPRAY SYSTEM

The water tank shall hold a minimum of 800 gallons of water. The tank shall be corrosion protected. The tank shall be equipped with 2" CamLoc male end fire hose couplers to allow quick connection to a fire hose for water filling. The machine shall be equipped with a minimum of three (3) ground level fill locations. The water spray system shall be a high-pressure design for drum cooling and dust suppression. The water system shall be designed with flow control and pressure control valves to all spray bars. Spray nozzles shall be easily accessible for cleaning and replacing. In-line water filter between water storage tank and spray nozzles to be included. The water system shall have a non-gravity drip solenoid to keep water from draining out of the tank when the pump is shut off. The water system shall have a high/low pressure monitor to prevent damage to the pump should the spray nozzles become plugged or the water tank runs dry. The pump shall have a high capacity centrifugal type or equal to ensure lowest possible milling bit temperature or equivalent design.

LIGHTING

Two (2) work lights on the front of the machine, two (2) lights in the front of the cutter drum area. Two (2) lights in the back of the cutter drum area, two (2) lights on the load out conveyor. Two (2) lights on the rear of the machine and amber warning strobe light visible from all directions.

GRADE AND SLOPE

Includes: Three (3) control boxes, dual wire rope sensors, single eye sonic sensor, slope sensor, cross over cables, brackets, carrying case, cables and hardware.

ACCESSORIES

1. A high-pressure water wash down system with 40' of quick disconnect hose and hose reel.
2. Weatherproof backup alarm
3. Air compressor with reservoir and air tools for changing cutter bits and "quick change" holders.
4. Lockable storage area.
5. Two (2) complete sets of service and part manuals.
6. One (1) umbrella with hardware shall be provided for sun protection.

DIAGNOSTICS

The machine shall be equipped with both onboard diagnostics system and remote telematics system. The machine must be accessible to the owner from a remote location through the use of a cellular signal. The machine must be capable of emailing all fault codes and service reminders to the owner via remote telematics. Remote telematics must allow owners to view the machine's speed, location, engine load, and fuel usage in real time. Telematics system must allow for changes to grade and slope parameters to be made from a remote location. All fault codes and service reminders shall be sent via email to representatives designated by the owner of the machine or equivalent design.

WARRANTY

The engine is to have five (5) years/5,000 hours warranty. Complete unit shall have two (2) years or 1,000 hours on parts and labor (excluding normal wear parts). **NOTE:** A copy of the written warranty shall be furnished when the machine is delivered. Warranty repairs shall be performed by the successful bidder if within the FOB regional delivery location area or at the FOB delivery location. If transportation is required outside the regional area it shall be at the vendor's expense. Warranties and guarantees by the suppliers of various components in lieu of a single source responsibility by the milling machine manufacture will not be accepted. The successful bidder shall be solely responsible for the guarantee of the complete unit.

TRAINING, PREVENTATIVE MAINTENANCE, AND SAFETY ORIENTATION

The unit shall be serviced, adjusted and made ready for normal operation upon delivery. A factory trained experienced person(s) shall be made available to provide on-site training on preventative maintenance, safety orientation, and machine operation for a minimum of thirty (30) hours on the initial startup and an additional ten (10) hours within the first twelve (12) months at TDOT's request. TDOT shall have the option to call for an additional seven (7) hours of training per year each of the next four (4) years of ownership. The cost of training must be included in the price bid for the equipment.

SPARE PARTS KIT

1. One set of all hydraulic filters
2. One set of all fuel filters
3. Six spare holders
4. One set of water nozzles

PARTS AND SERVICE

Manufacturer's franchised authorized dealer must have parts and service facility within three (3) hrs. of the FOB delivery location. This must be a full service

franchised dealership which includes: **1)** Sales and field representatives; **2)** Manufacturer's required specialized tools; **3)** Fully equipped service trucks; **4)** Factory trained technicians

PARTS AND SERVICE AVAILABILITY

Parts shall be available on-site within a maximum of seven (7) days of request after warranty period. In the event that any warranty repairs exceed fourteen (14) days, it shall be the vendor's responsibility to supply the state a machine of equal size until repairs are completed. Vendor shall be responsible for all delivery and transportation costs of replacement unit.