

MOTOR GRADER

LG220

HORSEPOWER

- Gross: 158 kW / 212 hp / 2,200 min⁻¹
- Net: 156 kW / 209 hp / 2,200 min⁻¹

OPERATING WEIGHT

- 17,065 kg

BLADE LENGTH

- 3965 mm



DRIVING THE FUTURE

Photos may include optional equipment.

WALK-AROUND LG220

PRODUCTIVITY

- » Long wheelbase & short turning radius.
- » Optimized hydraulic & cooling system.

CONTROL

- » Outstanding power transmitting system.

COMFORT

- » Excellent visibility.
- » Spacious interior.

SERVICEABILITY

- » Machine monitoring system.
- » Easy maintenance design.

MAINTENANCE

- » Energy saving operation report.
- » Equipment management support.
- » Optimal strategy for efficient work.

ECOLOGY & ECONOMY

- » CUMMINS diesel Engine power system CRDI.
- » Circumference dynamic noise.



*Photo may include optional equipment.

WIMER LG220

HORSEPOWER Gross: 158 kW 212 hp/2,200min⁻¹
Net: 156 kW 209 hp/2,200min⁻¹

OPERATING WEIGHT 17,065 kg

BLADE LENGTH X WIDTH 3965 X 675 mm

LG SERIES MOTOR GRADERS



» The perfect fit for the jobsite

- » Most of motor grader applications requires accuracy and versatility. For that, motor graders should be easy to operate in any situations of work.
- » To realize this ease of operation, LG series motor graders are totally improved from overview design down to each element.
- » Our design philosophy contributes to our motor graders fitting in every jobsites from road construction to snow removal, and brings more productivity to every operators from beginner to expert.

» Get more versatility

- » The LG220 attempts to get more versatility in the middle class graders which are used in various jobsites. With variety of work equipments and stretched wheelbase that is easier to accommodate longer blade, all elements are enhance job efficiency.
- » Moreover, the torque converter transmission provides easy control, resulting in more precise operation in any application.



PRODUCTIVITY



» Long wheelbase & short turning radius

- » The long wheelbase enables high leveling performance with a long blade and easier to set the blade position.
- » Long wheelbase also contributes to expanding blade reach in combination with large articulation angle.
- » Additionally the minimum turning radius still short with wide steering angle, serves high maneuverability.

» Optimized hydraulic & cooling system

» Control valve (11 including ripper and front blade)

Parker K multifunctional control valve with closed load sensing system (CLSS) hydraulic system enable the constant cylinder speed, excellent multifunctional operation ability and fine control.

1. Low operating effort

Implement controls are designed to reduce operator fatigue. They feature short lever throws and effort in both directions. Properly spaced control levers and short lever throws allow the operator to use multiple controls with one hand.

2. Balanced flow

When the operator uses several controls at the same time, flow is proportional to ensure several implements can operate simultaneously.

3. Constant implement speed

Implement speed is constant regardless of engine speed because of the large pump output and proportional flow control function.

» Power on demand

Normally, the variable displacement pump idles at low output.

» When it senses a load requirement, the pump supplies quick flow and pressure to match the demand.

» The result is less hydraulic system heat, quick response and lower fuel consumption.

» Hydraulic cooling fan

The newly designed cooling fan eliminates excessive cooling capacity by controlling air flow rate according to work load.

CONTROL



» Outstanding power transmitting system

» The LG220 features lock-up torque converter transmission for pursuing ease of operation thanks to GERMANY ZF manufacturer.

» This unique system provides both efficiency of direct drive and controllability of torque converter drive.

» With this outstanding power transmitting system, the LG220 power-shift transmission delivers advanced productivity in any applications from fine grading to heavy grading.

» ZF Torque converter features

» High controllability.

- Eliminates engine stalling and inching pedal operation.
- Smooth starting, good controllability in fine grading.
- Easy travelling, automatic gear shifting.
- Reduce excessive tire slipping.

» Torque multiplication

- Multiply over twice torque, provides much torque in heavy grading, ditching and ripping.
- Stable engine speed, reduce shift changing during road maintenance and snow removal.

» Lock-up function

- Prevents loss of efficiency.



» Transmission mode selection

» There is two transmission mode to enhance productivity. With the push of a button, transmission mode is selected to fit in working condition and preference of operators.

Auto mode: Drive with torque converter in all shift position. This mode maximizes torque converter benefits. Lock-up will work in F4-F6 and R2-R3 position. Shifting F6 position serves automatic shifting through F4-F6 in response to machine speed.

Manual mode: Works like a same way as conventional power shift, by engaging lock up clutch with all gears. This mode maximizes efficiency of direct shifting. In reverse travelling, works same way as Auto mode, serves less shift lever operation frequency.

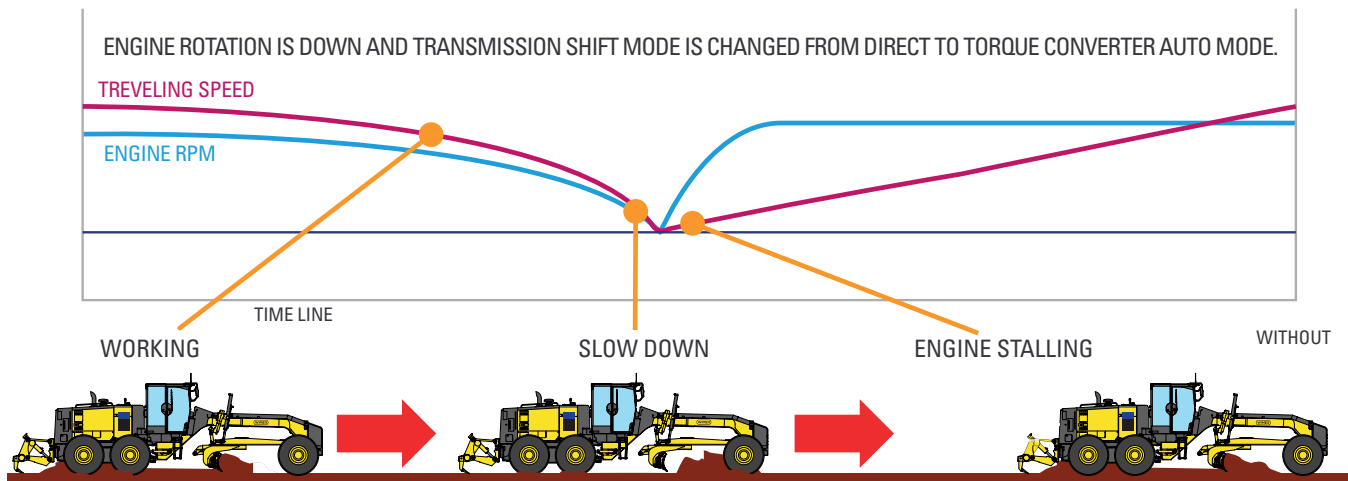
	SHIFT LEVER POSITION						SHIFT LEVER POSITION		
	F1	F2	F3	F4	F5	F6	R1	R2	R3
AUTO MODE	○	○	○	○	AUTOMATIC SHIFTING		○	○	AUTOMATIC SHIFTING ●
MANUAL MODE	●	●	●	●	●	●	○	○	AUTOMATIC SHIFTING ●

● : LOCK UP CLUTCH ENGAGING

» Creep mode

» Prevents engine stalling while Lock up by automatically disengaging the lock up clutch and shifting to torque converter state.

» Torque converter provides much torque to continue to work as it is, never needs to restart the engine and shift the gear.



» Anti stall

» Torque converter transmission introduces creep mode which provides constant low speed without acceleration and brake control.

» Optimized machine speed and great stability of torque converter boosts up precise control during fine grading.

» Power train protection

» Electronic over-speed protection prevents downshifting until reducing the travel speed to the safe range of shift changing.

» FR Inhibitor restricts excessive shuttle shifting at high traveling speed.

» Reduce shift shock for driving comfort

» Torque converter allows to absorb torque fluctuation of the engine.

» Even in shifting the gear during Lock up, torque converter temporarily absorb shift shock and contributes high driving comfort.

COMFORT



EXCELLENT VISIBILITY

» Excellent visibility by hexangular cab with front Y shape pillar and rear layout side pillar boost operator's confidence and productivity in all grader applications.

» Well-positioned blade linkage provides an unobstructed view of the moldboard and front tires. The tapered engine hood provides good visibility to the rear of the machine, especially the rear ripper.



ROPS CAB

» Low profile cab is designed to ensure ROPS/FOPS (ISO 3471/ISO 3449) certification.

» Rear (ripper) view from the cab.



SPACIOUS INTERIOR

» Low noise

» New hydraulically driven fan and redesigned layout of the cooling system achieve a low noise level.

Operator's ear dynamic noise level (ISO6396) - 74 dB (A)

» Suspension seat

» The suspension, fabric covered seat which is adjustable to the operator's weight is provided as standard.
» The suspension seat dampens vibrations transmitted from the machine and reduces operator fatigue.
» The seat features fold-up armrests and a retractable seat belt.



» Air conditioner

» Well-positioned air conditioning vents keep the operator comfortable through a wide range of outside conditions.



» Electric throttle control

» The RPM mode select switch allows the operator to perfectly match the working condition by selecting between three modes: Auto, off and manual.
» The engine speed set by throttle switch is temporarily cancelled when operating the brake/acceleration pedal at Auto mode.



» Storage space

» The cab includes built-in storage space for personal items such as a lunch box, coffee cup, and a coat hook.



» Adopted DC 12 V electrical outlet (optional)

» 12 V DC outlets is included in the operator's cab.

» Adjustable control console

» The control console is adjustable backward and forward to facilitate entry and exit from the cab. The steering wheel also tilts to the operators preference.

ECOLOGY & ECONOMY



» Cummins technology

» Cummins uniquely develops all major components including total control system, like engines, electronics, and hydraulic components. With this "BOSCH technology" and continuous customer feedback, Cummins has been achieving great advancements of technology. This resulted in new generation of high performance and environmentally friendly products.

» High performance engine

» Powerful turbocharged and air-to-air aftercooled CUMMINS QSC8.3-C215-30 engine provides 158 kW 212 hp. This engine realizes high power with low fuel consumption by common rail injection system (CRI), and thus it delivers higher work speeds with high horsepower. In addition, high torque at low speed, impressive acceleration, and low fuel consumption ensure maximum productivity. This engine is U.S. EPA Tier 3 and EU Stage 3A emissions certified.

» Engine power mode selection system

» The system allows selection of the appropriate mode between two modes E or P mode according to each working condition. The mode is easily selected with a switch in the operator's cab.

• **P mode:** Greater productivity can be attained by taking full advantage of high output power. It is appropriate for job sites where the motor grader meets high resistance.

• **E mode:** This mode is selected for maximum economy and lighter work applications. This feature provides the appropriate power and better fuel consumption. digging operation or hill climb.



	P mode		E mode	
	AUTO	MANU.	AUTO	MANU.
F1	118 (158)	118 (158)	104 (140)	104 (140)
F2	131 (176)	131 (176)	118 (158)	118 (158)
F3				
F4				
F5				
F6				
R1	118 (158)	118 (158)	104 (140)	104 (140)
R2	131 (176)	131 (176)	118 (158)	118 (158)
R3				

unit: kW(HP)

» Circumference dynamic noise

» The dynamic circumference noise is lowered by various kind of countermeasures like the hydraulic driven cooling fan ,the variable displacement pump and etc.

**Circumference dynamic
noise level (ISO6395)**

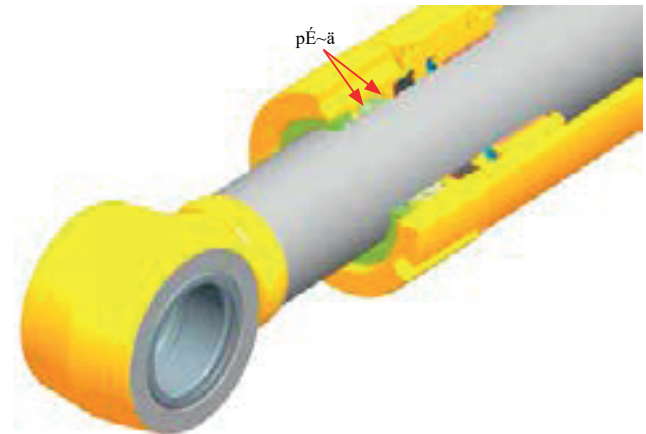
111.4 dB (A)



Hydraulic driven cooling fan

» Double seal cylinder (blade side shift cylinder)

» A double-seal design is used for the blade side shift cylinder, which is installed near the ground, and thus susceptible to damage by dirt. Environmentally friendly by preventing oil leakage from the cylinder.





» Genuine work equipment

» Moldboard options

- Available both 3.9 m (13 ft) and 4.3 m (14 ft) moldboards.
- Optional thicker blades are also available for heavy duty application.

» Front blade (Equipped by default)

- The front blade is a front mounted equipment used for spreading materials such as gravel piles or blading at the front of the machine where is difficult to access with the moldboard.

» Ripper and scarifier

- Digs up hard material cannot be removed by the moldboard.
- The scarifier can accommodate up to 11 teeth, the ripper also accommodate up to 5 shanks and 9 scarifier teeth.



SPECIFICATIONS



ENGINE

MODEL	CUMMINS QSC83-C215-30
TYPE	Water-cooled, 4-cycle, direct injection.
ASPIRATION	Turbocharged and air to air aftercooled.
NUMBER OF CYLINDERS	6.
BORE	114 mm
STROKE	135 mm
PISTON DISPLACEMENT	8300 l
GROSS HORSEPOWER (Manual mode).	
P-MODE:	
GEAR 1-3	120 kw 161 hp/2200 rpm
GEAR 4-6	158 kw 212 hp/2200 rpm
E-MODE:	
GEAR 1-3	107 kw 143 hp/2200 rpm
GEAR 4-6	120 kw 161 hp/2200 rpm
NET FLYWHEEL HORSEPOWER* (Manual mode).	
P-MODE:	
GEAR 1-3	118 kw 158 hp/2200 rpm
GEAR 4-6	156 kw 209 hp/2200 rpm
E-MODE:	
GEAR 1-3	104 kw 140 hp/2200 rpm
GEAR 4-6	118 kw 158 hp/2200 rpm
MAXIMUM TORQUE	980 Nm/1350-1500 rpm
TORQUE RISE	29%.
FAN SPEED	Max. 1,500 min ⁻¹ .
AIR CLEANER	2-stage, dry-type.
ELECTRICAL	24 V with 60 A alternator.
BATTERY	2, low maintenance plus, 12 V, 1146 cca.

*Net horsepower output for standard (SAE J1349) including air cleaner, alternator (Not charging), water pump, lubricating oil, fuel pump, muffler and fan running at minimum speed.
EPA Tier 3 and EU Stage 3A emissions certified.



TRANSMISSION AND TORQUE CONVERTER

FULL POWER SHIFT TRANSMISSION WITH INTEGRAL FREE WHEELING STATOR TORQUE CONVERTER AND LOCK-UP.

Gear	Forward	Reverse
1 st	3.4 km/h	5.5 km/h
2 nd	5.0 km/h	20.3 km/h
3 rd	10.4 km/h	40.3 km/h
4 th	22.3 km/h	-
5 th	30.6 km/h	-
6 th	44.3 km/h	-
7 th	-	-
8 th	-	-



TANDEM DRIVE

OSCILLATING WELDED BOX SECTION	2300 x 640 x 220 mm
SIDE WALL THICKNESS:	
INNER	22 mm.
OUTER	19 mm.
WHEEL AXLE SPACING	1,525 mm.
TANDEM OSCILLATION	11° forward, 13° reverse.
TRACK LINK PITCH	60 mm



FRONT AXLE

TYPE	Solid bar construction welded steel sections.
GROUND CLEARANCE AT PIVOT	620 mm.
WHEEL LEAN ANGLE, RIGHT OR LEFT	20°
OSCILLATION, TOTAL	40°



REAR AXLE

ALLOY STEEL, HEAT TREATED, FULL FLOATING AXLE WITH LOCK/UNLOCK DIFFERENTIAL.



STEERING SYSTEM

HYDRAULIC POWER STEERING PROVIDING STOPPED	ISO 5010.
ENGINE STEERING MEETING	
MINIMUM TURNING RADIUS	7.3 m.
MAXIMUM STEERING RANGE, RIGHT OR LEFT	49°
ARTICULATION	25°



BRAKES

SERVICE BRAKES Foot operated, sealed oil disc brakes, 5 brake disc by wheel, hydraulically actuated on four tandem wheels, 13,691 cm² total braking surface.

PARKING BRAKE Manually actuated, spring applied, hydraulically, released caliper.



FRAME

FRONT FRAME STRUCTURE	REAR FRAME STRUCTURE
HEIGHT	300 mm.
WIDTH	300 mm.
SIDE	12 mm.
UPPER, LOWER	25 mm.
STEEL WEIGHT	206 kg/m



DRAWBAR

A-SHAPED, U-SECTION PRESS FORMED AND WELDED CONSTRUCTION FOR MAXIMUM STRENGTH WITH A REPLACEABLE DRAWBAR BALL.

DRAWBAR FRAME 210 mm x 25 mm.



CIRCLE

SINGLE PIECE ROLLED RING FORGING. FOUR CIRCLE SUPPORT SHOES WITH REPLACEABLE WEAR SURFACE. CIRCLE TEETH HARDENED ON FRONT 180° OF CIRCLE.

DIAMETER (OUTSIDE) 1,530 mm.

CIRCLE REVERSING CONTROL HYDRAULIC ROTATION 360°



MOLDBOARD

HYDRAULIC POWER SHIFT FABRICATED FROM HIGH CARBON STEEL. INCLUDES REPLACEABLE METAL WEAR INSERTS, CUTTING EDGE AND END BITS.

CUTTING EDGE AND END BITS ARE HARDENED.

DIMENSIONS 3,965 mm x 675 mm x 25 mm .

ARC RADIUS 329 mm.

CUTTING EDGE 152 mm x 16 mm.

BLADE PULL

BASE GVW 8,795 kg.

STROKE WITH SCARIFIER GVW 8,860 kg.

WITH RIPPER GVW 9,675 kg.

BLADE DOWN PRESSURE

BASE GVW 6,675 kg.

WITH SCARIFIER GVW 7,585 kg.

WITH RIPPER GVW 8,010 kg.



BLADE RANGE

CIRCLE CENTER SHIFT

RIGHT 590 mm.

LEFT 550 mm.

MOLDBOARD SIDE SHIFT

RIGHT 820 mm.

LEFT 820 mm.

MAXIMUM SHOULDER REACH OUTSIDE REAR TIRES (FRAME STRAIGHT)

RIGHT 2,000 mm.

LEFT 1,960 mm.

MAXIMUM LIFT ABOVE GROUND 480 mm.

MAXIMUM CUTTING DEPTH 615 mm.

MAXIMUM BLADE ANGLE, RIGHT OR LEFT 90°.

BLADE TIP ANGLE 40° forward, 5° backward.



HYDRAULICS

LOAD-SENSING CLOSED CENTER HYDRAULICS WITH VARIABLE DISPLACEMENT PISTON PUMP. SHORT STROKE/LOW EFFORT DIRECT ACTING CONTROL VALVES WITH PRESELECTED MAXIMUM FLOW SETTING TO EACH FUNCTION. DOUBLE ACTING ANTI-DRIFT CHECK VALVES ON BLADE LIFT, TIP, CIRCLE SHIFT, ARTICULATION AND LEANING WHEELS.

OUTPUT (AT ENGINE RATED RPM) 200 L/min.

STANDBY PRESSURE 3.4 MPa 35 kg/cm².

MAXIMUM SYSTEM PRESSURE 20.6 MPa 250 kg/cm².



INSTRUMENT

ELECTRIC MONITORING SYSTEM WITH DIAGNOSTICS

GAUGES:

STANDARD Articulation, engine coolant temperature, fuel level, speed meter, T/M shift indicator, engine tachometer torque converter oil temperature.

WARNING LIGHTS/INDICATOR:

STANDARD Battery charge, brake oil pressure, inching temperature, directional indicator, engine oil pressure, hydraulic oil temperature, heater signal, lift arm lock, parking brake, differential lock, torque converter oil temperature, eco, P mode, rpm set, high beam, working lights.

OPTIONAL Blade accumulator.



CAPACITIES (REFILLING)

FUEL TANK 416 L.

COOLING SYSTEM 24.9 L.

CRANK CASE 23.1 L.

TRANSMISSION 45 L.

FINAL DRIVE 17 L.

TANDEM HOUSING (EACH) 57 L.

HYDRAULIC SYSTEM 69 L.

CIRCLE REVERSE HOUSING 7 L.



OPERATING WEIGHT (APPROXIMATE)

INCLUDES LUBRICANTS, COOLANT, FULL FUEL TANK:

TOTAL 15,135 kg.

ON REAR WHEELS 10,995 kg.

ON FRONT WHEELS 4,140 kg.

WITH FRONT MOUNTED SCARIFIER:

TOTAL 15,780 kg.

ON REAR WHEELS 11,075 kg.

ON FRONT WHEELS 4,705 kg.

WITH REAR MOUNTED RIPPER AND FRONT PUSH PLATE:

TOTAL 17,065 kg.

ON REAR WHEELS 12,095 kg.

ON FRONT WHEELS 4,970 kg.



SCARIFIER (OPTIONAL)

MIDDLE, V-TYPE

WORKING WIDTH 1,430 mm.

SCARIFYING DEPTH, MAXIMUM 205 mm.

SCARIFIER SHANK HOLDERS 11.

SCARIFIER SHANK HOLDERS SPACING 138 mm rear.

WORKING WIDTH 2,186 mm.

SCARIFYING DEPTH, MAXIMUM 165 mm.

SCARIFIER SHANK HOLDERS 9.

SCARIFIER SHANK HOLDERS SPACING 267 mm.



RIPPER

RIPPING DEPTH, MAXIMUM 425 mm.

RIPPER SHANK HOLDERS 5.

RIPPER SHANK HOLDER SPACING 534 mm.

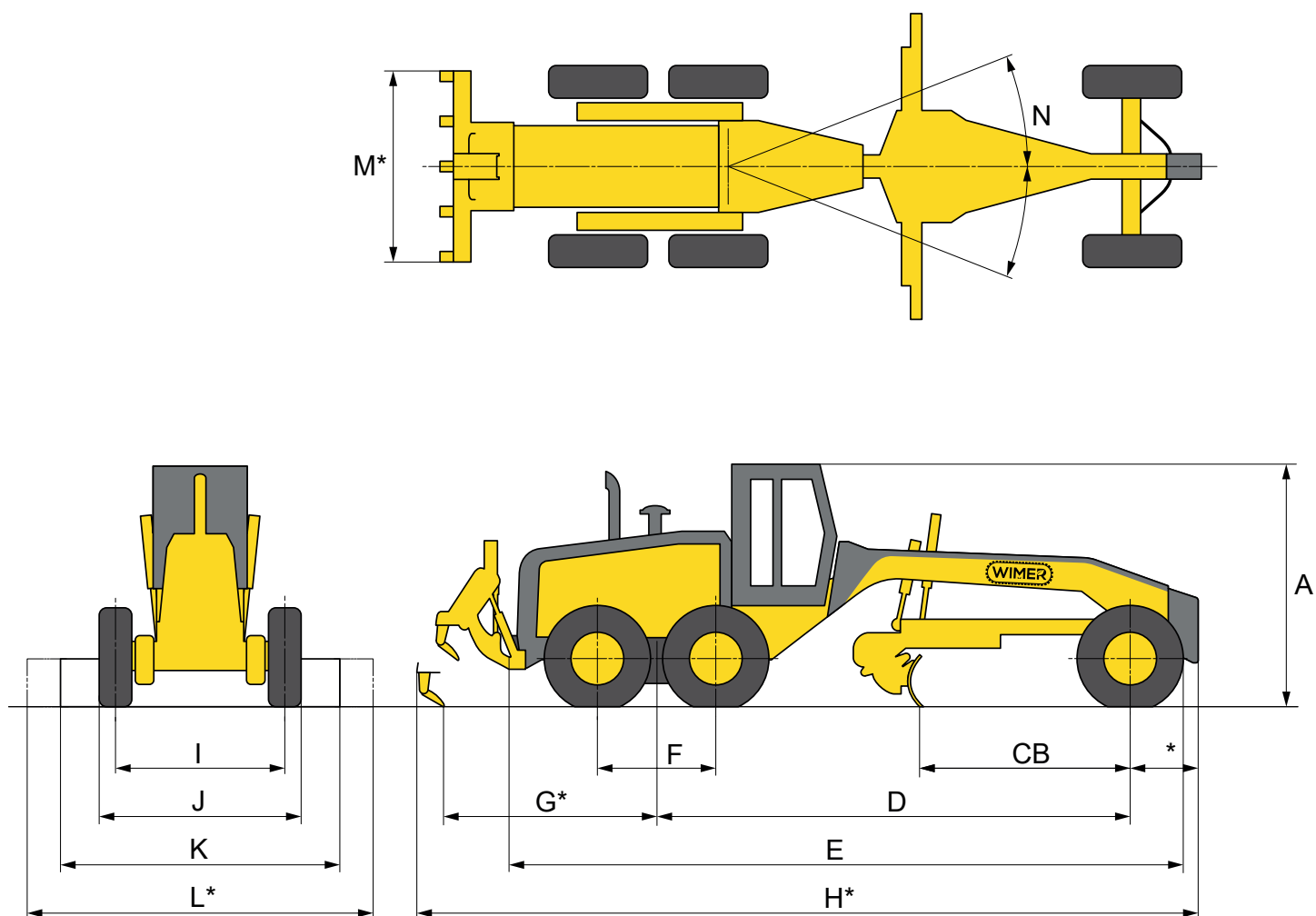
PENETRATION FORCE 8,380 kg.

PRY OUT FORCE 13,335 kg.

MACHINE LENGTH INCREASE, BEAM RAISED 765 mm.



DIMENSIONS



A	Height: Low profile cab	3,200 mm
B*	Center of front axle to counterweight (Pusher)	927 mm
C	Cutting edge to center of front axle	2,380 mm
D	Wheel base to center of tandem	6,270 mm
E	Front tire to rear bumper	8,995 mm
F	Tandem wheelbase	1,525 mm
G*	Center of tandem to back of ripper	2,780 mm
H*	Overall length	10,365 mm
I	Track of gauge	2,060 mm
J	Width of tires	2,485 mm
K	Width of standard moldboard	3,965 mm
L*	Width of optional moldboard	4,320 mm
M*	Ripper beam width	2,305 mm
N	Articulation, left or right	25°

*Optional



STANDARD EQUIPMENT

Tire	Rim size	Rim structure
14.00-24	8"	Multi-piece
14.00-24	9"	Single-piece
14.00-24	10"	Multi-piece
14.00R24	9"	Single-piece
14.00R24	10"	Multi-piece
17.5R25	13"	Single-piece



STANDARD EQUIPMENT

» Engine and related items

- » Double element air cleaner and dust indicator.
- » Fuel line pre-filter.
- » Hood-sides for engine compartment.
- » Air intake extension.

» Electrical systems

- » Alarm, back-up.
- » Battery, extreme duty, 1,146 cca each.
- » Dome light, cab.
- » Horn, electric.
- » Lights: back-up, stop, tail, directional, headlights (2 halogen type, front bar mounted).
- » Work lamps: front (4), rear (2).
- » Speedometer.
- » Indicators: parking brake, differential lock, blade float, lift arm lock, high beam, eco, engine P mode, cooling fan reverse, rpm set, engine oil pressure, battery charge, brake oil pressure, differential oil temperature.

Alternator 90 amp/28 volts

» Operator environment

- » Cab: low profile enclosed ROPS/FOPS (ISO 3471/ISO 3449) with safety tinted glass windows with wiper and washer.
- » Air conditioner (R134a).
- » Console, adjustable with instrument panel monitoring system.
- » Mirrors: interior cab, right and left exterior mirrors.
- » Seat, deluxe adjustable cloth with retractable seat belt.
- » Sound suppression, cab and floor mat.
- » Wipers, front, doors, and rear.
- » 12 V (10 A) power port.

» Power train

- » Dual mode transmission power shift, direct drive and torque converter with auto shift.
- » Axle, rear full floating, planetary type.
- » Service brakes, fully hydraulic wet disc.
- » Brake, parking, spring applied, hydraulic release, disc type.
- » Differential, lock/unlock.

» Work equipment and hydraulics

- » Circle, drawbar mounted, 360° rotation blade lift and circle side shift.
- » Circle slip clutch.
- » Hydraulic system, closed center, load sensing.
- » Moldboard: 3965 mm x 675 mm x 25 mm, replaceable end bits, throughhardened edges.
- » 152 mm x 25 mm, hydraulic blade side hydraulic tilt with anti-drift check valves moldboard angle position 90° right & left.
- » Steering, full hydraulic with tilt steering plus leaning front wheels and frame anti-drift check valves.
- » 9 section hydraulic control valve.
- » Blade lift float detent style, LH and RH.

» Other standard equipment

- » Painting, red or yellow standard color scheme.
- » Steps and handrails, rear, right, and left.
- » Vandalism protection includes lockable fuel tank, battery cover, and engine side.
- » Tool box with lock.
- » Fuel tank, ground level access.
- » Battery disconnect switch.



OPTIONAL EQUIPMENT

- » Accumulators, anti-shock for blade lift.
- » 10 section hydraulic control valve.
- » Cab mount work lamps (4).
- » General toolkit.
- » Pre-cleaner, Turbo II.
- » Pusher plate, additional.
- » Additional heater.
- » AM/FM radio.

- » Moldboard.
 - 3,710 mm x 645 mm x 25 mm.
 - 4,320 mm x 645 mm x 19 mm.
 - 4,320 mm x 645 mm x 25 mm.
- with replaceable end bits, throughhardened cutting edges 152 mm x 16 mm.
- » Front blade.

- » Ripper, assembly, rear mounted.
- » Ripper shanks and points, 2 additional.
- » Scarifier, assembly, 11-shank type.
- » Scarifier, shanks and points (9) for ripper.
- » Warning light, amber colored rotating cab roof mounted.
- » Alternator, 90 A, 24 V.

**Optional equipment may not be available in your country.
Please contact your Distributor for further information.**