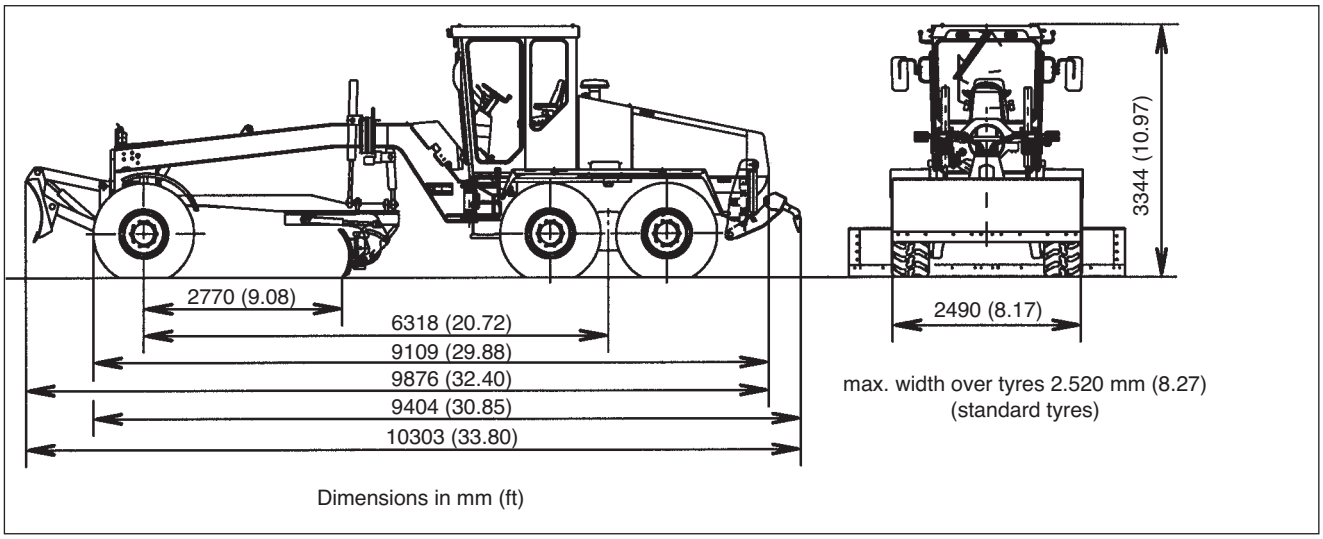
HBM-NOBAS
BAUMASCHINEN



max. width over tyres 2.520 mm (8.27)
(standard tyres)

Dimensions in mm (ft)

MOTOR GRADER
BG 230 T-4 (6x4) / BG 230 TA-4 (6x6)

Operating weight

Total weight	app. 19 000 kg	(42 140 lbs)
On rear wheels	app. 13 300 kg	(29 498 lbs)
On front wheels	app. 5 700 kg	(12 642 lbs)

Weights shown include cab, all operating fluids, 4-teeth rear ripper, front dozer blade.

Engine Data

Make/Model	CUMMINS / diesel engine
Typ	4 cycle, direct injection, turbo charged, water-cooled,
Rated ned horsepower (SAE J 1995)	at 2200 RPM 164 kW/223 HP at 2000 RPM 172 kW/234 HP
No. of cylinders	in line 6
Bore & stroke	107 x 124 mm
Displacement	6,7 litres

Engine equiped with a dual element, dry-type air cleaner with dust ejector. 24 volt starting and electrical system. 70 amp alternator and 24 volt starter with 3,7 kW (5,0 HP).
2 batteries 100 Ah each.

Rear axle drive system

Hydrodynamic rear wheel drive, 6-speed full powershift gear with torque converter (type ZF 6 WG). Speed at 2200 RPM, tires 17.5-25.

Forward	km/h	mph
1.	4,00	2.50
2.	7,00	4.50
3.	10,00	6.20
4.	17,00	10.60
5.	22,00	13.70
6.	40,00	24.80

Revers	km/h	mph
1.	4,00	2.50
2.	10,00	6.20
3.	22,00	13.70

All wheel drive system

Hydrodynamic rear axle drive with 6-speed Ergopower transmission with torque converter (type ZF 6 WG) as well as freely selectable microprocessor controlled hydrostatic front axle drive. Power train is controlled appropriate to tyre traction of front and rear wheels.

Tandems

Drive via roller chains.
Torsion-proof box sections.

Height	517 mm	(20.35 in.)
Width	184 mm	(7.24 in.)
Thickness of walls	22 mm	(0.87 in.)
Wheel base	1542 mm	(60.71 in.)
Oscillation	±15°	
Ground clearance	480 mm	(18.90 in.)

Rear Axle

Oscillating tandem axle with axle insert.
No-Spin differential.
Multi-disc brakes in all four wheel hubs.
Parking brake

Front Axle

2 types are available

Oscillation	15° up and down
Steering angle	45°
Wheel lean	±17°
Ground clearance	591 mm (23.27 in.)

Non driven with wheel lean (T version)
Stable welded steel beam with wheel lean

Driven with wheel lean (TA version)
Stable welded steel beam with wheel lean and radial piston engines in wheel hubs. Pull force electronically adjustable (infinitely variable).
Possibility to fit in the hydraulic differential lock.

Brakes

Service brake:
Dual circuit, power-boosted, multiple-disc oil-bath type, effective on four wheels. Includes reserve power and operator warning system.

Parking brake:
Independent brake, single disc type, hydro mechanically acting at output shaft of transmission, electrically actuated.

Steering

Hydraulic power steering.

Minimum turning radius with dozer blade	8050 mm	(26'5")
Minimum turning radius without dozer blade	7500 mm	(24'7")
Steering angle		45°

Wheels & Tyres (Standard equipment)

Tyre size	17.5-25
Rim size	14 x 25/1.3

Load-Sensing Hydraulics

The control valves of the working hydraulics may be actuated at a time and independent of each other. The load-sensing pump (axial piston pump) discharges only the required quantity of oil, if a control valve is actuated. When hydraulic power is not required, system pressure is only 24 bar and this low standby pressure improves fuel-efficiency and reduces heat generation.

Lock valves and brake valves prevent a cylinder drift under load.

Operating pressure	185 bar	(2698 PSI)
Oil flow, max.	99l/min	(26.2 U.S. Gal./min.)

Frame

Front frame and rear frame sections connected with articulation free of readjustment.
Front section: Full welded box section

Minimum dimension of front box section	300x310 mm	(11.8x12.2 in.)
Plate thickness	25 mm	(0.98 in.)

Rear section: Full welded section

Dimension (compact beam)	350 mm	(13.78x3.5 in.)

Circle

Hardened teeth, cut on inside of circle for maximum strength and minimum wear. The circle is held positively in place at four points by four clamps and guide shoes. The clamp and guide shoes are located where greatest loading occurs.

Circle diameter	1510 mm	(59.40 in.)
Thickness	40 mm	(1.57 in.)
Height	110 mm	(4.33 in.)
Adjusting guide plates and clamps		4

Circle drive

Hydraulically driven worm gear transmission. Circle drive system fully protected against impact damage by an overload clutch.

Drawbar

Y-shaped fully welded construction

Dimension of compact beams	40x210 mm	(1.57x8.27 in.)

Moldboard (Standard)

Moldboard	3962x630x20 mm	(13'x24.8"x0.79")
Edge material		High carboned steel
Blade pull (friction factor 0,8)	BG 230 T	106 KN (23850 lbs)
	BG 230 TA	131 KN (29475 lbs)

Blade Range

Reach outside tires without articulation (R&L)
2155 mm (54.74 in.) / 1460 mm (57.48 in.)
Reach outside tires with articulation (R&L)
3005 mm (118.31 in.) / 2310 mm (90.94 in.)

Blade slide	1250 mm	(62.79 in.)
Blade tild range	36°-76°	
Bank sloping angle, left and right	90°	
Blade ground clearance	470 mm	(18.50 in.)
Blade cutting depth	380 mm	(14.96 in.)

All positions can be operated from the cab.

Capacities

Fuel tank	480,0 litres	(126.8 U.S. Gal.)
Hydraulic oil tank	150,0 litres	(39.6 U.S. Gal.)
Engine oil	24,0 litres	(6.3 U.S. Gal.)
Power shift transmission	34,0 litres	(8.9 U.S. Gal.)
Axie drive, front (BG 230 TA)	10,0 litres	(2.6 U.S. Gal.)
Axie drive rear	29,0 litres	(7.7 U.S. Gal.)
Final drive, front (BG 230 TA)	3,0 litres	(0.8 U.S. Gal.)
Planetary gears and brakes	14,0 litres	(3.7 U.S. Gal.)
Tandem (2x21 litres)	42,0 litres	(11.0 U.S. Gal.)
Circle drive	9,0 litres	(2.4 U.S. Gal.)
Coolant	35,0 litres	(9.2 U.S. Gal.)

Operator's Platform

Dimensions

Width	1150 mm	(45.2 in.)
Depth	1400 mm	(55.1 in.)

Available with various options as listed under "Optional equipment", moldboard control acc. to EURO-standard.

Light Equipment

2 headlights front, 2 direction indicator lights each (including warning signal flasher) front and rear and additional 2 at cab, 2 tail lights, 2 stop lights, 1 back-up light, clearance lights, 2 working lights rear, two working lights front each at lower and upper edge of cab.

Optional Equipment

Cab, tiltable

Integrated ROPS/FOPS cab mounted on isolators to limit vibration and noise entering the cab. Excellent all-round visibility. Roomy and comfortable. Adjustable steering pedestal with EURO control lever arrangement. Interior of cab fully lined, floor covering. Tinted safety glass windows, sliding doors left and right with lockable intermediate positions, fresh air heating with pre-filter, air circulation. Adjustable, hydraulically-sprung driver's seat with safety belt. One inside mirror and two folding outside mirrors.
Front window washer.
Wipers front and rear.
Blinds front and rear.

Hight / Width / Depth 1980/1470/1700 mm (77.9/57.8/66.9 in.)

Low-profile cab, tiltable

Height / Width / Depth 1760/1470/1700 mm (69.3/57.8/66.9 in.)

Air-condition for cab

Auxilliary heating

Beacon (orange)

Air-cushioned driver´s seat

Recording speedometer

Cooling box

Stereo radio with CD player

Sliding side windows

Protective grids for lights and cabin

Circle Drawbar
Hardened teeth, machine-cut on inside of circle for maximum strength and minimum wear. The circle is held positively in place by an adjustment-free roller bearing. Drawbar fully welded solid section

Circle diameter	1510 mm	(59.40 in.)
Tool width	83 mm	(3.27 in.)
Height	130 mm	(5.12 in.)

Moldboard	3660 x 630 x 20 mm	(12' x 24,8" x 0,79")
	4267 x 630 x 20 mm	(14' x 24,8" x 0,79")

Cover plate for upper guide rail of moldboard

Adjustable moldboard corner shoe LH & RH

Moldboard extension, left or right 305 mm (1 ft.)

Float position for both moldboard lift cylinders

Electric fuel pump with automatic switch-off

Wheels and tyres

Tyre size	17.5 R 25
Rim size	14.00 x 25/1.3

Rear ripper, with depth indicator		4 teeth
Width	2120 mm	(85.46 in.)
Ripping depth	260 mm	(10.24 in.)
Lift above ground	630 mm	(24.80 in.)
Weight	522 kg	(1150 lbs.)

Front dozer blade, with position indicator		
Width/Height	2490 x 780 mm	8' 2" x 30"
Cut below ground	170 mm	(6.7 in.)
Lift above ground	505 mm	(19.88 in.)
Weight	865 kg	(1907 lbs.)

Scarifier, in front of front axle

Front dozer, articulated

Push-Block

Side snow plow

Windrow spreader

Mudguards on rear wheels

Mudguards on front wheels

Articulation angle indicator

Special paint

Tool kit, wheel chocks, warning triangle, fire extinguisher etc.

Automatic blade control
Various automatic laser or ultrasonic controlled blade systems

Optional equipment may vary depending on national regulations.

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