

# KOMATSU®

## GD655-3

### With Tier 3 Engine

**FLYWHEEL HORSEPOWER**

**GD655 134 kW 180 HP**

**VHPC 149 kW 200 HP**

**OPERATING WEIGHT**

17145 kg **37,801 lb**

**BLADE LENGTH**

3.71 m **12 ft**

**GD**  
**655**

MOTOR GRADER



Photo may include optional equipment.

# WALK-AROUND

## ***Electronic monitor***

with self-diagnostic function.



***Tinted glass reduces*** glare, adding to operator comfort.

A simple ***blade suspension system*** allows good forward visibility.

***Stable work equipment speeds*** are unaffected by engine speed.

***Low front nose*** provides good visibility.

A ***wide working range*** is accomplished through versatile blade geometry.

***Bronze alloy guides*** on blade and circle provide long service life.



## ***Dual Mode Transmission***

Operator can choose torque converter drive or direct drive to maximize productivity.

The ***lock-up torque converter*** provides smooth power for grading and speed for roading or snow removal.

## **KOMTRAX™**

KOMTRAX sends machine location, Service Meter Readings (SMR), and operation maps to a secure website utilizing wireless technology. Machines also relay fuel level.

***Excellent visibility***

- Front and rear glass is angled to prevent dust build-up.
- Rear window has electric defroster and wiper and washer as standard equipment.

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***Komatsu SAA6D114E-3 turbocharged and aftercooled***

diesel provides 134 kW **180 HP** to 149 kW **200 HP** for demanding applications. This engine is EPA Tier 3 and EU stage 3A emissions certified, without sacrificing power or machine production.

Access to all **engine** maintenance items is easy with wide hinged compartment doors.



Photo may include optional equipment.

***Brakes*** are adjustment-free hydraulically operated wet type multiple-disc.

Wheel spin is reduced with the ***manual lock/unlock differential.***

# KOMATSU DESIGNED

## Converter Drive: Designed to Provide Power and Performance on the Job Site



Komatsu's new "ecot3" engines are designed to deliver optimum performance under the toughest of conditions, while meeting the latest environmental regulations. This engine is Tier 3 EPA and EU Stage 3A certified. "ecot3" - ecology and economy combine with Komatsu technology to create a high performance engine without sacrificing power or productivity.

### **Komatsu SAA6D114E-3 Engine**

The turbocharged and aftercooled heavy duty high-pressure common rail fuel injection SAA6D114E-3 engine provides excellent power and fuel efficiency. Output is 134 kW **180 HP** (149 kW **200 HP** in higher gears) providing excellent tractive effort with good fuel economy. This engine is EPA Tier 3 and EU stage 3A certified without sacrificing power or machine productivity.

### **Electronic Overspeed Protection**

Helps prevent engine and transmission damage from premature downshifting and grade-induced acceleration.

### **Electronic Transmission Control**

Produces smooth shifting, which enables the operator to maintain a uniform grading surface if shifting is required. Smooth shifts also extend the life of the transmission by placing less stress on transmission clutches. A single lever controls direction, speed and parking brake.

### **Komatsu Power Shift Transmission**

Designed and built specifically for Komatsu graders, the transmission provides on-the-go, full power shifting as well as inching capability and automatic shifting in the higher ranges.

### **Lock-up Torque Converter**

The operator chooses the optimum transmission setup for the job at hand; lock-up torque converter or direct drive. If power for tough grading or low speed fine control is required, the operator can select the torque converter mode. With the torque converter, the operator has tremendous tractive effort and fine control at low speed without shifting or using an inching pedal. Torque converter drive is available in gears 1-4. If high speed is needed for transport or snow removal, the operator can select direct drive. With both torque converter and direct drive available, operators have the best of both worlds . . . at their fingertips.

### **Gear Selections**

Eight forward speeds and four reverse speeds give the operator a wide operating range. With four gear selections below 6 mph, the operator can precisely match working speeds to job conditions for maximum productivity in earthmoving applications. Gears five, six, and seven provide optimal speed range for snow removal operations. When in torque converter mode, shifting is automatic in speeds five through eight. The operator sets the maximum gear for operation and the transmission then shifts automatically between gears four through eight up to the operator selected maximum gear.

### **Low Effort Inching Pedal**

Gives the operator, when in direct drive (manual mode), precise control of machine movement. This is especially important for operators who have previous experience with operating a direct drive motor grader.

## Versatile Moldboard Geometry

Komatsu graders feature versatile moldboard geometry. Save time and money when pulling ditches by throwing the windrow to the right, not into the roadway—without narrowing the road bed. It's made possible by Komatsu's extraordinary reach. Plus, there is generous clearance between the heel of the blade and main frame, even with the toe sharply angled down.

Extra-long lift cylinders let the moldboard reach 815 mm 2'8" below grade.

**Blade Angle** A long wheel base allows the operator to obtain an aggressive moldboard angle. This large blade angle permits material to roll more freely along the blade, which reduces power requirements. This is particularly helpful in dry soil or clay or for snow and ice removal.

**Rugged Construction** The A-frame drawbar is U-shape welded construction. A one-piece forged circle is built to stand up to high stress loads. To reduce wear, teeth are induction hardened in the front 180° of the circle. For maximum support, the circle is secured to the drawbar by six support shoes.

**Replaceable Metal Wear Inserts** Replaceable metal wear inserts are located between the drawbar and circle and the support shoes and circle. This wear system helps keep components tight for fine grading and allows easy replacement. Komatsu also uses replaceable metal wear items in the following areas:

- Circle and moldboard tip bracket bearings
- Moldboard slide rail

**Cylinder Socket Dust Seals**  
**Blade Lift and Drawbar Sideshift** Cylinder sockets have dust seals to prevent dust from entering the sockets and causing wear.

**Circle Drive Slip Clutch** helps protect the drawbar, circle and moldboard from horizontal shocks when an object is hit near the toe or heel of the blade.

**Optional Protection Systems**  
**Blade Lift Accumulators** absorb shocks when the moldboard contacts immovable objects. This option is especially useful in rough grading and rocky areas. It provides precise control while allowing relief from vertical impact loads. This option is most useful in applications where hidden objects are frequently encountered.



## Closed Center Load-sensing System (CLSS) with Proportional Flow Hydraulic System

### 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. The bottom line is greater efficiency.

### Implement Control Valves

Designed and built by Komatsu specifically for motor graders. They are direct acting and provide outstanding operator "feel" and predictable system response for precise implement control. To help maintain exact blade settings, lock valves are built into the hydraulic circuits. Relief valves are also incorporated into selected circuits to protect the cylinders from over-pressurization.

### Low Operating Effort

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

### Balanced Flow

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

### Constant Implement Speed

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



# WORKING ENVIRONMENT

## Excellent Visibility

Exceptional visibility helps increase operator confidence and productivity in all grader applications. Well positioned blade linkage provide an unobstructed view of the moldboard and front tires. The tapered engine hood provides good visibility of the rear of the machine, especially the rear ripper.



### Quiet Cab

With the doors closed, the quiet environment keeps the operator alert and focused.

### Roomy Interior

Extra leg and foot room create a spacious, open cab. The cab includes built-in storage space for personal items such as a lunch box, coffee cup, and a coat hook.

### Suspension Seat

Features fold-up armrests and a retractable seat belt. The seat follows the contour of the body and can be easily adjusted for optimal support and comfort.

### 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.

### Electronic Monitoring System

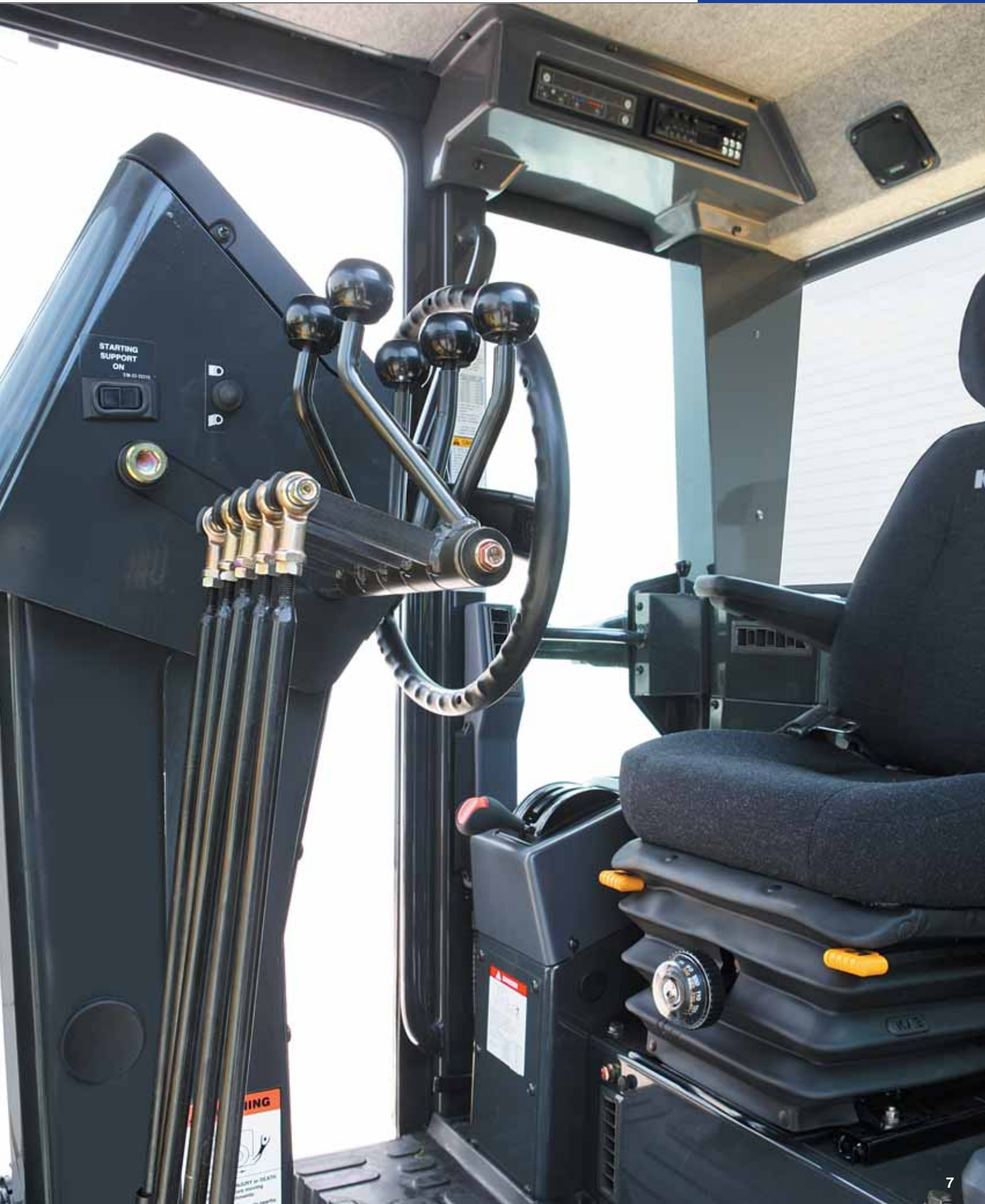
Electronic monitoring system monitors important machine systems and provides the operator with a warning if an abnormality occurs.

### 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.

### Air Conditioner

Well-positioned air conditioning vents keep the operator comfortable through a wide range of outside conditions. In warm weather, the operator can get cold air flow towards the back even when the front lower window is opened.



WARNING



# MAINTENANCE FEATURES

## Serviceability

### Easy Access to Service Areas

- Large hinged doors are standard and provide easy access to the engine and radiator service points. Spin-on oil filters can be changed quickly.
- Lubrication points for the articulation joint are remote-mounted.
- Fuse panel is located in the cab. Circuits and fuse sizes are clearly identified.
- Tandem oil check point is conveniently located at the end of the tandem.
- Service meter is located in the electronic monitoring system.

### Power Train Components

Features a modular design so you can remove the engine, transmission or final drives independently for quick service.

### Character Display

During normal operation, the service meter/odometer is displayed in this area. If an abnormality or machine overload occurs, or if machine maintenance and inspection are required, action codes appear on the display to allow the operator to take appropriate action.



### Adjustment-Free Oil Disc Brakes

Komatsu designs and builds multiple-disc brakes that are completely sealed and adjustment-free. The brakes are oil bathed, hydraulically actuated, and are located at each tandem wheel to eliminate brake loads on the power train and to facilitate servicing. A fully hydraulic brake system eliminates problems associated with air systems. The large braking surface provides dependable braking capability and increased life before a rebuild is required.

### Friendly Environment

The engine and transmission are rubber-mounted to transmit less engine noise and vibration to the operator and extend component life. A lead-free aluminum core is used for the radiator to comply with global environmental requirements.

### Disconnect Switch

For inspection and maintenance, electricity flow from batteries can be shut off with this switch when repairing the machine or checking batteries.





# SPECIFICATIONS



### ENGINE

Model . . . . . Komatsu SAA6D114E-3  
 Type . . . . . Water-cooled, 4-cycle, direct injection  
 Aspiration . . . . . Turbocharged and air-to-air aftercooled  
 Number of cylinders . . . . . 6  
 Bore . . . . . 114 mm **4.49"**  
 Stroke . . . . . 135 mm **5.31"**  
 Piston displacement . . . . . 8.27 ltr **505 in<sup>3</sup>**  
 Gross horsepower\*  
     Gears 1-3 . . . . . 140 kW **187 HP** @ 1900 rpm  
     Gears 4-8VHPC\*\* . . . . . 154 kW **207 HP** @ 1900 rpm  
 Net flywheel horsepower\*\*\*  
     Gears 1-3 . . . . . 134 kW **180 HP** @ 1900 rpm  
     Gears 4-8VHPC\*\* . . . . . 149 kW **200 HP** @ 1900 rpm  
 Peak torque  
     Gears 1-3 . . . . . 830 N/m 84.7 kg•m **612 lb.ft** @ 1450 rpm  
     Gears 4-8 VHPC\*\* . . . . . 975 N/m 99.5 kg•m **719 lb.ft** @ 1450 rpm  
 Torque rise . . . . . 30%  
 Fan . . . . . 6 blade, pusher  
 Air cleaner . . . . . 2-stage, dry-type  
 Electrical . . . . . 24 volt with 90 amp alternator  
 Battery . . . . . 2, low maintenance, 12 volt, 780 cca each

\* Gross HP output for complete engine operating under SAE J1995 conditions  
 \*\* VHPC is available in gears 4-8 forward  
 \*\*\*Net flywheel HP output for standard (SAE J1349) including air cleaner, alternator (not charging), water pump, lubricating oil, fuel pump, muffler and fan. EPA Tier 3 emissions certified.



### TRANSMISSION AND TORQUE CONVERTER

Full power shift transmission with integral free wheeling stator torque converter and lock-up for direct drive.

**Speeds** (at rated engine rpm)

Gear	Forward	Reverse
1st	3.3 km/h <b>2.1 mph</b>	4.3 km/h <b>2.7 mph</b>
2nd	4.7 km/h <b>2.9 mph</b>	8.8 km/h <b>5.5 mph</b>
3rd	6.7 km/h <b>4.2 mph</b>	19.3 km/h <b>12.0 mph</b>
4th	9.7 km/h <b>6.0 mph</b>	38.3 km/h <b>23.8 mph</b>
5th	14.6 km/h <b>9.1 mph</b>	
6th	21.2 km/h <b>13.2 mph</b>	
7th	29.1 km/h <b>18.1 mph</b>	
8th	42.2 km/h <b>26.2 mph</b>	



### BRAKES

Service brakes . . . . . Foot operated, sealed oil disc brakes, hydraulically actuated on four tandem wheels, 13338 cm<sup>2</sup> **2067 in<sup>2</sup>** total braking surface  
 Parking brake . . . . . Manually actuated, spring applied, hydraulically released caliper with transmission interlock



### HYDRAULICS

Load-sensing closed center hydraulics with variable displacement piston pump, short stroke/low effort direct acting control valves with pre-selected maximum flow setting to each function. Double acting anti-drift check valves on blade lift, tip, circle shift, articulation, and leaning wheels.

Output . . . . . 194 ltr/min **51 U.S.gal/min** @ 1900 rpm  
 Standby pressure . . . . . 3.4 Mpa **500 psi**  
 Maximum system pressure . . . . . 20.6 Mpa **3000 psi**



### MOLDBOARD

Hydraulic power shift fabricated from high carbon steel. Includes replaceable end bits. Cutting edge is through hardened.

Dimensions . . . . . 3710 x 660 x 22 mm **12" x 26" x 7/8"**  
 Arc radius . . . . . 432 mm **17"**  
 Cutting edge . . . . . 152 mm x 16 mm **6" x 5/8"**  
 Replaceable/reversible end bits . . . . . 152 mm x 16 mm **6" x 5/8"**



### BLADE RANGE

Circle center shift:  
     Right . . . . . 625 mm **24.11"**  
     Left . . . . . 625 mm **24.11"**  
 Moldboard side shift:  
     Right . . . . . 820 mm **32.3"**  
     Left . . . . . 820 mm **32.3"**  
 Maximum shoulder reach outside rear tires (frame straight)  
     Right . . . . . 2000 mm **78.7"**  
     Left . . . . . 2000 mm **78.7"**  
 Maximum lift above ground . . . . . 505 mm **19.9"**  
 Maximum cutting depth . . . . . 815 mm **32.1"**  
 Maximum blade angle, right or left . . . . . 90°  
 Blade tip angle . . . . . 40° forward, 5° backward



### CIRCLE

Single piece rolled ring forging. Six circle support shoes with replaceable wear surface. Circle teeth hardened on front 180° of circle.

Diameter (outside) . . . . . 1530 mm **60.2"**  
 Circle reversing control hydraulic rotation . . . . . 360°



### DRAWBAR

A-shaped, U-section press formed and welded construction for maximum strength with a replaceable drawbar ball.

Drawbar frame . . . . . 210 x 25 mm **8.3"x 1.0"**

## SPECIFICATIONS



### FRAME

Section, welded unit (w x h)	300 x 300 mm	<b>11.8" x 11.8"</b>
Side plate	250 x 14 mm	<b>9.8" x 0.55"</b>
Vertical section module, front frame:		
Minimum	2140 cm <sup>3</sup>	<b>131 in<sup>3</sup></b>
Maximum	4860 cm <sup>3</sup>	<b>297 in<sup>3</sup></b>
Linear weight per length, front frame:		
Minimum	1697 N/m	<b>116 lb/ft</b>
Maximum	2167 N/m	<b>148 lb/ft</b>



### FRONT AXLE

Type	Solid bar construction welded steel sections	
Ground clearance at pivot	630 mm	<b>24.8"</b>
Wheel lean angle, right or left	20°	
Oscillation, total	32°	



### REAR AXLE

Alloy steel, heat treated, full floating axle with lock/unlock differential.



### TANDEM DRIVE

Oscillating welded box section oil tight housing	580 mm x 221 mm	<b>22.8" x 8.7"</b>
Sprocket drive chain, single strand	50.8 mm	<b>2" pitch</b>
Side wall thickness: Inner	22 mm	<b>0.88"</b>
Outer	19 mm	<b>0.75"</b>
Wheel axle spacing	1524 mm	<b>60"</b>
Tandem oscillation	13° forward and reverse	



### STEERING

Hydraulic power steering providing stopped engine steering meeting SAE J53 and J1511.

Minimum turning radius	6.9 m	<b>22.8"</b>
Maximum steering range, right or left	49°	
Articulation, right or left	23°	



### WHEELS, FRONT AND REAR

Bearings	tapered roller	
Tires	radial, low pressure, tubeless, 17.5R25	
Tire rims (demountable)	13" one-piece rims	



### OPERATOR'S COMPARTMENT

Pivoting control console and tilt steering wheel. Deluxe cloth covered seat and backrest with swing-up armrests. Large glass area for all-around visibility. Rear window electric defroster and rear windshield wiper.



### CAPACITIES (REFILLING)

Fuel tank	340 ltr	<b>89.8 U.S.gal</b>
Cooling system	39.5 ltr	<b>10.4 U.S.gal</b>
Crank case	30 ltr	<b>7.9 U.S.gal</b>
Transmission	45 ltr	<b>11.9 U.S.gal</b>
Final drive	14 ltr	<b>3.7 U.S.gal</b>
Tandem housing (each)	83 ltr	<b>21.9 U.S.gal</b>
Hydraulic system	45 ltr	<b>26.4 U.S.gal</b>
Circle reverse housing	5 ltr	<b>1.3 U.S.gal</b>
With slip clutch	7 ltr	<b>1.8 U.S.gal</b>



### OPERATING WEIGHT (APPROXIMATE)

Includes lubricants, coolant, full fuel tank, 546 kg **1,200 lb** front weight:

Total	15400 kg	<b>33,951 lb</b>
On rear axle	11300 kg	<b>24,912 lb</b>
On front axle	4100 kg	<b>9,039 lb</b>

With front mounted scarifier:

Total	16040 kg	<b>35,361 lb</b>
On rear axle	11405 kg	<b>25,142 lb</b>
On front axle	4635 kg	<b>10,219 lb</b>

With rear mounted ripper and front push plate:

Total	17145 kg	<b>37,801 lb</b>
On rear axle	12400 kg	<b>27,362 lb</b>
On front axle	4745 kg	<b>10,449 lb</b>



### INSTRUMENT

Electric monitoring system with diagnostics:

Gauges:

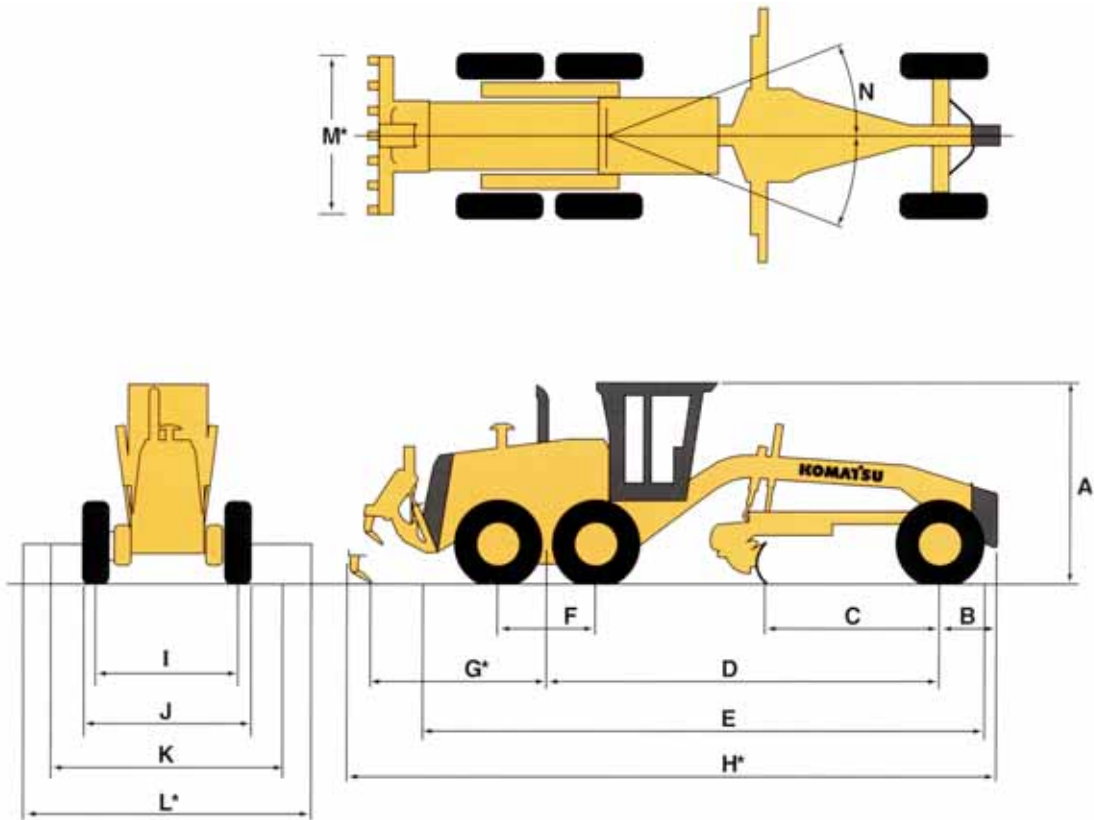
Standard	articulation, engine coolant temperature, fuel level, speed meter, T/M shift indicator, torque converter oil temperature, hourmeter
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Warning lights:

Standard	battery charge, blade float, brake oil pressure, directional indicator, engine oil pressure, heater signal, lift arm lock, parking brake, differential lock and torque converter oil temperature
Optional	blade accumulator, differential oil temperature, high beam, working lights



**DIMENSIONS**



A	Height: Low Profile Cab: High Profile Cab:	3120 mm 3350 mm	10' 3" 11' 0"
B	Center of front axle to counterweight	1075 mm	3' 6"
C	Cutting edge to center of front axle	2600 mm	8' 6"
D	Wheel base to center of tandem	6070 mm	19'11"
E	Front tire to rear bumper	8715 mm	28' 7"
F	Tandem wheelbase	1535 mm	5' 0"
G*	Center of tandem to back of ripper	2750 mm	9' 0"
H*	Overall length	10280 mm	33' 9"
I	Track of gauge	2130 mm	7' 0"
J	Width of tires	2550 mm	8' 4"
K	Width of standard moldboard	3710 mm	12' 0"
L*	Width of optional moldboard	4320 mm	14' 0"
M*	Ripper beam width	2305 mm	7' 7"
N	Articulation, left or right		23°

\*option



## STANDARD EQUIPMENT

### Engine and Related Items

- Accelerator and electric throttle control
- Double element air cleaner and dust indicator.
- Engine, Komatsu SAA6D114E-3, EPA stage 3 emissionized, turbocharged and air-to-air aftercooled, standard VHPC, 180-200 net horsepower
- Fuel line pre-filter
- Hood-sides for engine compartment

### Electrical Systems

- Alarm, back-up
- Alternator, 90 amp, 24V
- AM/FM radio with cassette
- Batteries, 2 x 12V 1146 cca each
- Dome light, cab
- Horn, electric
- Lights, back-up, stop, tail, directional, headlights (2 halogen type, front cab mounted)
- Warning lights, parking brake, differential lock, blade float, engine oil pressure, battery charge, brake oil pressure, transmission system electric circuit monitor, lift arm lock, differential oil temperature, high beam front lamp
- Working lights (2 front for blade, and 2 additional for rear)

### Operator Environment

- Air conditioning with heater/defroster
- Cab, low profile enclosed ROPS/FOPS level 2 with safety tinted glass, hinged lower front cab windows with wiper and washer, electric defroster rear window
- Console, adjustable with instrument panel, electronic monitoring system
- Mirrors, interior cab, right and left exterior mirrors
- Seat, deluxe suspension adjustable cloth with retractable seat belt
- Sound suppression, cab and floor mat
- Wipers, upper front and rear (2 speed)

### Power Train

- Axle, rear full floating, planetary type
- Service brakes, fully hydraulic oil disc
- Brake, parking, spring applied, hydraulic release, disc type
- Differential, lock/unlock, rear
- Tires and rims: 17.5R25 radials on 13" three-piece rims
- Transmission, full power shift with torque converter (8F-4R) and lock-up

### Work Equipment and Hydraulics

- Circle, drawbar mounted, 360° rotation w/hydraulic blade lift and circle side shift
- Circle slip clutch
- Float system, electric for blade
- Hydraulic system, closed center, load sensing
- Hydraulic blade side shift and hydraulic tilt w/anti-drift check valves. Maximum moldboard angle position 90° right & left
- Steering, full hydraulic w/tilt steering wheel plus leaning front wheels and frame articulation w/anti-drift check valves
- 8-station control valve bank

### Other Standard Equipment

- KOMTRAX™ Wireless Monitoring System
- Manuals, operators' and service parts
- Paint, Komatsu standard color
- Steps and handrails, rear, right, and left-side
- Transmission guard
- Vandalism protection includes lockable access to radiator, fuel tank, hydraulic tank, and engine side covers



## OPTIONAL EQUIPMENT

- Accumulators, anti-shock for blade lift
- Cab, high profile with ROPS/FOPS level 2
- Counterweight, additional 190 kg **420 lb**
- Headlights and directional signals, bar mounted ILO cab mounted)
- Hitch, rear—not w/ripper
- Hydraulic control valves — right (1 additional)—left (2 additional)
- Independent blade float, RH and LH
- Less standard counterweight
- Moldboard, 3710 mm x 660 mm x 22 mm **12' x 26" x 7/8"** with replaceable end bits, through-hardened cutting edges 152 mm x 16 mm **6" x 5/8"**
- Moldboard 4320 mm x 660 mm x 22 mm **14' x 26" x 7/8"**
- No-spin rear differential
- Overlay end bits
- Pre-cleaner, Turbo II
- Pusher plate, additional—1099 kg **2,422 lb**
- Ripper, assembly, rear mounted
- Ripper shanks and points, 2 additional
- Scarifier, assembly, 11-shank type
- Scarifier, shanks and points (11)
- Tires and rims, 14.00-24 10TL (G2) tubeless bias tires on 10" rims (6)
- Tool box w/lock
- Warning light, amber colored rotating beacon, cab roof mounted
- 12V converter



## ALLIED ATTACHMENTS

- 2D and 3D automatic machine control systems — TOPCON

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# KOMATSU®