

KOMATSU®

GD655-5

NET HORSEPOWER
163 kW **218 HP** @ 2100 rpm

OPERATING WEIGHT
17916 kg **39,505 lb**

BLADE WIDTH
4.32 m **14'**

GD
655

MOTOR GRADER



Photo may include optional equipment.

WALK-AROUND

New Automatic Dual-mode Transmission Includes a Non-stall Function

Makes smooth low-speed operation automatic

20% Less Fuel Consumption with Two Mode Operation

Fuel consumption decreased by 20% compared with Komatsu's conventional model typical test data.

Operator Friendly Cab

All-around visibility with low operation noise levels.

More Comfortable Operator Environment

- The new hexangular cab with front Y pillar and rear layout side pillar affords all-around visibility of the moldboard and front

See page 9.

- Low operating noise – Noise levels in operating conditions are significantly lowered

See page 8.

Fuel Economy Features

- Selectable working modes, <P mode> and <E mode>
See page 4.
- Operator can choose <Auto mode> or <Manual mode> with the new automatic dual-mode transmission
See page 5.



KOMTRAX®

KOMTRAX equipped machines can send location, SMR and operation maps to a secure website utilizing wireless technology. Machines also relay error codes, cautions, maintenance items, fuel levels, and much more.

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163 kW 218 HP @ 2100 rpm

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Maximum Productivity

- Environment friendly Komatsu SAA6D107E-1 engine complies with EPA Tier 3 emissions See page 4.
- Smooth operation without the engine stalling at low speed and maximized productivity with the automatic dual-mode transmission See page 5.
- Excellent blade controllability through a Closed-center Load Sensing (CLSS) hydraulic system with multi-functional control valves with float and Pilot Check Valve (PCV) See page 6.
- Aggressive moldboard angles are possible with the long wheelbase See page 6.
- Steering wheel and conventional mechanical levers provide predictable, low effort control See page 6.

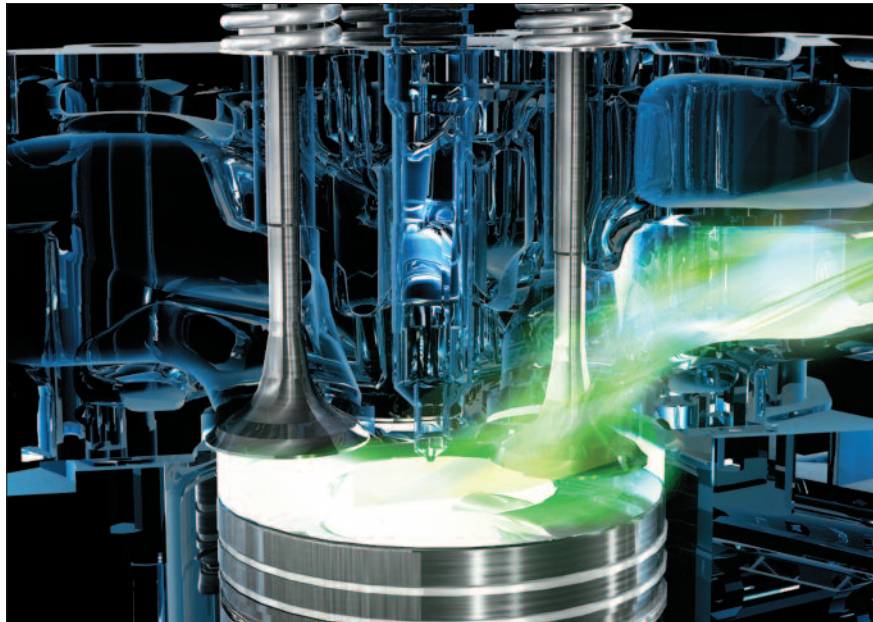


Easy Serviceability

- Easy radiator cleaning with a manually actuated reversing fan See page 7.
- Easy fueling from ground level See page 7.
- Large hinged lockable doors provide easy access to the engine and radiator See page 7.
- KOMTRAX®

Photos may include optional equipment.

ECOLOGY FEATURES



Komatsu Technology



Komatsu develops and produces all major components, such as engines, electronics and hydraulic components in-house.

Since all components can be matched, efficiencies are increased achieving high levels of productivity and ecology. With this "Komatsu Technology", and through customer feedback, Komatsu is achieving great advancements in technology.

The result is a new generation of high performance and environment friendly machines.

High Performance SAA6D107E-1 Komatsu Engine

Electronic heavy duty common rail fuel injection system provides optimum combustion of fuel. This system also provides fast throttle response to improve the machine's power and hydraulic response.

NET POWER: 163 kW 218 HP

Low Emission Engine

This engine is EPA Tier 3 and EU Stage 3A emission regulations certified, without sacrificing power or machine productivity.

Hydraulic Driven, Manually Actuated Reversing Cooling Fan

Reduces power loss in lower temperature operations and reduces engine noise.

Outstanding Fuel Economy

A significant reduction in fuel consumption is achieved by the control of the engine speed.

Fuel consumption decreased by 20%
(compared with GD655-3 typical test data)

2-Mode 3-Stage VHPC

The system allows selection of the appropriate mode between <P> or <E> 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 demands.

• E mode

This mode is selected for maximum economy and lighter work applications.

This feature provides the appropriate power with better fuel consumption.

	kW (HP)			
	P		E	
	AUTO	MANUAL	AUTO	MANUAL
F1	134	134	108	108
F2	(180)	(180)	(145)	(145)
F3				
F4	149	149	134	134
F5	(200)	(200)	(180)	(180)
F6				
F7	163	163	149	149
F8	(218)	(218)	(200)	(200)
R1	134	134	108	108
R2	(180)	(180)	(145)	(145)
R3	149	149	134	134
R4	(200)	(200)	(180)	(180)

DUAL MODE TRANSMISSION

Converter Drive: Designed to Provide Power and Control

Komatsu Power Shift Transmission

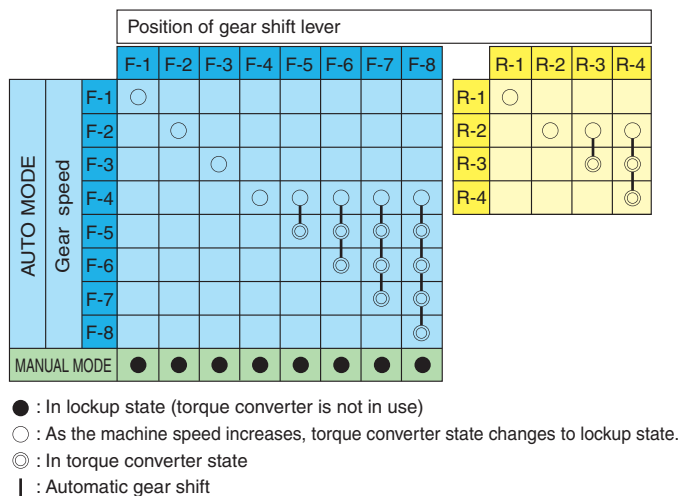
is designed and built specifically for Komatsu graders. The transmission provides on-the-go, full power shifting as well as inching capability and automatic shifting in the higher ranges.

Lockup Torque Converter (Auto Mode)

or direct drive (manual mode); the operator chooses the optimum transmission set-up for the job at hand. If power for tough grading or low speed fine control is required, the operator can select the auto mode. With the torque converter, the operator has tremendous tractive effort and control. More importantly, you can achieve fine control at low speed without shifting or using an inching pedal. Auto mode is available in gears 1-8. If high transport speed or high speed for snow removal is needed, the operator can select manual drive. The operator has the best of both worlds.

Gear Selections

Eight forward speeds and four reverse speeds give the operator a wide operating range. With four gears when in auto 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.



Electronic Overspeed Protection

helps prevent engine and transmission damage from premature downshifting and grade-induced overspeeding.

Electronic Transmission Control

produces smooth shifting, which enables the operator to maintain a uniform 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.

Low Effort Inching Pedal

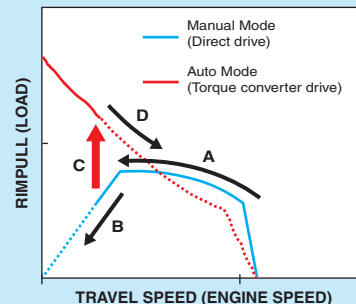
gives the operator precise control of machine movement. This is especially important for operators who have previous experience operating a manual mode motor grader.



New Automatic Dual-mode Transmission

Dual-mode Transmission with a New Function

The combination of manual mode and auto mode is very effective for low-speed smooth operation by avoiding engine stalling.



- A If the load increases, the engine speed will slow down
- B If the load increases further, the engine may stall
- C Just before the engine stalls, it automatically changes to auto mode (with torque converter) to avoid stalling
- D When the load decreases and travel speed has recovered, it automatically returns to manual mode

ADVANCED CONTROL FEATURES

Closed-center Load Sensing (CLSS) Hydraulic System

The variable displacement pump idles at low output. When it senses a load requirement, the pump supplies flow and pressure quickly to match the demand. The result is less hydraulic system heat, quick response and lower fuel consumption. The bottom line is greater efficiency with this CLSS hydraulic system.



Implement Control Valves

Designed and built by Komatsu specifically for motor graders, the valves 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

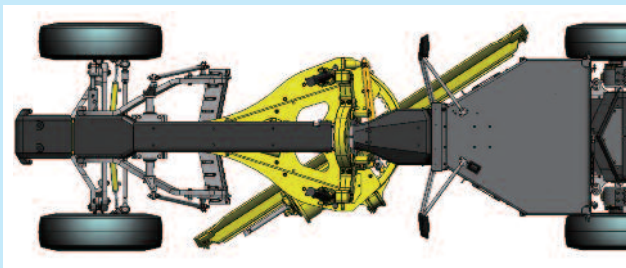
When the operator uses several controls at the same time, flow is proportional to ensure several implements can operate simultaneously.

Constant Implement Speed

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

Versatile Moldboard Geometry

Komatsu graders feature a 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 and aggressive blade angle. Ample clearance between the heel of the blade and mainframe, even with the toe sharply angled down.



Aggressive moldboard angle

Aggressive Moldboard Angles

A long wheelbase 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, clay or for snow and ice removal.

Rugged Construction

The A-frame drawbar is a 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.

Protection System

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

MAINTENANCE FEATURES

Operator Friendly Serviceability

Easy Access to Service Areas

- Large hinged lockable doors are standard and provide easy access to the engine and radiator service points. Spin-on filters can be changed quickly.
- The fuse panel is located in the cab. Circuits and fuse sizes are clearly identified.
- The tandem oil check point is conveniently located at the end of the tandem
- The service meter is located in the electronic monitoring system
- Refueling from the ground is easy
- Engine oil, hydraulic oil and coolant drains are easily accessible

Easy Radiator Cleaning with a Manually Actuated Reversing Fan

Dust stuck to the radiator and cooler fins is blown off with reversal of the hydraulic driven fan.

Modular Power Train Components

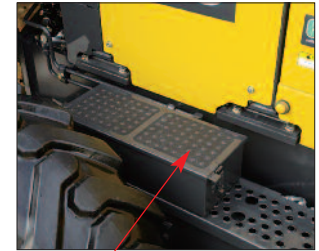
With a modular design, you can remove the engine, transmission or final drives independently for quick service.

Character Display is Easy to See

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



Reversing Fan



Tool Box



Spin-on Transmission Filter



Ground Level Fueling

Adjustment-free Wet Disc Brakes

Komatsu designs and manufactures the multiple-disc brakes that are completely sealed and adjustment-free. The brakes are immersed in oil, 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.

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

The batteries can be disconnected with this switch for inspection and maintenance when repairing the machine or checking batteries.



Disconnect Switch

WORKING ENVIRONMENT

A Comfortable Working Environment in a Roomy Cab



**Dynamic noise level
at operator ear: 74 dB(A)**
(ISO 6396)

Roomy Interior

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

Suspension Seat

The seat features fold-up armrests and a retractable seat belt. The fabric covered 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 the throttle switch is temporarily cancelled when operating the brake/acceleration pedal in Auto mode.

Electronic Monitoring System

The 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 operator's preference.

Air Conditioner

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

Hexangular Cab

The cab is a low profile enclosed ROPS/FOPS (SAE J1040, J231; ISO 3471, 3449) Level 2.



Roll-Over Protective Structure (ROPS) Cab equipped with defroster and intermittent wipers

Seeing Is Believing



Excellent Visibility from cab

All-around Visibility

Seeing is believing in the new patented hexangular cab with front Y-shape pillar and rear layout side pillar. Exceptional visibility helps increase operator confidence and productivity in all grader applications. The well positioned blade linkage provides an unobstructed view of the moldboard and front work area. The tapered engine hood provides an improved view to the rear of the machine, plus the rear ripper.



View to the rear

SPECIFICATIONS



ENGINE

Model KOMATSU SAA6D107E-1*
 Type Water-cooled, 4-cycle, direct injection
 Aspiration Turbocharged and air-to-air aftercooled
 Number of cylinders 6
 Bore 107 mm **4.21"**
 Stroke 124 mm **4.88"**
 Piston displacement 6.69 ltr **408 in³**
 Gross horsepower (Manual mode)
 P-mode
 Gear 1-3 136 kW **183 HP**@2000 rpm
 Gear 4-6 151 kW **203 HP**@2000 rpm
 Gear 7-8 165 kW **221 HP**@2100 rpm
 E-mode
 Gear 1-3 110 kW **148 HP**@2000 rpm
 Gear 4-6 136 kW **183 HP**@2000 rpm
 Gear 7-8 151 kW **203 HP**@2000 rpm
 Net flywheel horsepower** (Manual mode)
 P-mode
 Gear 1-3 134 kW **180 HP**@2000 rpm
 Gear 4-6 149 kW **200 HP**@2000 rpm
 Gear 7-8 163 kW **218 HP**@2100 rpm
 E-mode
 Gear 1-3 108 kW **145 HP**@2000 rpm
 Gear 4-6 134 kW **180 HP**@2000 rpm
 Gear 7-8 149 kW **200 HP**@2000 rpm
 Max. torque 941 Nm 96.0 kg·m **694 lb.ft.**@1450 rpm
 Torque rise 31 %
 Fan speed Max. 1500 rpm
 Air cleaner 2-stage, dry-type
 Electrical 24 Volt with 90 Amp alternator
 Battery 2, low maintenance plus, 12 Volt, 1146 CCA

* EPA Tier 3 and EU Stage 3A emissions certified

** Net flywheel HP output for standard SAE J1349 including air cleaner, alternator (not charging), water pump, lubricating oil, fuel pump, muffler and fan running at minimum speed.



TRANSMISSION AND TORQUE CONVERTER

Full power shift transmission with integral free-wheeling stator torque converter and lockup.

Speeds (at rated engine speed)

Gear	Forward		Reverse	
	km/h	mph	km/h	mph
1st	3.4	2.1	4.5	2.8
2nd	5.0	3.1	9.2	5.7
3rd	7.0	4.3	20.3	12.6
4th	10.2	6.3	40.3	25.0
5th	15.4	9.6		
6th	22.3	13.9		
7th	30.6	19.0		
8th	44.3	27.5		



FRONT AXLE

Type Solid bar construction welded steel sections
 Ground clearance at pivot 620 mm **2'0"**
 Wheel lean angle, right or left 16°
 Oscillation, total 32°



REAR AXLE

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



TANDEM DRIVE

Oscillating welded box section 520 mm x 202 mm **1'8" x 8"**
 Side wall thickness: Inner 22 mm **0.87"**
 Outer 19 mm **0.75"**
 Wheel axle spacing 1525 mm **5'0"**
 Tandem oscillation 11° forward, 13° reverse



WHEELS, FRONT AND REAR

Bearings Tapered roller
 Tires 17.5R25
 Tire rims (demountable) 13" one-piece rims



STEERING

Hydraulic power steering providing stopped engine steering meeting SAE J53 and J1151.

Minimum turning radius 7.4 m **24'3"**
 Maximum steering range, right or left 49°
 Articulation, right or left 25°



BRAKES

Service brake Foot operated, sealed wet disc brakes, hydraulically actuated on four tandem wheels, 13691 cm² **2,122 in²** total braking surface
 Parking brake Manually actuated, spring applied, hydraulically released caliper with transmission interlock



FRAME

Front Frame Structure

Height 300 mm **11.8"**
 Width 300 mm **11.8"**
 Thickness 14 mm **0.55"**



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"**



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 **5'0"**
 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 4320 x 660 x 22 mm **14' x 26" x 0.87"**
 Arc radius 329 mm **1'1"**
 Cutting edge 152 x 16 mm **6" x 0.63"**



BLADE RANGE

Circle center shift: Right	590 mm 1'11"
Left	590 mm 1'11"
Moldboard side shift:	
Right	820 mm 2'8"
Left	820 mm 2'8"
Maximum shoulder reach outside rear tires (frame straight)	
Right	1940 mm 6'4"
Left	1940 mm 6'4"
Maximum lift above ground	480 mm 1'7"
Maximum cutting depth	615 mm 2'0"
Maximum blade angle, right or left	90°
Blade tip angle	40° forward, 5° backward



HYDRAULIC SYSTEM

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	200 ltr/min 52.8 U.S.gal/min @ 2000 rpm
Standby pressure	3.4 MPa 35 kg/cm ² 500 psi
Maximum system pressure	20.6 MPa 210 kg/cm ² 3,000 psi



INSTRUMENTATION

Electric monitoring system with diagnostics:

Gauges:
 Standard articulation, engine coolant temperature, fuel level, speedometer, T/M shift indicator, engine tachometer torque converter oil temperature

Warning lights/Indicator:
 Standard battery charge, brake oil pressure, blade float, 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, fan reverse, rpm set, high beam, working lights

Optional blade accumulator



OPERATING WEIGHT (APPROXIMATE)

Standard configuration without pushplate

Total	16035 kg 35,351 lb
On rear wheels	11582 kg 25,534 lb
On front wheels	4453 kg 9,817 lb

With rear mounted ripper and front push plate:

Total	17916 kg 39,505 lb
On rear wheels	12673 kg 27,944 lb
On front wheels	5243 kg 11,561 lb

With mid-mounted scarifier, without front pushplate:

Total	16631 kg 36,665 lb
On rear wheels	11661 kg 25,708 lb
On front wheels	4970 kg 10,957 lb

- Front pushplate weight 1075 kg **2,371 lb**
- Operating weight based on the standard machine configuration with 17.5R25 tires, 14' moldboard, full fuel tank, coolant, lubricants, and operator



SERVICE REFILL CAPACITIES

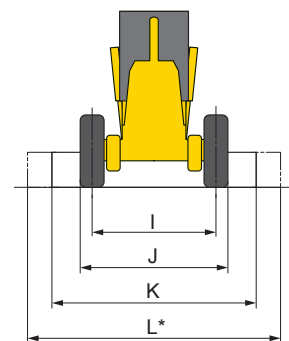
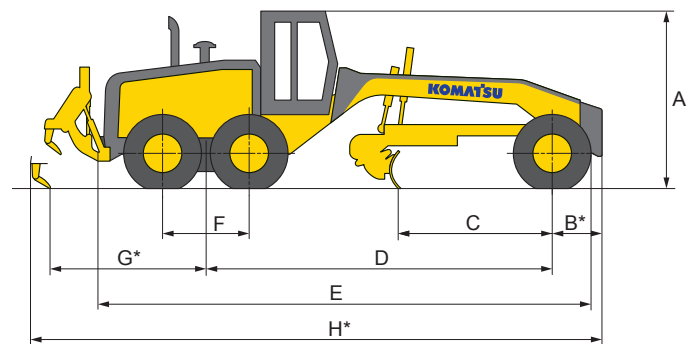
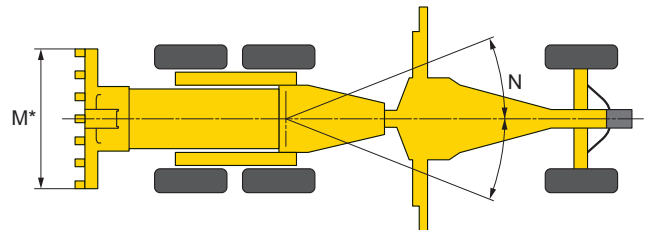
Fuel tank	416 ltr	109.9 U.S. gal
Cooling system	24.9 ltr	6.6 U.S. gal
Crank case	23.1 ltr	6.1 U.S. gal
Transmission	45 ltr	11.9 U.S. gal
Final drive	17 ltr	4.5 U.S. gal
Tandem housing (each)	57 ltr	15.1 U.S. gal
Hydraulic system	69 ltr	18.2 U.S. gal
Circle reverse housing	7 ltr	1.8 U.S. gal



DIMENSIONS

A	Height, low profile cab	3200 mm	10'6"
B*	Center of front axle to counterweight (Pusher)	927 mm	3'0"
C	Cutting edge to center of front axle	2580 mm	8'6"
D	Wheelbase to center of tandem	6480 mm	21'3"
E	Front tire to rear bumper	9205 mm	30'2"
F	Tandem wheelbase	1524 mm	5'0"
G*	Center of tandem to ripper point on ground	2780 mm	9'1"
H*	Overall length	10575 mm	34'8"
I	Tread	2060 mm	6'9"
J	Width over tires	2485 mm	8'2"
K*	Width of 12' moldboard	3710 mm	12'2"
L*	Width of 14' moldboard	4320 mm	14'2"
M*	Ripper beam width	2305 mm	7'7"
N	Articulation, left or right	25°	

*optional





STANDARD EQUIPMENT

Engine and Related Items

- Accelerator and electric throttle control
- Air cleaner, double element with dust indicator
- Air intake extension
- Antifreeze -30°C -22°F
- Hydraulic driven, reversing, cooling fan, blower type, plastic blade, with fan guard
- Engine: Komatsu SAA6D107E-1, EPA Tier 3 certified, turbocharged and air-to-air aftercooled, standard VHPC, 145-218 net horsepower
- Fuel line pre-filter

Electrical System

- Alarm, back-up
- Alternator, 90 Amp, 24V
- Batteries, extreme duty, 2 x 12V, 1146 CCA each
- Battery disconnect switch
- Dome light, cab
- Horn, electric
- Indicator lights: 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, transmission system electrical circuit monitor, differential oil temperature
- Lights: back-up, stop, tail, directional, headlights (2 halogen type, front bar mounted), work lights (front (4), rear (2), (4) cab mounted flood-type)
- Starter 5.5kW

Operator Environment

- Cab: low profile with ROPS/FOPS (SAE J1040, J231; ISO 3471, 3449) Level 2 with tinted windows, front, rear and door intermittent wiper/washers rear window electric defroster
- Air conditioner (R134a) with heater
- Console, adjustable with instrument panel monitoring system
- Mirrors: interior cab, right and left exterior
- Seat, suspension cloth type with retractable seat belt
- Sound suppression, 74 dB(A) at operator's ear with floormat
- 12V (10A) power port
- AM/FM radio

Power Train

- Dual mode Transmission (8F-4R) power shift, direct drive and torque converter with auto shift
- Axle, rear full-floating, planetary-type reduction
- Service brakes, fully hydraulic wet disc
- Parking brake, spring applied, hydraulic release, dry disc
- Differential, manual lock/unlock
- Tires and rims: 17.5R25 radials on one-piece 13" rims (6)

Work Equipment and Hydraulics

- Circle, drawbar mounted, 360° rotation with blade lift and circle side shift with anti-drift check valves
- Circle slip clutch
- Greaseless circle wear plates
- Hydraulic system, closed-center, load sensing
- Steering, full hydraulic with tilt steering wheel plus leaning front wheels and frame articulation w/anti-drift check valves
- Hydraulic control valve, 10 sections
- Blade lift float detent type, LH and RH
- Blade accumulators

Other Standard Equipment

- Steps and handrails, rear, right, and left
- Vandalism protection includes lockable fuel tank, hydraulic tank, battery cover, and engine side covers
- Tool box with lock
- KOMTRAX® (2.5)
- Rear hitch
- Turbo II precleaner
- Ripper—provision for
- Scarifier—provision for (less hoses)



OPTIONAL EQUIPMENT

- Moldboard: 3710 mm x 660 mm x 22 mm **12' x 26" x 0.87"** with replaceable end bits, 152 mm x 16 mm **6" x 0.63"** through-hardened cutting edges and 5/8" hardware
- Moldboard: 4320 mm x 660 mm x 22 mm **14' x 26" x 0.87"** with replaceable end bits, 152 mm x 16 mm **6" x 0.63"** through-hardened cutting edges and 5/8" hardware
- Pusher plate (for use with rear mounted ripper/scarifier assembly)
- Rear-mounted ripper/scarifier assembly includes (3) shanks or (9) scarifier shanks can be inserted into the available slots
- Mid-mounted scarifier assembly (includes 11 shanks and replaceable points)
- Amber colored warning light
- 610 mm **2'** LH/RH moldboard extensions
- Kit provision for a single function front attachment

Standard equipment may vary for each country, and this specification sheet may contain attachments and optional equipment that are not available in your area. Please consult your Komatsu distributor for detailed information.

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