

# KOMATSU

## GD705-5



Photos may show equipments not available in your area

Motor grader

**Engine power**

194 kW / 260 HP @ 1950 rpm

**Operating weight**

19300 kg (with ripper 22150 kg)

**Blade length**

4.32 m

# Walk-around



Engine power

**194 kW / 260 HP @ 1950 rpm**

Operating weight

**19300 kg (with ripper 22150 kg)**

Blade length

**4.32 m**

# High productivity, low fuel consumption and outstanding reliability

## Productivity

- Long wheelbase & short turning radius
- Job proven Komatsu power train
- Ideal weight distribution

## Control

- Outstanding power transmitting system

## Comfort

- Excellent visibility
- Spacious interior

## Serviceability

- Machine monitoring system
- Easy maintenance design

## Komtrax

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

## Ecology & economy

- Engine power mode selection system
- Circumference dynamic noise





# Dash 5 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, Komatsu Dash 5 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.

## Efficient large size grader

The GD705-5 is designed to perform efficient operation. New Hydraulic variable displacement piston pump for reducing pressure loss, improvements in transmission and axles for improving energy saving, and the sophisticated electronic control of the engine operation to achieve optimal energy efficiency.



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Earthwork amount maximum **5.0%** up (P mode)

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Fuel consumption maximum

**5.0%** reduction (P mode)

**15.0%** reduction (E mode)

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\* Compared with the GD705A-4. Fuel consumption varies depending on job conditions.

# 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

Komatsu 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 GD705-5 features lock-up torque converter transmission for pursuing ease of operation. This unique system provides both efficiency of direct drive and controllability of torque converter drive. With this outstanding power transmitting system, the GD705-5 delivers advanced productivity in any applications from fine grading to heavy grading.

## Torque converter features

### High controllability

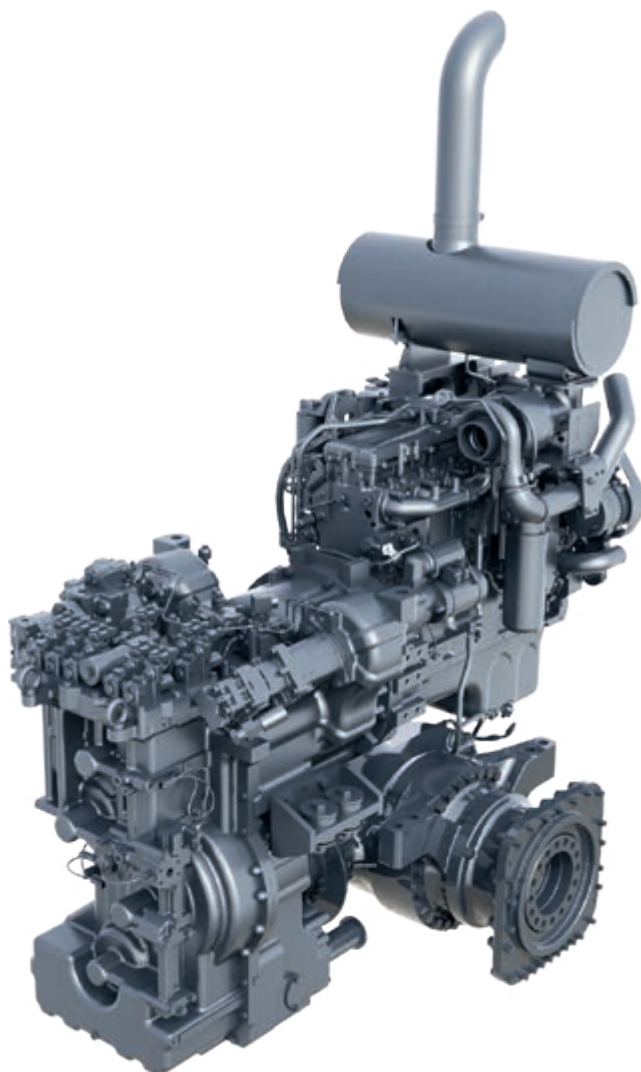
- Eliminates engine stalling and inching pedal operation
- Smooth starting, good controllability in fine grading
- Easy travelling, automatic gear shifting
- Reduce excessive tire slipping

### 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 are two transmission modes 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 F5-F8 and R3-R4 position. Shifting F8 position serves automatic shifting through F4-F8 in response to machine speed.

### Manual mode

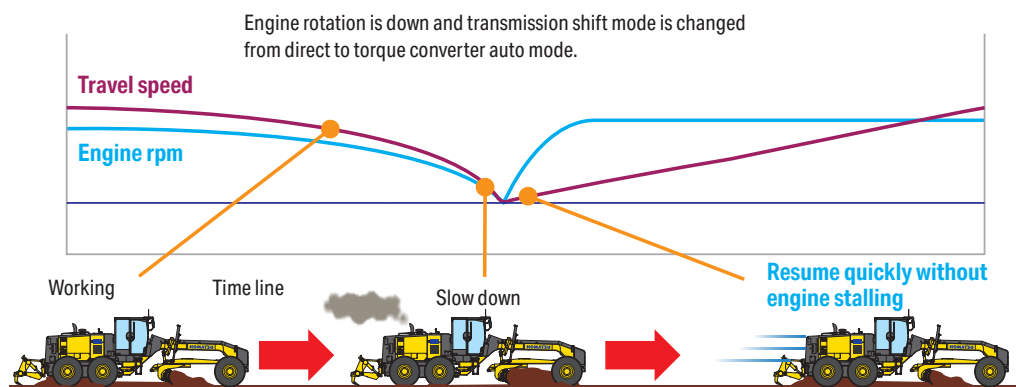
Works like the same way as conventional power shift, by engaging lock up clutch with all gears. This mode maximizes efficiency of direct shifting. In reverse travelling, works the same way as Auto mode, serves less shift lever operation frequency.

	Shift lever position								Shift lever position			
	F1	F2	F3	F4	F5	F6	F7	F8	R1	R2	R3	R4
Auto mode	○	○	○	○	Automatic shifting				○	○	Automatic shifting	
Manual mode	●	●	●	●	●	●	●	●	○	○	Automatic shifting	

● Lock up clutch engaging

## Anti stall

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.



## Creep mode

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 absorbs shift shock and contributes high driving comfort.



# Comfort



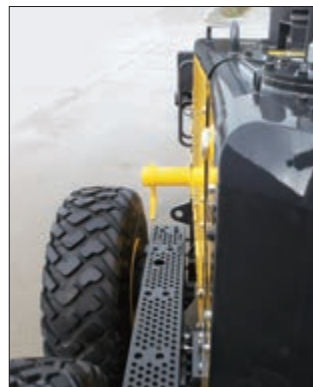
## Excellent visibility

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 (ISO 6396)**

**78 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 12 V DC 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.

# Serviceability

## Machine monitoring system

The machine monitor displays various machine information and allows for various settings of the machine. Displays maintenance information, operation records, etc. By using the switch panel, you can display various user menus on the Liquid Crystal Display (LCD) unit screen and perform the settings of the machine.

## Clear 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.



- ① Gear position
- ② Speed meter
- ③ ECO indicator
- ④ Power mode indicator
- ⑤ Character display
  - Service meter
  - Odometer
  - Maintenance information
  - Error code
  - Fuel consumption information

## Easy maintenance design

### Accessibility to service areas

- Easy and more safety refueling from the ground
- Large hinged service door serves wide inspection area
- Service meter is integrated with the machine monitor
- Distinguishable fuse panel in the cab
- Tandem oil check points is easy to access
- Spin-on filters for quick replacing
- Oil drains located near ground

### Power train components

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

### Disconnect switch

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



Ground refueling



Tool box



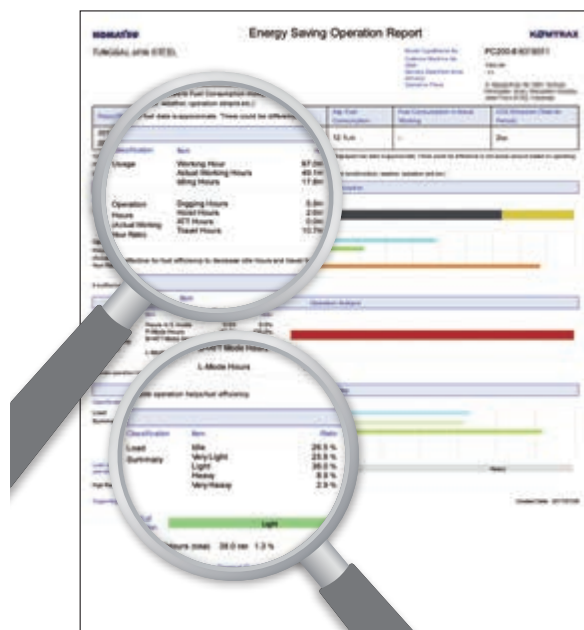
# Komtrax



The Komatsu remote monitoring and management technology provides insightful data about your equipment and fleet in user-friendly format.

## Energy saving operation report

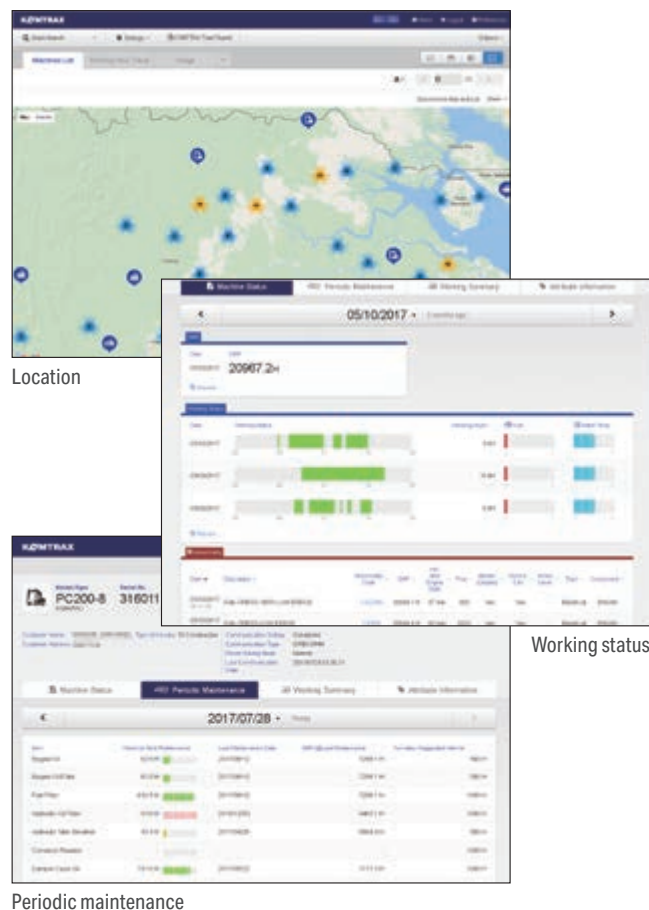
Komtrax delivers the energy-saving operation report based on the operating information such as fuel consumption, load summary and idling time, which helps you efficiently run a business.



This report image is an example of hydraulic excavator

## Equipment management support

Through the web application, a variety of search parameters are available to quickly find information about specific machines based on key factors. Moreover, Komtrax finds out machines with problems from your fleet and shows you through an optimal interface.

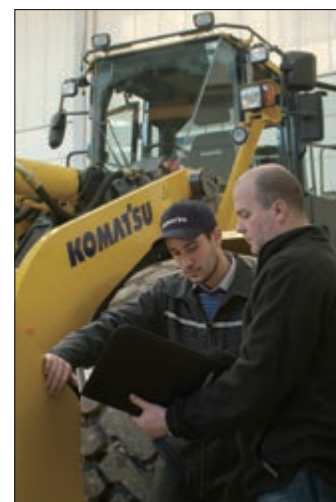


Periodic maintenance

The report contents and data depend on the machine model.

## Optimal strategy for efficient work

The detailed information that Komtrax puts at your fingertips helps you manage your fleet conveniently on the web anytime, anywhere. It gives you the power to make better daily and long-term strategic decisions.



# Ecology & economy



## 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.

## Komatsu technology



Komatsu uniquely develops all major components including total control system, like engines, electronics, and hydraulic components. With this "Komatsu technology" and continuous customer feedback, Komatsu 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 Komatsu SAA6D114E-3 engine provides 186 kW 250 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.



unit: kW(HP)

	P mode	E mode
F1	150 (201)	120 (161)
F2		
F3	165 (221)	150 (201)
F4		
F5		
F6	186 (250)	165 (221)
F7		
F8		
R1	150 (201)	120 (161)
R2		
R3	165 (221)	150 (201)
R4	186 (250)	165 (221)



### Circumference dynamic noise

The dynamic circumference noise is lowered significantly by 7 dB(A) compared with the conventional GD705A-4 by various kind of countermeasures like the hydraulic driven cooling fan, the variable displacement pump and etc.

**Circumference dynamic  
noise level (ISO 6395)**

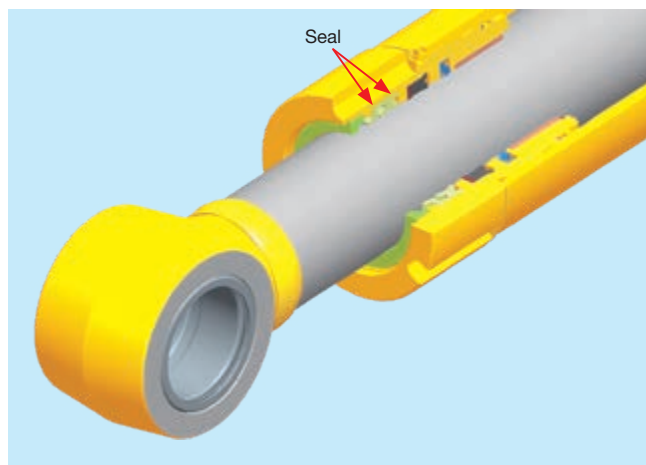
**109 dB(A)**



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.



# Work equipment



## Komatsu genuine work equipment

### Moldboard options

Installs side edge as standard. Flat moldboard surface facilitates smooth rolling off of material. Optional overlay endbit surely protects the side end of the moldboard.

### Front blade

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.





# Komatsu total support



## Komatsu total support

To keep your machine available and minimize operation cost when you need it, the Komatsu distributor is ready to provide variety of support before and after procuring the machine.

### Fleet recommendation

The Komatsu distributor can study customer job site and provide the most optimum fleet recommendation with detailed information to meet all of your application needs when you are considering to buy new machines or to replace the existing ones from Komatsu.



### Product support

The Komatsu distributor secure the certain quality of machine will be delivered.

### Parts availability

The Komatsu distributor is available for emergency inquiry by the customers for genuine, quality guaranteed Komatsu parts.

## Technical support

Komatsu product support service (technical support) are designed to help customer. Komatsu distributor offers a variety of effective services how much Komatsu is dedicated to the maintenance and support of Komatsu machine.

- Preventive Maintenance (PM) clinic
- Oil & wear analysis program

## Repair & maintenance service

The Komatsu distributor offers quality repair service, periodical maintenance, and maintenance service to the customer, utilizing and promoting Komatsu developed programs.

## Komatsu Reman (remanufactured) components

Komatsu Reman products are the result of the implementation of the Komatsu global Reman policy which establishes and agrees to reduce the owning, operating and total Life Cycle Costs (LCC) to Komatsu's customer through prompt delivery, high quality and competitively priced in own remanufactured products (QDC).





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
Stroke .....	135 mm
Piston displacement .....	8.27 l
Gross horsepower (Manual mode)	
P-mode	
Gear 1-2 .....	158 kW / 212 HP / 1950 rpm
Gear 3-5 .....	173 kW / 232 HP / 1950 rpm
Gear 6-8 .....	194 kW / 260 HP / 1950 rpm
E-mode	
Gear 1-2 .....	128 kW / 172 HP / 1950 rpm
Gear 3-5 .....	158 kW / 212 HP / 1950 rpm
Gear 6-8 .....	173 kW / 232 HP / 1950 rpm
Net horsepower (Manual mode)	
P-mode	
Gear 1-2 .....	150 kW / 201 HP / 1950 rpm
Gear 3-5 .....	165 kW / 221 HP / 1950 rpm
Gear 6-8 .....	186 kW / 250 HP / 1950 rpm
E-mode	
Gear 1-2 .....	120 kW / 161 HP / 1950 rpm
Gear 3-5 .....	150 kW / 201 HP / 1950 rpm
Gear 6-8 .....	165 kW / 221 HP / 1950 rpm
Maximum torque .....	1130 Nm / 115 kgfm / 1450 rpm
Torque rise .....	19 %
Fan speed .....	Max. 1700 rpm
Air cleaner .....	2-stage, dry-type
U.S. EPA Tier 3 and EU Stage 3A emissions equivalent.	



Full power shift transmission with torque converter and lock-up.

Speeds (at rated engine speed)

Gear	Forward	Reverse
1st	4.0 km/h	4.5 km/h
2nd	5.6 km/h	8.8 km/h
3rd	7.7 km/h	17.4 km/h
4th	10.9 km/h	34.1 km/h
5th	15.3 km/h	—
6th	21.6 km/h	—
7th	30.0 km/h	—
8th	42.5 km/h	—

Maximum travel speed at engine high idle is 47.9 km/h.



Oscillating welded box section .....	.567 mm × 226 mm
Side wall thickness: Inner .....	.22 mm
Outer .....	.19 mm
Wheel axle spacing .....	1680 mm
Tandem oscillation .....	15° forward, 15° reverse



Type .....	Solid bar construction welded steel sections
Ground clearance at pivot .....	670 mm
Wheel lean angle, right or left .....	15°
Oscillation, total .....	32°



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



Hydraulic power steering providing stopped engine steering meeting ISO 5010.	
Minimum turning radius .....	7.6 m
Maximum steering range, right or left .....	50°
Articulation .....	27°



Service brake . . . . . Foot operated, sealed oil disc brakes,  
hydraulically actuated on four tandem wheels.

Parking brake . . . . . Manually actuated, spring applied, hydraulically released  
caliper.



Front Frame Structure	
Height.....	339 mm
Width.....	300 mm
Side.....	14 mm
Upper, lower .....	22/25 mm



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

Drawbar frame .....	235 mm x 25 mm
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Single piece rolled ring forging. Six circle support shoes with replaceable wear surface. Circle teeth hardened on front 180° of circle.

Diameter (outside) . . . . .	1550 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.....4320 mm × 700 mm × 25 mm

Arc radius.....414 mm

Cutting edge.....203 mm × 16 mm

Replaceable/Reversible side edges.....280 mm × 620 mm × 13 mm

Blade pull

Base GVW.....11040 kgf

With scarifier GVW.....11125 kgf

With ripper GVW.....12880 kgf

Blade down pressure

Base GVW.....9120 kgf

With scarifier GVW.....10565 kgf

With ripper GVW.....10030 kgf



## Blade range

Circle center shift:

Right.....585 mm

Left.....545 mm

Moldboard side shift:

Right.....965 mm

Left.....965 mm

Maximum shoulder reach outside rear tires (frame straight)

Right.....2360 mm

Left.....2290 mm

Maximum lift above ground.....450 mm

Maximum cutting depth.....940 mm

Maximum blade angle, right or left.....90°

Blade tip angle.....45° forward, 7° 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).....165 l/min

Standby pressure.....3.4 MPa / 35 kgf/cm<sup>2</sup>

Maximum system pressure.....24.5 Mpa / 250 kgf/cm<sup>2</sup>



## Instruments

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.....408 l

Cooling system.....24.5 l

Crank case.....27 l

Transmission.....62 l

Final drive.....11.5 l

Tandem housing (each).....79 l

Hydraulic system.....69 l

Circle reverse housing.....10 l



## Operating weight (approx.)

Includes lubricants, coolant, full fuel tank

Total.....19300 kg

On rear wheels.....13800 kg

On front wheels.....5500 kg

With front mounted scarifier:

Total.....20275 kg

On rear wheels.....13905 kg

On front wheels.....6370 kg

With rear mounted ripper and front push plate:

Total.....22150 kg

On rear wheels.....16100 kg

On front wheels.....6050 kg



## Scarifier (optional)

Middle, V-type

Working width.....1350 mm

Scarifying depth, maximum.....210 mm

Scarifier shank holders.....11

Scarifier shank holders spacing.....130 mm



## Ripper (optional)

Ripping depth, maximum.....380 mm

Ripper shank holders.....5

Ripper shank holder spacing.....540 mm

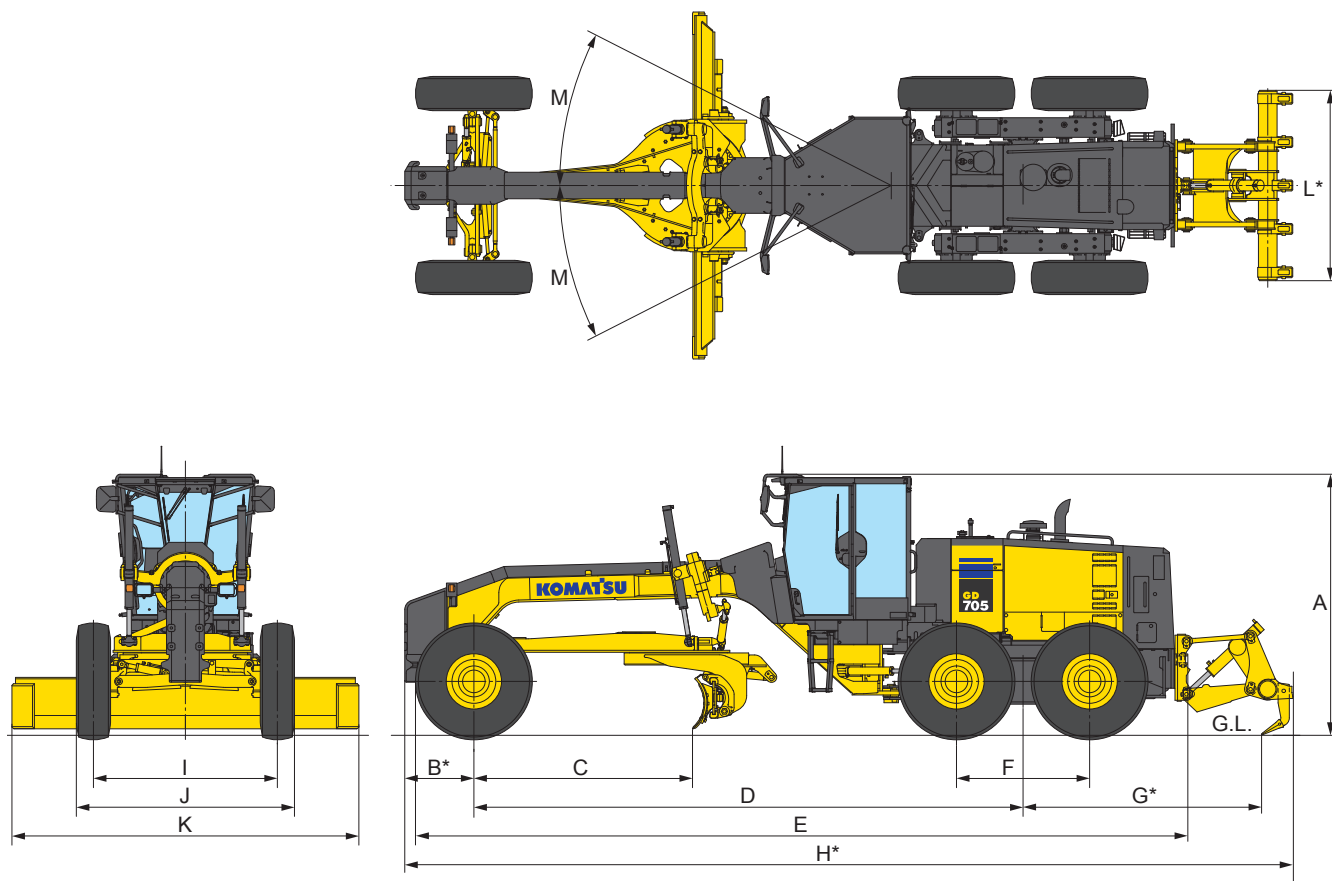
Penetration force.....11220 kgf

Pry out force.....26280 kgf

Machine length increase, beam raised.....870 mm



## Dimensions



A	Height: Low profile cab	3260 mm
B*	Center of front axle to counterweight (Pusher)	860 mm
C	Cutting edge to center of front axle	2700 mm
D	Wheel base to center of tandem	6800 mm
E	Front tire to rear bumper	9600 mm
F	Tandem wheelbase	1680 mm
G*	Center of tandem to back of ripper	2955 mm
H*	Overall length	11050 mm
I	Track of gauge	2290 mm
J	Width of tires	2790 mm
K	Width of standard moldboard	4320 mm
L*	Ripper beam width	2366 mm
M	Articulation, left or right	27°

\*optional



## Wheels, front and rear

Tire	Rim size	Rim structure
16.00-24	10"	Multi-piece
20.5R25	17"	Multi-piece





## Standard equipment

### Engine and related items

- Air intake extension
- Double element air cleaner and dust indicator.
- Engine: Komatsu SAA6D114E-3, turbocharged and air-to-air aftercooled, standard Variable Hosepower Control, 201-250 net horsepower
- Fuel prefilter
- Hood-sides for engine compartment

### Electrical systems

- Alarm, back-up
- Alternator, 24V/60A
- Battery, 2 × 12V/140Ah
- Dome light, cab
- Horn, electric
- Indicators: parking brake, differential lock, lift arm lock, high beam, eco, engine P mode, rpm set, engine oil pressure, battery charge, brake oil pressure, differential oil temperature
- Lights: back-up, stop, tail, directional, headlights (2 halogen type, front bar mounted)
- Speedometer

### Operator environment

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

### Power train

- Axle, rear full floating, planetary type
- Brake, parking, spring applied, hydraulic release, disc type
- Differential, lock/unlock
- Dual mode Transmission (F8-R4) power shift, direct drive and torque converter with auto shift, engine stall prevention function
- Service brakes, fully hydraulic wet disc

### Work equipment and hydraulics

- 9 section hydraulic control valve
- Circle, drawbar mounted, 360° rotation hydraulic blade lift and circle side shift
- Circle slip clutch
- Hydraulic system, closed center, load sensing
- Moldboard: 4320 mm × 700 mm × 25 mm with replaceable end bits, through-hardened cutting edges 203 mm × 16 mm, hydraulic blade side shift and hydraulic tilt with anti-drift check valves. Maximum moldboard angle position 90° right & left
- Steering, full hydraulic with tilt steering wheel plus leaning front wheels and frame articulation w/ anti-drift check valves

### Other standard equipment

- Battery disconnect switch
- Fuel tank, ground level access
- General toolkit
- Painting, Komatsu standard color scheme
- Steps and handrails, rear, right, and left side
- Tool box with lock
- Vandalism protection includes lockable access to fuel tank, battery cover, and engine side covers



## Optional equipment

- 10 section hydraulic control valve
- 12 V (10 A) power port
- Accumulators, anti-shock for blade lift
- Alternator, 24 V/90 A
- AM/FM radio
- Cab mount work lamps (4)
- Extinguisher

- Fog light (front bar mounted)
- Pre-cleaner
- Pusher plate, additional
- Rear under view mirror
- Ripper, assembly, rear mounted
- Ripper shanks and points, 2 additional
- Scarifier, assembly, 11-shank type

- Starter, 11 kW
- Transmission under guard
- Warning light, amber colored rotating beacon, cab roof mounted
- Work lamps: front (4), rear (2)

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