

# KOMATSU®

## GD655-3 Tier 2

**FLYWHEEL HORSEPOWER**

**GD655 123 kW 165 HP**

**VHP 142 kW 190 HP**

**OPERATING WEIGHT**

15000 kg **33,069 lb**

**BLADE LENGTH**

3.71 m **12 ft**

**Laterra**

**GD  
655**

MOTOR GRADER



Photo may include optional equipment.

**GALEO**

# WALK-AROUND

The **advanced monitoring system**

delivers self-diagnostics and can provide historical diagnostic information.



**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** providing good visibility.



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

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

### **Operator comfort**

is a priority with low noise environment, excellent visibility with slim beams, and post and well positioned air conditioner vents.



**Excellent visibility** to the rear. Front and rear glass is angled to prevent dust build up.



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### BLADE LENGTH

3.71 m 12 ft



### **Komatsu SAA6D114E-2 turbocharged and aftercooled**

diesel provides 123 kW **165 HP** to 142 kW **190 HP** for demanding applications.

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



Photo may include optional equipment.

**Brakes** are hydraulically operated wet type multiple-disc and maintenance free. No air system.

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

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

# GALEO

Komatsu's highly productive, innovative technology, environmentally friendly machines built for the 21st century.



# KOMATSU DESIGNED

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



### **Komatsu SAA6D114E-2 engine**

The GD655 gets exceptional power and efficiency from the turbocharged and aftercooled engine. Output is 123 kW **165 HP** (142 kW **190 HP** in higher gears) providing excellent tractive effort with good fuel efficiency.

### **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 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**

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.

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

or direct drive 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 torque converter mode. With the torque converter, the operator has tremendous tractive effort. More importantly, is the fine control at low speed without shifting or using an inching pedal. Torque converter drive is available in gears 1-4. If high transport speed or high speed for snow removal is needed, the operator can select direct drive. The operator has the best of both worlds, torque converter or direct drive at his fingertips.

### **Gear Selections**

Eight forward speeds and four reverse speeds give the operator a wide operating range. With four gear selections below 9.8 km/h **6.1 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 he wishes to operate in and the transmission will then shift automatically between gears five through eight up to the operator selected maximum gear.

### **Low Effort Inching Pedal**

gives the operator, when in direct drive mode, precise control of machine movement. This is especially important for operators who are not familiar with operating a torque converter drive motor grader.



## 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 unmatched 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 one 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.



## The Most Versatile Moldboard Geometry in the Business

Komatsu graders boast the industry's most 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. No extra machines or crew are needed to pick up the windrow. 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 **32.1"** 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 or clay soil and snow and ice removal.

### Rugged Construction

The A-frame drawbar 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 inside the sockets causing wear.

### 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.
- **Circle Drive Slip Clutch** protects the drawbar, circle and moldboard from horizontal shocks when an object is hit near the toe or heel of the blade. This option is most useful in applications where hidden objects are frequently encountered.

# WORKING ENVIRONMENT

## Excellent Visibility

Exceptional visibility helps improve operator confidence and productivity in all grader applications. The large front glass area and well positioned blade linkage provide an unobstructed view of the moldboard and front tires. The large side windows offer a clear view of the moldboard heel and tandem tires. A wide rear window and tapered engine hood provide good visibility to the rear of the machine, especially to 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 hook for a coat.

### Optional Contour Series Suspension Seat

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

### Low Effort

Pedals, hydraulic controls, and transmission shifter reduce operator strain and fatigue. Pedals are angled and raised off the cab floor to make them easy to reach.

### Easy-to-Read Gauges

Electronic monitoring system checks important machine systems and provides the operator with three levels of warning.

### 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. There are handrails on both sides of the cab so the operator need not grasp the steering wheel when entering the cab.

### Optional 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 his/her back even when the front lower window is opened.





### Excellent Serviceability

- Large hinged engine service doors
- Maintenance free all hydraulic disc brakes
- Message center
- Self-diagnostic system



# MAINTENANCE FEATURES

## Superior 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 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 on the left side of the steering console, offering a clear view from the ground.

### Power Train Components

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



### Message Center

The message center monitors the transmission and engine function with computer sensors. There are six modes available with ability to scroll through mode selections.

### Maintenance-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 spring-released and are located at each tandem wheel to eliminate brake loads on the power train and to speed up servicing. A fully hydraulic brake system eliminates all problems associated with air systems. The large braking surface provides dependable braking capability and long life before rebuild.

### Friendly Environment

The rubber mounted engine and transmission transmit less engine noise and vibration to the operator and extend component life.



# SPECIFICATIONS



### ENGINE

Model . . . . . Komatsu SAA6D114E-2  
 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 . . . . . 128.5 kW **172 HP**@1900 rpm  
   Gears 4-8 VHP\*\* . . . . . 147 kW **197 HP**@1900 rpm  
 Net flywheel horsepower\*\*\*  
   Gears 1-3 . . . . . 123 kW **165 HP**@1900 rpm  
   Gears 4-8 VHP\*\* . . . . . 142 kW **190 HP**@1900 rpm  
 Peak torque  
   Gears 1-3 . . . . . 732 N•m **540 lbf•ft** @1400 rpm  
   Gears 4-8 VHP\*\* . . . . . 926 N•m **683 lbf•ft** @1400 rpm  
 Torque rise . . . . . 30 %  
 Fan . . . . . 7 blade, pusher  
 Air cleaner . . . . . 2-stage, dry-type  
 Electrical . . . . . 24 volt with 60 amp alternator  
 Battery . . . . . 2, low maintenance, 12 volt, 780 cca each

\* Gross HP output for complete engine operating under SAE J1995 conditions.  
 \*\* VHP 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.  
 Tier 2 emission 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>	38.4 km/h <b>23.9 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 brake . . . . . Foot operated, sealed oil disc brakes, hydraulically actuated on four tandem wheels, 13338 cm<sup>2</sup> **2,067 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 preselected maximum flow setting to each function. double acting anti-drift check valves on blade lift, tilt, circle shift, articulation, and leaning wheels.

Output . . . . . 194 ltr/min **51 U.S. gal/min** @ 1900 rpm  
 Standby pressure . . . . . 35 kg/cm<sup>2</sup> **500 psi**  
 Maximum system pressure . . . . . 210 kg/cm<sup>2</sup> **3,000 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 0.87"**  
 Arc radius . . . . . 432 mm **17"**  
 Cutting edge . . . . . 152 x 16 mm **6" x 0.63"**  
 Replaceable/reversible end bits . . . . . 152 x 16 mm **6" x 0.63"**



### 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 **11.8" x 11.8"**  
 Side plate . . . . . 250 x 14 mm **9.8" x 0.55"**  
 Vertical section module, front frame:  
   Minimum . . . . . 2140 cm<sup>3</sup> **131 in<sup>3</sup>**  
   Maximum . . . . . 4860 cm<sup>3</sup> **297 in<sup>3</sup>**  
 Linear weight per length, front frame:  
   Minimum . . . . . 173 kg/m **116 lb/ft**  
   Maximum . . . . . 221 kg/m **148 lb/ft**



## FRONT AXLE

Type . . . . . Solid bar construction welded steel sections  
 Ground clearance at pivot . . . . . 630 mm **24.8"**  
 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 **22.8" x 8.7"**  
 Sprocket drive chain, single strand . . . . . 31.75 mm **1.25"** pitch  
 Side wall thickness: Inner . . . . . 22 mm **0.88"**  
                                   Outer . . . . . 19 mm **0.75"**  
 Wheel axle spacing . . . . . 1535 mm **60.4"**  
 Tandem oscillation . . . . . 13° forward, 13° reverse



## STEERING

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

Minimum turning radius . . . . . 6.9 m **22' 8"**  
 Maximum steering range, right or left . . . . . 49°  
 Articulation, left or right . . . . . 23°



## WHEELS, FRONT AND REAR

Bearings . . . . . tapered roller  
 Tires . . . . . low pressure, tubeless, 14.00 x 24, 12 ply rating-G2  
 Tire rims (dismountable) . . . . . 10.00 DC x 24



## OPERATOR'S COMPARTMENT

Pivoting control console and tilt steering wheel. Deluxe suspension cloth covered seat and backrest with swing-up armrests. Large glass area for all-around visibility.



## CAPACITIES

Fuel tank . . . . .	.340 ltr	<b>89.8 U.S. gal</b>
Cooling system . . . . .	.45 ltr	<b>11.9 U.S. gal</b>
Crank case . . . . .	.19 ltr	<b>5.0 U.S. gal</b>
Transmission . . . . .	.45 ltr	<b>11.9 U.S. gal</b>
Final drive . . . . .	.12 ltr	<b>3.2 U.S. gal</b>
Tandem housing (each) . . . . .	.83 ltr	<b>21.9 U.S. gal</b>
Hydraulic system . . . . .	.85 ltr	<b>22.5 U.S. gal</b>
Hydraulic tank . . . . .	.45 ltr	<b>11.9 U.S. gal</b>
Circle reverse housing . . . . .	.5 ltr	<b>1.3 U.S. gal</b>
Optional with slip clutch . . . . .	.7 ltr	<b>1.8 U.S. gal</b>



## OPERATING WEIGHT (APPROXIMATE)

Includes lubricants, coolant, full fuel tank, operator, ripper, and push plate.

Total . . . . .	15000 kg	<b>33,069 lb</b>
On rear wheels . . . . .	10730 kg	<b>23,655 lb</b>
On front wheels . . . . .	4270 kg	<b>9,414 lb</b>



## INSTRUMENT

Electric monitoring system with diagnostics:

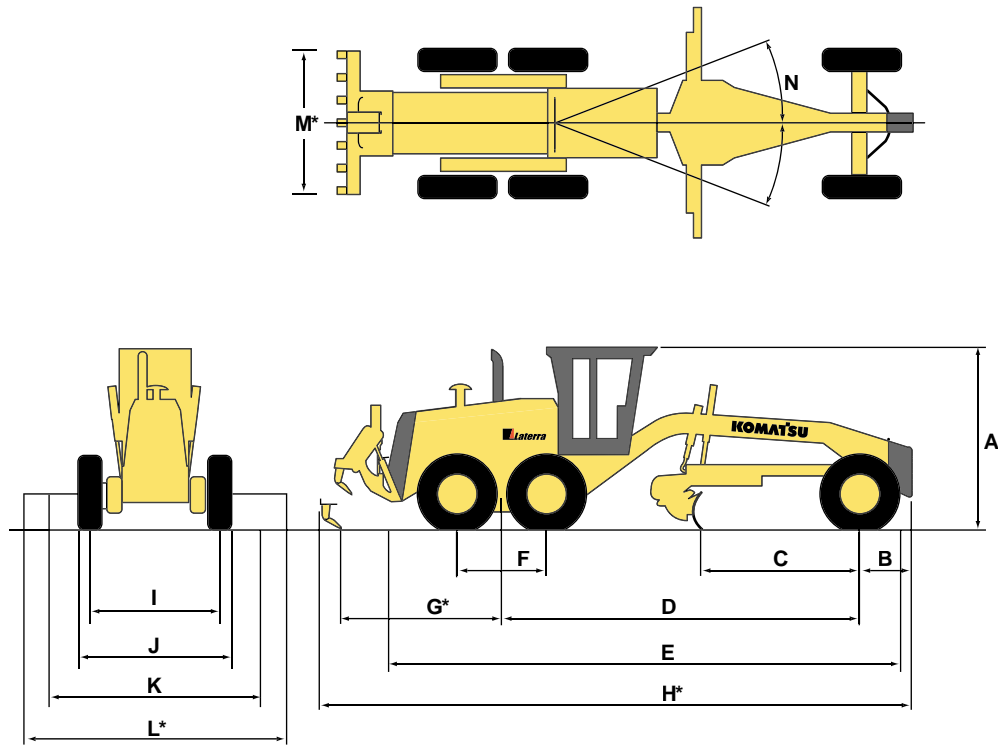
Gauges:  
 Standard . . . . . articulation, engine coolant temperature, fuel level, hour meter, message center, torque converter oil temperature

Warning lights:  
 Standard . . . . . battery charge, blade float, brake oil pressure, directional indicator, engine oil pressure, heater signal, lift arm lock, parking brake, differential lock, transmission electric circuit and torque converter oil temperature

Optional . . . . . blade accumulator, differential oil temperature, high beam, working lights



**DIMENSIONS**



A	Height	3120 mm	10'3"
B	Center of front axle to counterweight	665 mm	2'2"
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	8595 mm	28'2"
F	Tandem wheelbase	1535 mm	5'0"
G*	Center of tandem to back of ripper	2655 mm	8'9"
H*	Overall length	9865 mm	32'4"
I	Track or 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/decelerator and hand throttle control
- Air cleaner with pre-cleaner, safety element and dust indicator
- Antifreeze -30°
- Engine: Komatsu SAA6D114E-2, emissionized, turbocharged and air-to-air aftercooled, standard VHP, 165-190 net horsepower
- Fuel line water separator
- Hood sides for engine compartment

### Electrical System

- Alarm, backup
- Alternator, 60 amp, 24 V
- Batteries, 2 x 12 V 780 cca each
- Dome light, cab
- Horn, electric
- Lights: back-up, stop, tail, directional, headlights (2 halogen type, front cab mounted)
- Lamps: 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, preheating, high beam of front lamp

### Operator Environment

- Cab: low profile enclosed ROPS/FOPS (SAE J1040, J231) with safety tinted glass, hinged lower front cab glass windows with wiper and washer
  - Heater with front defroster fan
  - Console, adjustable with instrument panel
  - Gauges: service meter, fuel, articulation indicator, transmission oil temperature, coolant temperature, error code display with speedometer, transmission range and engine speed
  - Mirrors, interior center cab and right and left exterior mirrors
  - Seat, deluxe adjustable cloth suspension with retractable seat belt
  - Sound suppression, cab and floor mat
  - Wipers, upper front and rear, two-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
  - Tires and rims: 14.00-24 12TL (G2) tubeless bias tires on 10" 3-piece rims(6)
  - Transmission, full power shift with torque converter (8F-4R)

### Work Equipment and Hydraulics

- Circle, drawbar mounted, 360° rotation w/hydraulic blade lift and circle side shift
  - Circle slip clutch
  - Hydraulic system, closed center, load sensing
  - Moldboard; 3710 mm x 660 mm x 22 mm **12' x 26" x 0.87"** with replaceable end bits, through-hardened cutting edges 152 mm x 16 mm **6" x 0.63"**, hydraulic blade side shift and hydraulic tilt w/anti-drift check valves. maximum moldboard angle position 90° right & left
  - Float system, electric for blade
  - 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
- Manuals, operator's and service parts book
  - Painting, Komatsu standard color scheme
  - 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

- AM/FM radio with cassette
- Accumulators, anti-shock for blade lift
- Additional high capacity heater
- Air conditioner with R134A refrigerant
- Air intake extension
- Alternator, 90 amp
- Battery, extreme duty, 1146 cca each
- Block heater
- Cab, high deluxe with ROPS/FOPS
- Canopy ROPS/FOPS
- Circle shear pin
- Cutting edges, 19 mm x 203 mm **3/4" x 8"**
- Extinguisher, 5 lb
- General toolkit

- Headlights and directional signals, bar mounted
- Hitch, rear—not w/ripper
- Hydraulic control valves —right (2 additional, up to 6 functions) —left (2 additional, up to 7 functions)
- Independent blade float, RH and LH
- Less standard counterweight
- Moldboard 4320 mm x 660 mm x 22 mm **14' x 26" x 0.87"**
- Overlay end bits
- Pre-cleaner A/D eject
- Pusher plate, additional
- Ripper, assembly, rear mounted

- Ripper shanks and points, 2 additional
- Scarifier, assembly, 11-shank type
- Scarifier, shanks and points (11)
- Slow Moving Vehicle (SMV) emblem
- Slow Moving Vehicle (SMV) emblem (ripper)
- Tires and rims: 17.5R25 Michelin radials on 13" one-piece rims
- Tool box w/lock
- Working light, additional rear
- Working light, front
- Warning light, amber colored rotating beacon, cab roof mounted

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