

# **PC78UU-10**

EPA Tier 4 Final Engine

### **Australia & New Zealand Specifications**

# **HYDRAULIC EXCAVATOR**

#### **HORSEPOWER**

Gross:

50.7 kW 68.0 HP / 1950 min-1

Net:

48.8 kW 65.5 HP / 1950 min-1

#### **OPERATING WEIGHT**

7,960 kg

**BUCKET CAPACITY** 

0.095 - 0.28 m<sup>3</sup>

# **WALK-AROUND**

Introducing the environmentally friendly next generation compact hydraulic excavator.

Compliant with EPA Tier 4 Final emissions regulations.

#### ECOLOGY & ECONOMY

- EPA Tier 4 Final emission regulations compliant engine **NEW**
- 5% reduction in fuel consumption (compared to Komatsu's previous models) **NEW**
- Low Noise Design

#### SAFETY

- · Suitable for Narrow working conditions with a Short Swing
- Cab protection design compliant with (ISO 3471) and OPG 2 top guard (ISO 10262) standards
- Lock lever and lock lever auto lock function

#### WORKABILITY

- · Increased precision and efficiency with the offset boom
- Increase of 3% for efficiency through work mode
- Max Drawbar Pull increased by 2%

#### INFORMATION & COMMUNICATION TECHNOLOGY (ICT)

- Multi function monitor for displaying information **NEW**
- High resolution 3.5" Liquid Crystal Display (LCD) colour monitor
- KOMTRAX Level 5





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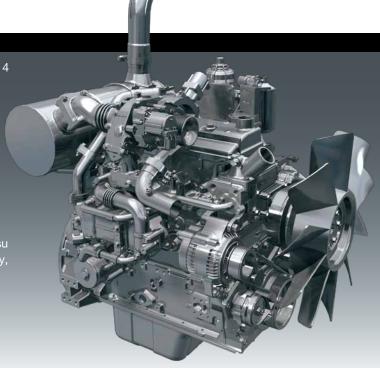
#### **BUCKET CAPACITY**

0.095 - 0.28 m<sup>3</sup>

# **ECOLOGY & ECONOMY**

#### **ENVIRONMENT-FRIENDLY ENGINE**

The Komatsu SAA4D95LE-6 engine is EPA Tier 4 Final and EU Stage 3B emissions certified and provides exceptional performance while reducing fuel consumption. Based on Komatsu proprietary technologies developed over many years, this new diesel engine reduces exhaust gas particulate matter (PM) by more than 90% and nitrogen oxides (NOx) by more than 15% when compared to Tier 4 Interim levels. Through the in-house development and production of engines, electronics, and hydraulic components, Komatsu has achieved great advancements in technology, providing high levels of performance and efficiency in virtually all applications.



#### **Efficient Hydraulic System**

The PC78UU-10 uses a Closed-centre Load Sensing System (CLSS) that improves fuel efficiency and provides quick response to the operator's demands.

The PC78UU-10 also introduces new technology to enhance the engine and hydraulic pump control. This total control system matches the engine and hydraulics at the most efficient point under any load condition. There have also been improvements in the main valve and hydraulic circuit to reduce hydraulic loss, resulting in higher efficiency and lower fuel consumption.

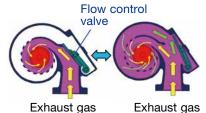
# Reduced up to 5% fuel consumption

seed on typical work pattern collected via KOMTRAX. The fuel consumption reduction may be less than the above value during actual work, depending on the contents of the work.

# Komatsu's New Engine Technology Includes Variable Flow Turbocharger (VFT)

A newly designed variable flow turbocharger features simple and reliable technology that varies the intake airflow. Exhaust turbine wheel speed is controlled by flow control valve and it enables to deliver optimum air quantity to the engine combustion chamber under all

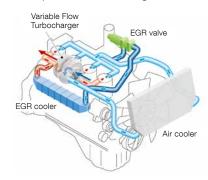
speed and load conditions. The result is cleaner exhaust gas while maintaining power and performance.



#### **Cooled Exhaust Gas Recirculation (EGR)**

Cooled EGR, a technology well-proven in existing Komatsu engines, reduces NOx emissions. These components ensure reliable performance during the

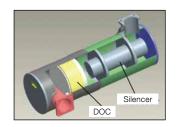
demanding work conditions of construction equipment.



#### Komatsu Diesel Oxidation Catalyst (KDOC)

Komatsu has designed and developed a simple and high efficiency diesel oxidation catalyst. This system enables to eliminate the need of the PM regeneration and to

simplify the engine control system. High performance exhaust noise silencer is also integrated and it contributes the engine noise reduction.



#### **Redesigned Combustion Chamber**

The combustion chamber located at the top of the engine piston has a new shape designed to improve combustion and further reduce NOx, PM, fuel consumption, and noise levels.

#### Komatsu Closed Crankcase Ventilation (KCCV)

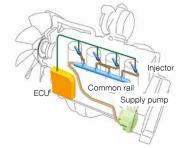
Crankcase emissions (blowby gas) are passed through a CCV filter. The CCV filter traps oil mist which is returned back to the crankcase while the gas, which is almost oil mist free, is fed back to the air intake.



# Heavy Duty High Pressure Common Rail (HPCR) Fuel Injection System

Computer controlled heavy duty HPCR system delivers a precise quantity of pressurised fuel into the engine combustion chamber using multiple injections to achieve complete fuel burn and reduce exhaust emissions. Fuel

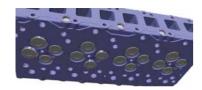
injector reliability has been improved through the use of ultra-hard wear resistant materials such as diamond-like carbon.



#### **Newly Designed 16 Valve Cylinder Head**

Komatsu has designed and developed a new 16 valve cylinder head. It enables to reduce exhaust emissions by

maximised air intake quantity and optimised fuel combustion.



# Electronically Controlled Common Rail Type Engine

- Multi-staged injection
- Low Noise Design
- Optimal arrangement of sound absorbing materials
- Partition between the cab and engine room
- Airtight valve room

# **SAFETY**





#### Locking Lever automatic lock function

When the operator unintentionally releases the lock lever with the operating lever or pedal activated, caution is displayed on the monitor and the motion of the car body is locked.



#### ID Key to reduce machine theft risk **NEW**

It is not possible to start the engine without the ID key. The ID key is built into the IC chip as the start key,

where you can only start the machine after inputting the ID key. If the registered ID key was stolen or lost, you can erase the ID key.



#### **Potentiometer**

Prevents damage to sensor parts such as interference prevention system.



Offset Potentiometer

#### **Built in working machine** hydraulic hose

Guard the hydraulic hose from touching obstacles.





Arm Potentiometer

#### ROPS CAB STRUCTURE

#### **ROPS CAB PROTECTION**

Equipped with a ROPS cab for driver protection structure if the hydraulic excavator falls. It has high impact absorption capability, outstanding durability and impact resistance. For falling objects, it complies with OPG Top Guard level 2 and head guard standard of industrial safety and health laws.



The rear area can be clearly seen on the high definition LCD monitor







#### Other safety equipment

Secondary engine stop switch

In preparation for an emergency, an engine stop switch was equipped at the bottom of the seat

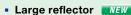


 Set belt Caution indicator

Lights up when seat belt is not fastened.



- Retractable seat belt
- Emergency escape hammer
- Reinforced tempered glass





- Mirror for view of left rear area
- Travel alarm
- Thermal Guard



Fan Guard



 Oil Scattering prevention cover



# **WORKABILITY**

#### OFFSET BOOM

#### **OFFSET BOOM TO INCREASE THE ACCURACY** AND EFFICIENCY OF SIDE **EXCAVATION WORK**

Equipped with an offset boom with maximum boom range of 1050mm on both sides. Now it is possible to accurately and efficiently perform the side excavation work in narrow areas and walls together with the

**Outside Track Excavation** with 600mm Bucket

Left side 410mm

Right side 120mm

Powerful & Smooth Work

With the evolved total peak control, we realised an increase in work while suppressing fuel consumption.

#### Workload

# Increased by 3%

Vs PC78UU-8 Based on typical work pattern collected via KOMTRAX.

#### Excellent Driving Performance

Refined the strong traction that is popular with PC78UU, the maximum towing power has been further increased by 2%. With high hill climbing ability and steering performance, it demonstrates excellent driving performance.

#### **Maximum traction**

Increased by

Vs PC78UU-8 Based on typical work pattern collected via KOMTRAX.

#### Equipped with a swing return prevention valve

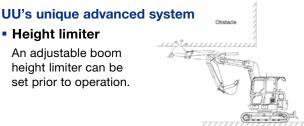
A swivel motor with a swinging return restraining valve with smooth turning stop as standard build. It is easy to position the working machine and it helps prevent the load of the bucket from spilling out.

#### Height limiter

Right Maximum boom offset

1050mm

An adjustable boom height limiter can be set prior to operation.

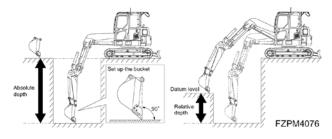


#### Digital depth display

Ditching, trenching, or digging is even more efficient with this automatic depth measurement system

Left Maximum boom offset

1050mm



# **COMFORT**



#### **Large Cab**

Large cab provides ample operation space. The cab has a wide doorway for easy access.



#### **Sliding Convex Door**

The sliding convex door facilitates easy entrance and exit in confined areas.



#### **Auxiliary Input (MP3 Jack)**

By connecting an auxiliary device such as an MP3 player to the auxiliary input, the operator can hear the sound through the speakers installed in the cab.



#### 2 X 12 V Power Outlets

The converter is increased in capacity and two power supply sockets are installed to supply electric power for various use.



#### **Low Cab Noise**

Cab is highly rigid and has excellent sound absorption ability. Thorough improvement of noise source reduction and use of low noise engine, hydraulic equipment, and air conditioner allows this machine to generate a low level of noise.

#### **Automatic Air Conditioner**

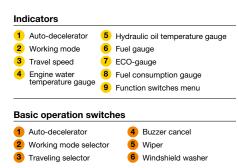
The automatic air conditioner allows the operator to easily and precisely set the cab temperature using the large LCD color monitor panel. The bi-level control function improves air flow and keeps the inside of the cab comfortable throughout the year.

# INFORMATION & COMMUNICATION TECHNOLOGY



# Large Multi-lingual High Resolution LCD Monitor

A large user-friendly high resolution LCD colour monitor enables safe, accurate and smooth work. Visibility and resolution are further improved compared with current 7-inch large TFT LCD. Simple and easy to operate switches. Function keys facilitate multi-function operations. Displays information and datas in 25 languages to globally support operators around the world.



#### **Supports Efficiency Improvement**

The main screen displays recommendations for better energy-saving operations as needed. The operator can use the ECO guidance menu to check the operation records, ECO guidance records, average fuel consumption logs, etc.





ECO guidance

ECO guidance menu

#### **Operator Identification Function**

An operator identification ID can be set for each operator, and used to manage operation information of individual

machines as KOMTRAX data. Data sent from KOMTRAX can be used to analyse operation status by operator as well as by machine.



# **Equipment Management Monitoring System** (EMMS)

#### **Monitor Function**

Controller monitors engine oil level, coolant temperature,

battery charge air clogging, etc. If the controller detects an abnormality, it is displayed on the LCD.



#### **Maintenance Function**

The monitor displays replacement time of oil and filters on the LCD when the replacement interval is reached.

# Trouble Data Memory Function

Monitor stores abnormalities for effective troubleshooting.

MOMAT'SU		
Maintenance	Interval	Renain
Air Cleaner Cleaning or Change	-0	-
Coolant Change		
Find Profilter Gamps	500 h	500
Traine Gil Change	500 h	500
Dispine Oil Filter Champe	500 h	

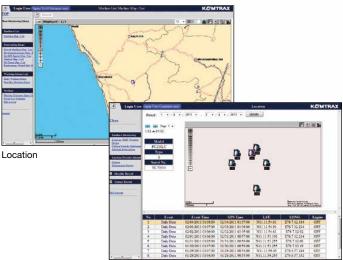
# **KOMTRAX**



Assists Customer's Equipment Management and Contributes to Fuel Cost Cutting

#### **Equipment Management Support**

KOMTRAX terminal installed on your machine collects and sends information such as machine location, working record, machine conditions, etc. using wireless communication. You can review the KOMTRAX data remotely via the online application. KOMTRAX not only gives you the power of knowledge on your machine, but also the convenience of managing your fleet on the web.



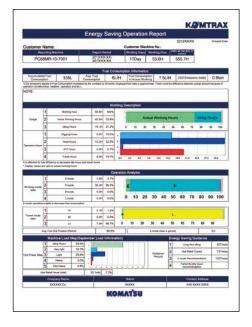
Movement generated position



Monthly status summary

# **Energy-saving Operation Support Report**

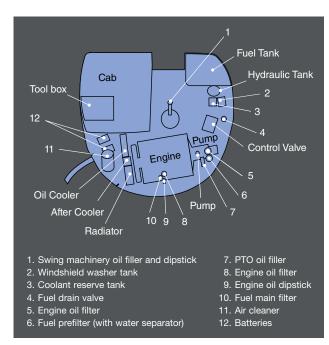
KOMTRAX can provide various useful information which includes the energy-saving operation support report created based on the operating information of your machine such as fuel consumption and idle time.



## MAINTENANCE FEATURES

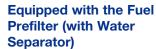
#### **Optimum Maintenance Layout**

With the engine hood, right side hood and side service doors, it is possible to access the major maintenance points from ground level. Furthermore, the fuel drain valve, engine oil filter and swing machinery oil filler are remote mounted, facilitating easy maintenance.



# Easy Access to Engine Oil Filter, Engine Main Fuel Filter and Fuel Drain Valve

Engine oil filter, engine main fuel filter and fuel drain valve are remote mounted to improve accessibility.



Removes water and contaminants in the fuel to prevent fuel problems. (with built-in priming pump)



Fuel filter



Fuel prefilter with water separator



Engine oil filter



Fuel drain valve

#### **Fan Belt Auto-tensioner**

You can service the fan belt easily.



# Battery isolation switch

A standard battery isolation switch allows a technician to disconnect the power supply and lock out before servicing the machine.



#### **Air Conditioner Filter**

The air conditioner filter is removed and installed without the use of tools facilitating filter maintenance.



External air conditioner filter

#### Side-by-side Cooling

Since radiator, aftercooler and oil cooler are arranged in parallel, it is easy to clean, remove and install them. Radiator, aftercooler, and oil cooler made of aluminium have high cooling efficiency and are easily recycled.



#### **Washable Floor**

The PC78UU-10's floor is easy to keep clean. The gently inclined surface has a flanged floor mat and drainage holes to facilitate run off.



#### **Large Tool Box**

Large tool box provides plenty of space. Grease pump storage space is also provided.



#### **Long Life Oils, Filters**

High performance filters are used in the hydraulic circuit and engine. By increasing the oil and filter replacement intervals, maintenance costs can be significantly reduced.

Engine oil & Engine oil filter	every <b>500</b> hours
Hydraulic oil	every <b>5000</b> hours
Hydraulic oil filter	every 1000 hours



Hydraulic oil filter (Ecology-white element)



# **SPECIFICATIONS**

ENGINE
Model Komatsu SAA4D95LE-6
TypeWater-cooled, 4-cycle, direct injection
Aspiration Turbocharged, aftercooled, cooled EGR
Number of cylinders 4
Bore
Stroke
Piston displacement
SAE J1995 Gross <b>50.7 kW</b> (68.0HP) / 1950 min <sup>-1</sup> ISO 9249 / SAE J1349 Net <b>48.8 kW</b> (65.5HP) 1950 min <sup>-1</sup> Governor
Fan drive method for radiator cooling Mechanical
*EPA Tier 4 and EU Stage 3B emissions certified
HYDRAULICS
TypeHydrauMind (Hydraulic Mechanical Intelligence New Design) system, closed-center system with load-sensing valves and pressure-compensated valves
Main pump:
Type
Hydraulic motors:
Travel2 x piston motor with parking brake Swing1 x piston motor with swing holding brake
Relief valve setting:
Implement circuits 26.5 MPa 270 kgf/cm² 3,840 psi Travel circuit 26.5 MPa 270 kgf/cm² 3,840 psi Swing circuit 20.6 MPa 210 kgf/cm² 2,990 psi Blade circuit (Raise) 12.7 MPa 130 kgf/cm² 1,850 psi (Lower) 21.1 MPa 215 kgf/cm² 3,060 psi
Hydraulic cylinders:
(Number of cylinders – bore x stroke x rod diameter)
Boom 1–120 mm x 1015 mm x 70 mm 4.7" x 40.0" x 2.8" Arm 1–110 mm x 715 mm x 65 mm 4.3" x 28.1" x 2.6" Bucket 1–90 mm x 710 mm x 55 mm 3.5" x 28.0" x 2.2" Boom offset1–110 mm x 350 mm x 55 mm 4.3" x 13.8" x 2.2" Blade 1–130 mm x 130 mm x 65 mm 5.1" x 5.1" x 2.6"

عرب		
=1@	<b>DRIVES</b>	AND

Steering control	•
Maximum drawbar pull	<b>66.9 kN 6820 kgf</b> 15,050 lbf
Maximum travel speed (auto sh	nift):
High	<b>5.0 km/h</b> 3.1 mph <b>2.9 km/h</b> 1.8 mph
Low	<b>2.9 km/h</b> 1.8 mph
Service brake	Hydraulic lock
Parking brake	Mechanical disc

BRAKES

SWING SYSTEM
Driven by
UNDERCARRIAGE
Centre frame X-frame Track frame Box-section Seal of track Sealed track Track adjuster Hydraulic Number of shoes (each side) 39 Number of carrier rollers (each side) 1 Number of track rollers (each side) 5
COOLANT & LUBRICANT CAPACITY
Fuel tank       125 ltr 30 U.S. gal         Radiator       10 ltr 2.6 U.S. gal         Engine       11.5 (11.0) ltr 3.0 (2.9) U.S. gal         Final drive, each side       1.1 ltr 0.3 U.S. gal         Swing drive       2.0 ltr 0.5 U.S. gal         Hydraulic tank       102 (56) ltr 26.9 (14.8) U.S. gal

# OPERATING WEIGHT (APPROXIMATE)

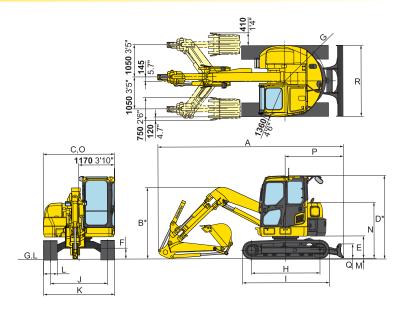
Operating weight includes **3749 mm** 12'4" offset boom, **1720 mm** 5'8" arm, SAE heaped **0.28 m³** 0.37 yd³ backhoe bucket, blade, rated capacity of lubricants, coolant, full fuel tank, operator, and standard equipment.

Shoes Width	Operating Weight	Ground Pressure
<b>450mm</b> 17.7"	<b>7,960kg</b> 17,550lb	34.3kPa <b>0.35kg/cm²</b> 4.98psi



#### DIMENSIONS

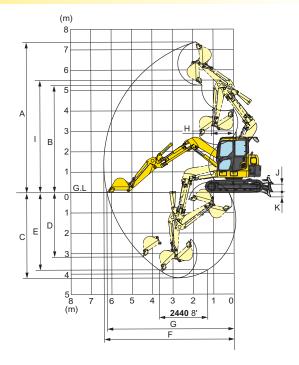
	Boom Length	3749 mm	12'4"
	Arm Length	1720 mm	5'8"
Α	Overall length	6060 mm	19'11"
В	Overall height (to top of boom)*	2325 mm	8'1"
C	Overall width	2330 mm	7'8"
D	Overall height (to top of cab)*	2730 mm	2'5"
E	Ground clearance, counterweight	735 mm	2'5"
F	Ground clearance, minimum	360 mm	1'2"
G	Tail swing radius	1340 mm	4'5"
Н	Track length on ground	2235 mm	7'4"
- 1	Track length	2840 mm	9'4"
J	Track gauge	1870 mm	6'2"
K	Width of crawler	2320 mm	7'7"
L	Shoe width	450 mm	17'7"
M	Grouser height	20 mm	0'8"
N	Machine cab height	1835 mm	6'0"
0	Machine cab width	2330 mm	7'8"
Р	Distance swing centre to rear end	1915 mm	6'3"
Q	Blade height	470 mm	1'7"
R	Blade width	2320 mm	7'7"



<sup>\*:</sup> including grouser height

# WORKING RANGE

	Boom Length	3749 mm	12'4"
	Arm Length	1720 mm	5'8"
Α	Maximum digging height	7330 mm	24'1"
В	Maximum dumping height	5260 mm	17'3"
C	Maximum digging depth	4230 mm	13'10"
D	Maximum vertical wall digging depth	3190 mm	10'6"
E	Maximum digging depth of cut for <b>2440 mm</b> 8' level	3795 mm	12'5"
F	Maximum digging reach	6400 mm	21'0"
G	Maximum digging reach at ground	6240 mm	20'6"
Н	Minimum swing radius	1200 mm	3'11"
ı	Maximum height of min. swing radius	5460 mm	17'11"
J	Maximum lift above ground (blade)	380 mm	1'3"
K	Maximum drop below ground (blade)	245 mm	9'6"
ISO	Bucket digging force	<b>61.3</b> 6250 kgf 13	
130	Arm crowd force	<b>38.8</b> 3960 kgf 8	

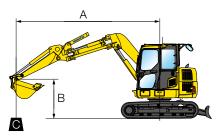




#### **BACKHOE BUCKET AND ARM COMBINATION**

Bucket Capacity (heaped)		Wid	Width		Number of Tools	Arm Length	
AE, PCSA	CECE	Without Side Cutters	With Side Cutters	Weight	Number of Teeth	<b>1720 mm</b> 5'8"	
<b>0.09 m³</b> 0.12 yd³	<b>0.08 m³</b> 0.10 yd³	<b>350 mm</b> 14"	<b>450 mm</b> 18"	<b>145 kg</b> 320 lb	3	0	
<b>0.12 m³</b> 0.16 yd³	<b>0.11 m³</b> 0.14 yd³	<b>450 mm</b> 18"	<b>550 mm</b> 22"	<b>160 kg</b> 355 lb	3	0	
<b>0.20 m³</b> 0.26 yd³	<b>0.18 m³</b> 0.24 yd³	<b>550 mm</b> 22"	<b>650 mm</b> 26"	<b>185 kg</b> 410 lb	3	0	
<b>0.28 m³</b> 0.37 yd³	<b>0.25 m³</b> 0.33 yd³	<b>650 mm</b> 26"	<b>750 mm</b> 30"	<b>210 kg</b> 465 lb	4	0	

# LIFT CAPACITIES



- A: Reach from swing centre
- B: Bucket hook height
- C: Lifting capacity
- Cf: Rating over front
- Cs: Rating over side
- $oldsymbol{\Theta}$ : Rating at maximum reach

#### CONDITION:

- Bucket: **0.28 m³** 0.37 yd³ SAE heaped
- Arm length: **1720 mm** 5'8"
- Shoe width: 450 mm 17'7" triple grouser
- Blade above ground

								Unit: kọ
A MAX		4.5	i m	3.0	) m	1.5	i m	
В	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
5.0 m	*1610	1590			*2440	*2440	•	
3.0 m	1090	880	1450	1180	*3020	2470	*5220	*5220
0.0 m	900	710	1190	940	2320	1780		
-2.0 m	1240	970	1180	930	2310	1770	*4220	*4220

#### Unit: kg

#### CONDITION:

- Bucket: **0.28 m³** 0.37 yd³ SAE heaped
- Arm length: **1720 mm** 5'8"
- Shoe width: 450 mm 17'7" triple grouser
- Blade on ground

A MAX		4.5	m	3.0	) m	1.5	i m	
В	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs
5.0 m	*1610	1590			*2440	*2440		
3.0 m	*1580	880	*2270	1180	*3020	2470	*5220	*5220
0.0 m	*2090	710	*2570	940	*4040	1780		
-2.0 m	*1970	970	*1780	930	*3090	1770	*4220	*4220

\*Load is limited by hydraulic capacity rather than tipping. Ratings are based on SAE Standard No. J1097. Rated loads do not exceed 87% of hydraulic lift capacity or 75% of tipping load.



#### STANDARD EQUIPMENT

- Air cleaner, double element with auto dust evacuator
- Alternator, 35 Ampere, 24 V
- Arm.
- **1720mm** 5'8" arm assembly
- Automatic air conditioner
- Auto deceleration
- Batteries, 55 Ah/2 x 12 V
- Blade,
  - **2320mm** 7'7" blade assembly

- Boom,
  - **3749mm** 12'4" boom assembly
- Bolt-on top guard,
- [ Operator Protective Guards level 2]
- Cab which includes: floor mat, intermittent front windshield wiper and washer, large ceiling window, sunshade, pull-up front window, removable lower windshield
- Cooling fan, suction type
- Counterweight, 800 kg
- KOMTRAX

- Monitor panel
- Rear view mirrors (left side rear, rear)
- Rear view monitoring system
- Seat belt **78mm** 3"
- Shoes.
- 450mm 17'7" Triple grouser
- Starting motor 4.5 kW
- Suspension seat
- Travel alarm
- Working lights2 on boom

**\*** 

#### **OPTIONAL EQUIPMENT**

- 12 V electric plug
- Heavy counterweight, 1150 kg
- Hydraulic control unit
   1 additional actuator

- Shoes,
- 450mm 17'7" Road Liner

www.Komatsu.com.au

Printed in Australia



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