

# KOMATSU

*Utility*

**PC**  
**110R-1**



PC110R-1

**PC110R-1**

MIDI EXCAVATOR

**NET HORSEPOWER**  
SAE J1349

70,9 kW - 95 HP

**OPERATING WEIGHT**

From 10.560 kg  
to 11.150 kg

# THE ALTERNATIVE DIMENSION

Especially designed for applications that require compact machines with high digging force and excellent stability, highlighted by the front blade as standard, the PC110R-1 offers the features of a traditional excavator with extremely compact dimensions.

The undercarriage of the PC110R-1 is superior in terms of sturdiness and dimensions, with a structure that is capable of absorbing stress in any application, while at the same time providing the machine excellent stability.

## Engine

The KOMATSU turbo engine delivers net power of 70.9 kW / 95 HP, providing high reserve torque and above all reliability. The innovative combustion system and the turbocharger's controlled pressure guarantee emissions in accordance with the strictest standards.

## Hydraulic System

The **CLSS (Closed Load Sensing System)** hydraulic system fitted on the PC110R-1 ensures excellent control and unbeatable productivity, even with less experienced operators. Two different hydraulic power modes can be selected, "Power" and "Economy", for operation at maximum power when required, or alternatively at reduced power to save on fuel for more general work or finishing operations.

## "PPC" Proportional Servocontrols

The PPC servocontrols require very little effort and ensure extremely precise control. Each movement has its own dedicated control, and can be used at the same time as the others, thus simplifying and speeding up all working cycles.





## Total Comfort

The cab, mounted on special elastic supports, is spacious and designed with care to the minimum details, so as to ensure a silent and comfortable working environment. Special attention has been paid to the internal layout: easy-to-read instruments, a large console located in front of the operator, and an efficient heating and ventilation system, with partial fresh air intake. The new air-conditioning system, available upon request, ensures the ideal temperature in all climatic conditions, so as to guarantee maximum comfort for the operator.

The large glazed surface, the sun roof and the special design of the panels offer maximum 360° visibility.

## Versatility

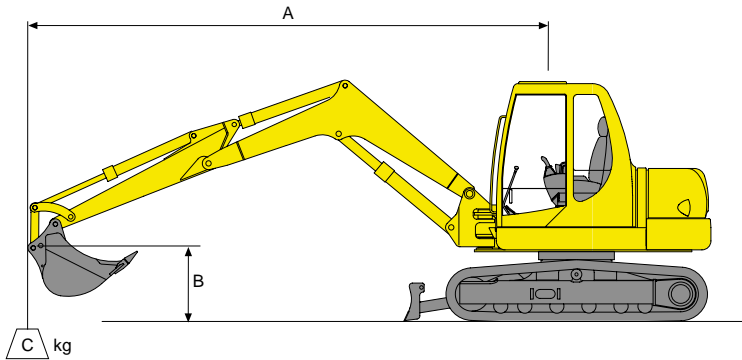
The PC110R-1 can be customised to satisfy all requirements: monoboom or two-piece boom, short or long digging arm, 500 or 600 mm steel tracks. In addition, the possibility to adjust the flow-rate and the pressure of the auxiliary lines allows numerous attachments with different specifications to be used.

## Maintenance

All the service points on the PC110R-1 have been grouped under the two fully-opening panels, making them easy to reach from the ground; in addition, all the hydraulic hoses are fitted with ORFS couplings, which ensure better seal and easy replacement if required.



# LIFTING CAPACITY



**MONOBOOM**

DATAS AND SPECIFICATIONS ARE REFERRING TO THE MACHINE ACCORDING TO 89/392/EC AND EN 474-5 DIRECTIVES

When the bucket, the levers or the bucket cylinder are disassembled, the lifting capacity can be increased of their respective weights.  
 A - Outreach starting from the rotation centre  
 B - Height at bucket pin  
 C - Lifting capacity - with bucket 900 mm (294 kg), levers and cylinder

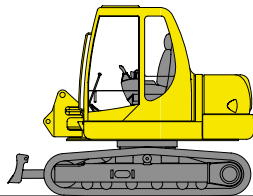


Capacity over front



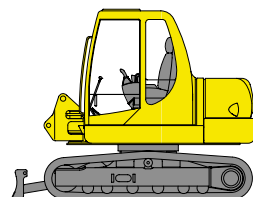
Lateral capacity or capacity over 360°

## WITH BLADE UP



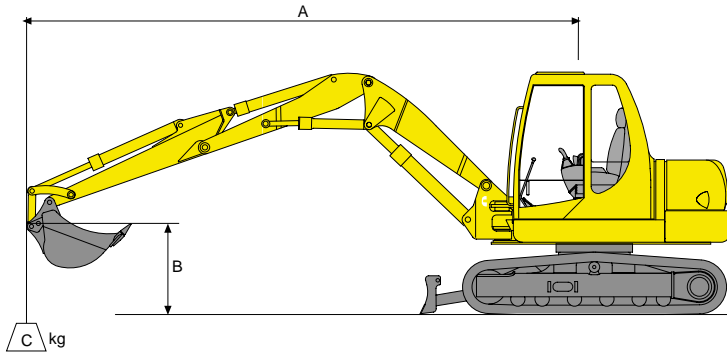
A \ B		3,0 m		4,5 m		6,0 m		Max outreach		
1.850 mm	4,5 m	kg	-	-	-	-	-	-	1.900	1.850
	3,0 m	kg	-	-	2.200*	2.200*	1.450	1.400	1.400	1.250
	1,5 m	kg	3.750*	3.750*	2.100*	2.100*	1.350	1.250	1.300	1.100
	0,0 m	kg	3.600*	3.600*	2.000*	2.000*	-	-	1.200	1.100
	-1,5 m	kg	3.400*	3.400*	2.050*	2.050*	-	-	1.200	1.100
2.000 mm	-3,0 m	kg	3.000*	3.000*	-	-	-	-	1.500*	1.250
	4,5 m	kg	-	-	-	-	-	-	1.750	1.350
	3,0 m	kg	-	-	2.100*	2.100*	1.400	1.250	1.300	1.000
	1,5 m	kg	3.600*	3.600*	1.950*	1.950*	1.250	1.000	1.200	900
	0,0 m	kg	3.550*	3.550*	1.800*	1.800*	-	-	1.100	800
2.300 mm	-1,5 m	kg	3.300*	3.300*	1.900*	1.900*	-	-	1.150	900
	-3,0 m	kg	3.000*	3.000*	-	-	-	-	1.400*	1.200
	4,5 m	kg	-	-	-	-	-	-	1.700	1.100
	3,0 m	kg	-	-	2.000*	2.000*	1.300	1.200	1.250	800
	1,5 m	kg	3.500*	3.500*	1.800*	1.800*	1.150	900	1.100	750
2.300 mm	0,0 m	kg	3.400*	3.400*	1.650*	1.650*	-	-	1.050	700
	-1,5 m	kg	3.200*	3.200*	1.750*	1.750*	-	-	1.200	700
	-3,0 m	kg	2.950*	2.950*	-	-	-	-	1.400*	950

## WITH BLADE AT GROUND LEVEL



A \ B		3,0 m		4,5 m		6,0 m		Max outreach		
1.850 mm	4,5 m	kg	-	-	-	-	-	-	2.100*	1.850
	3,0 m	kg	-	-	2.200*	2.200*	1.900*	1.400	1.750*	1.250
	1,5 m	kg	3.750*	3.750*	2.100*	2.100*	1.800*	1.250	1.600*	1.100
	0,0 m	kg	3.600*	3.600*	2.000*	2.000*	-	-	1.500*	1.100
	-1,5 m	kg	3.400*	3.400*	2.050*	2.050*	-	-	1.500*	1.100
2.000 mm	-3,0 m	kg	3.000*	3.000*	-	-	-	-	1.550*	1.250
	4,5 m	kg	-	-	-	-	-	-	2.000*	1.350
	3,0 m	kg	-	-	2.100*	2.100*	1.800*	1.250	1.600*	1.000
	1,5 m	kg	3.600*	3.600*	1.950*	1.950*	1.750*	1.000	1.500*	900
	0,0 m	kg	3.550*	3.550*	1.800*	1.800*	-	-	1.400*	800
2.300 mm	-1,5 m	kg	3.300*	3.300*	1.900*	1.900*	-	-	1.450*	900
	-3,0 m	kg	3.000*	3.000*	-	-	-	-	1.500*	1.200
	4,5 m	kg	-	-	-	-	-	-	1.800*	1.100
	3,0 m	kg	-	-	2.000*	2.000*	1.750*	1.200	1.700*	800
	1,5 m	kg	3.500*	3.500*	1.800*	1.800*	1.600*	900	1.400*	750
2.300 mm	0,0 m	kg	3.400*	3.400*	1.650*	1.650*	-	-	1.350*	700
	-1,5 m	kg	3.200*	3.200*	1.750*	1.750*	-	-	1.300*	700
	-3,0 m	kg	2.950*	2.950*	-	-	-	-	1.400*	950

**NOTES:** data are based on ISO 10567 standard - the above indicated lifting capacities include a 25% safety margin and don't exceed the 87% of the actual capacity - the values marked with asterisk (\*) are limited by the hydraulic capacities - for these lifting capacities it is taken for granted that the machine rests on a uniform and firm surface - the lifting point is a hypothetical hook placed behind the bucket.



### TWO PIECE BOOM

DATAS AND SPECIFICATIONS ARE REFERRING TO THE MACHINE ACCORDING TO 89/392/EC AND EN 474-5 DIRECTIVES

When the bucket, the levers or the bucket cylinder are disassembled, the lifting capacity can be increased of their respective weights.  
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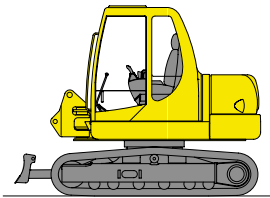


Capacity over front



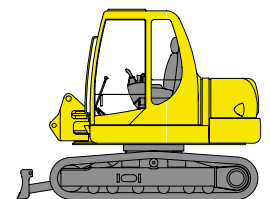
Lateral capacity or capacity over 360°

### WITH BLADE UP



A \ B		3,0 m		4,5 m		6,0 m		Max outreach		
1.850 mm	4,5 m	kg	-	-	2.350*	2.350*	2.100*	1.400	1.450	1.200
	3,0 m	kg	-	-	2.000*	2.000*	1.750*	1.000	1.000	800
	1,5 m	kg	-	-	1.800*	1.800*	1.500*	800	850	700
	0,0 m	kg	-	-	1.750*	1.750*	1.400*	850	800	700
	-1,5 m	kg	3.400*	3.400*	1.800*	1.800*	1.500*	950	900	750
	-3,0 m	kg	3.200*	3.200*	1.900*	1.900*	-	-	1.150	1.000
2.000 mm	4,5 m	kg	-	-	2.250*	2.250*	2.000*	1.300	1.300	1.100
	3,0 m	kg	-	-	1.850*	1.850*	1.650*	900	900	750
	1,5 m	kg	-	-	1.500*	1.500*	1.400*	800	800	600
	0,0 m	kg	-	-	1.350*	1.350*	1.300*	850	750	650
	-1,5 m	kg	3.250*	3.250*	1.600*	1.600*	1.400*	950	900	750
	-3,0 m	kg	3.100*	3.100*	1.850*	1.850*	-	-	1.050	900
2.300 mm	4,5 m	kg	-	-	2.100*	2.100*	1.800*	1.250*	1.200	1.000
	3,0 m	kg	-	-	1.750*	1.750*	1.500*	950	800	700
	1,5 m	kg	-	-	1.400*	1.400*	1.250*	800	750	600
	0,0 m	kg	-	-	1.300*	1.300*	1.200*	750	700	550
	-1,5 m	kg	3.100*	3.100*	1.500*	1.500*	1.250*	900	800	650
	-3,0 m	kg	2.950*	2.950*	1.650*	1.650*	1.400*	950	1.000	800

### WITH BLADE AT GROUND LEVEL



A \ B		3,0 m		4,5 m		6,0 m		Max outreach		
1.850 mm	4,5 m	kg	-	-	2.350*	2.350*	2.100*	1.400	2.000*	1.200
	3,0 m	kg	-	-	2.000*	2.000*	1.750*	1.000	1.600*	800
	1,5 m	kg	-	-	1.800*	1.800*	1.500*	800	1.400*	700
	0,0 m	kg	-	-	1.750*	1.750*	1.400*	850	1.300*	700
	-1,5 m	kg	3.400*	3.400*	1.800*	1.800*	1.500*	950	1.400*	750
	-3,0 m	kg	3.200*	3.200*	1.900*	1.900*	-	-	1.500*	1.000
2.000 mm	4,5 m	kg	-	-	2.250*	2.250*	2.000*	1.300	1.900*	1.100
	3,0 m	kg	-	-	1.850*	1.850*	1.650*	900	1.500*	750
	1,5 m	kg	-	-	1.500*	1.500*	1.400*	800	1.300*	600
	0,0 m	kg	-	-	1.350*	1.350*	1.300*	850	1.200*	650
	-1,5 m	kg	3.250*	3.250*	1.600*	1.600*	1.400*	950	1.300*	750
	-3,0 m	kg	3.100*	3.100*	1.850*	1.850*	-	-	1.400*	900
2.300 mm	4,5 m	kg	-	-	2.100*	2.100*	1.800*	1.250	1.700*	1.000
	3,0 m	kg	-	-	1.750*	1.750*	1.500*	950	1.300*	700
	1,5 m	kg	-	-	1.400*	1.400*	1.250*	800	1.100*	550
	0,0 m	kg	-	-	1.300*	1.300*	1.200*	750	1.000*	550
	-1,5 m	kg	3.100*	3.100*	1.500*	1.500*	1.250*	900	1.100*	650
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NOTES: data are based on ISO 10567 standard - the above indicated lifting capacities include a 25% safety margin and don't exceed the 87% of the actual capacity - the values marked with asterisk (\*) are limited by the hydraulic capacities - for these lifting capacities it is taken for granted that the machine rests on a uniform and firm surface - the lifting point is a hypothetical hook placed behind the bucket.

# SPECIFICATIONS



## ENGINE

Make ..... Komatsu SD106-1FB  
 Type ..... low emissions, direct injection  
 N° of cylinders ..... 4  
 Rated power:  
 (SAE J 1349) ..... 70,9 kW / 95 HP - 2.000 rpm  
 (DIN 6270) ..... 72 kW / 95,5 PS - 2.000 rpm  
 (80/1269/EC) ..... 70,9 kW / 95 HP - 2.000 rpm  
 Max. torque (80/1269/EC) ..... 400 Nm - 1.500 rpm  
 Displacement ..... 4.412 cm<sup>3</sup>



## WEIGHT

Operating weight, including mm 2.000 arm, bucket with 0,32 m<sup>3</sup> ISO 7451 capacity, blade, operator, lubricants, liquids, filled tank and standard equipment (ISO 6016):

Shoes width (mm)	Tread width (mm)	Operating weight with monoboom (kg)	Operating weight with two-piece boom (kg)
Steel			
500	2.400	10.560	10.980
600	2.400	10.800	11.220



## HYDRAULIC SYSTEM

Type ..... Komatsu CLSS  
 Power choices ..... 2 (Power/Economy)

Main pumps:  
 Pump for ..... boom, arm, bucket and travelling  
 Type ..... variable displacement, axial piston  
 Maximum flow ..... 180 l/min  
 Pump for ..... blade and swing  
 Type ..... fixed displacement gear pump  
 Maximum flow ..... 73 l/min

Valve rating:  
 Swing ..... 21,5 MPa (215 bar)  
 Digging equipment ..... 29,4 MPa (294 bar)  
 Bucket breakout force (ISO 6015) ..... 7.350 daN (7.500 kg)  
 Digging arm breakout force (1.850 mm) (ISO 6015) ..... 4.220 daN (4.300 kg)



## SWING SYSTEM

Driven by ..... hydraulic motor  
 Swing reduction gear ..... with double epicyclic reduction  
 Swing circle lubrication ..... permanent grease bath  
 Swing brakes ..... automatic, with oil immersed discs  
 Swing speed ..... 9 rpm



## TRANSMISSION

Controls ..... two levers with pedals  
 Operation ..... completely hydrostatic  
 Hydraulic motors ..... variable displacement, axial piston motors  
 integrated in the profile of the tracks  
 Reduction system ..... epicyclic double reduction gears  
 Max traction force ..... 8.140 daN (8.300 kg)  
 Max speed (high) ..... 4,1 km/h  
 Max speed (low) ..... 2,8 km/h  
 Gradeability ..... 70% limited by the engine inclination  
 Working and parking brakes ..... oil immersed multiple discs  
 with negative control



## BLADE

Width x height ..... 2.400 x 520 mm  
 Max lifting above ground level ..... 500 mm  
 Max depth below ground level ..... 400 mm



## UNDERCARRIAGE

Undercarriage with single-unit electrowelded structure. Heavy duty type.  
 Track frames with boxed section, rounded in its upper part in order to avoid accumulation of material.  
 Adjustment of track tension ..... hydraulic  
 Number of shoes (for each side) ..... 38  
 Number of carrier rollers (for each side) ..... 1  
 Number of track rollers (for each side) ..... 6



## ELECTRIC SYSTEM

Operating voltage ..... 12 V  
 Battery ..... 1 x 155 Ah  
 Alternator ..... 60 A  
 Starter ..... 3,0 kW



## CAB

Sound-proof cab, provided with safety glasses, liftable windscreen, "manhole" roof, door with safety lock, windscreen-wiper, electric horn, adjustable seat, control system and instrumentation, adjustable joysticks. Outside air inlet.



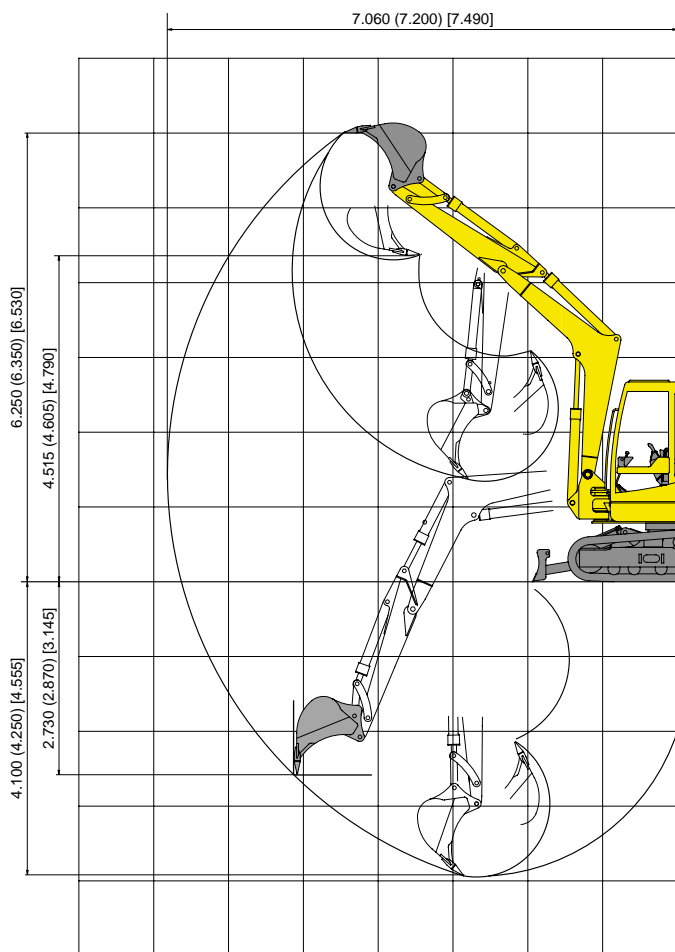
## REFILLS

Fuel tank ..... 150 ℓ  
 Cooling system ..... 18 ℓ  
 Engine oil ..... 12,5 ℓ  
 Hydraulic oil tank ..... 84 ℓ

## DIGGING DIAGRAM



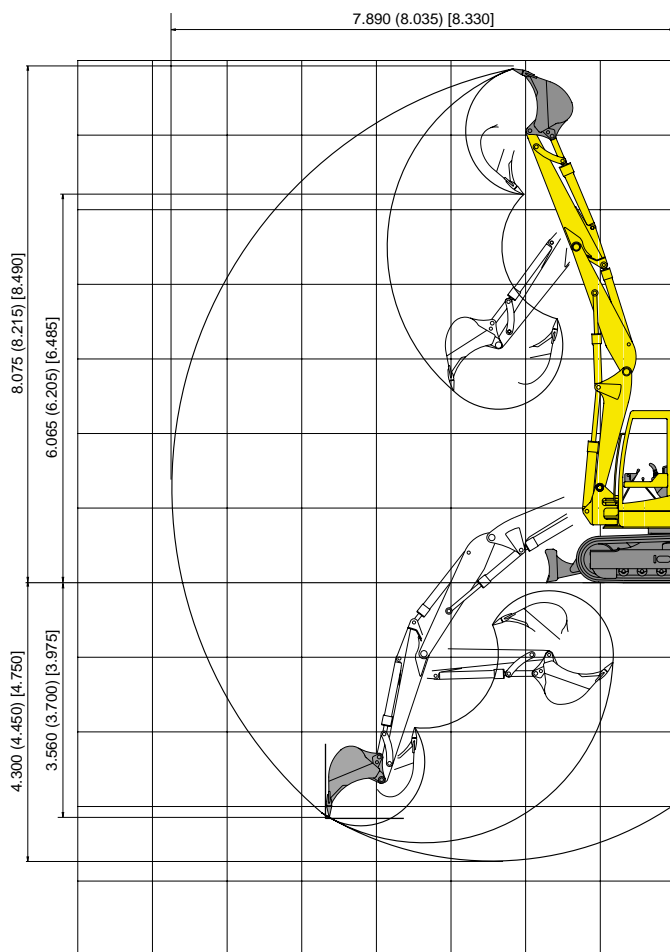
### MONOBOOM



arm 1.850 (2.000) [2.300]



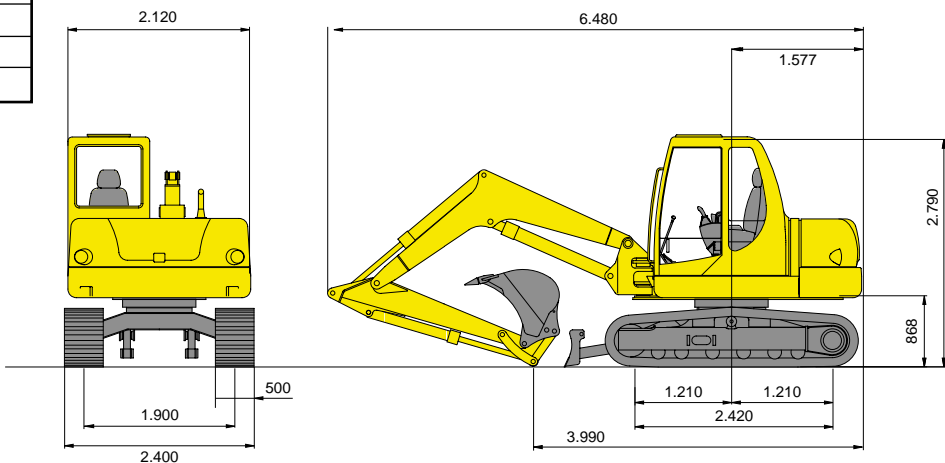
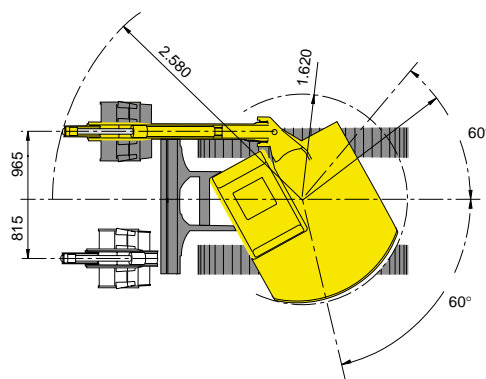
### TWO PIECE BOOM



arm 1.850 (2.000) [2.300]

## DIMENSIONS

BUCKET RANGE			
Width mm	Capacity m <sup>3</sup> (ISO7451)	Weight kg	Teeth N.
300	0,093	168	2
400	0,139	194	3
500	0,181	218	3
600	0,225	234	4
700	0,27	252	4
800	0,314	270	4
900	0,36	294	5
1.000	0,4	320	5



# PC110R-1 M I D I E X C A V A T O R

## STANDARD EQUIPMENT

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>• Monoboomb</li> <li>• 2.000 mm arm</li> <li>• 500 mm steel shoes</li> <li>• 2.400 mm Blade</li> <li>• Cab with heating</li> <li>• Adjustable seat with safety belt</li> <li>• Instrumentation including: hour meter – fuel level LCD display – engine</li> </ul> | <ul style="list-style-type: none"> <li>water temperature LCD display</li> <li>– Indicators: air filter clogging, engine oil pressure, generator, hydraulic oil filter, engine pre-heating, selected speed, working light.</li> <li>• Horn</li> <li>• 12 V electric plug</li> <li>• 2 travelling speeds</li> </ul> | <ul style="list-style-type: none"> <li>• 2 front working lights</li> <li>• Automatic parking brake</li> <li>• Swing lock</li> <li>• Hose burst valve on blade and boom cylinder</li> <li>• Overload warning device</li> <li>• Adjustable element for attachment</li> <li>• Two elements air filter</li> </ul> |
|--|---|---|

## OPTIONAL EQUIPMENT

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Air conditioning</li> <li>• 2-piece boom</li> <li>• Hose burst valves (arm and bucket)</li> <li>• 1.850/2.300 mm digging arm</li> <li>• 600 mm steel shoes</li> <li>• 450 mm rubber shoes</li> <li>• Auxiliary hydraulic circuit for hammer/clamshell bucket</li> </ul> | <ul style="list-style-type: none"> <li>• Hydraulic hammer</li> <li>• FOPS protection (on top and on front)</li> <li>• Bucket range (300÷1.000 mm)</li> <li>• Ditch cleaning bucket (1.800 mm)</li> <li>• Ditch digging bucket (2.100 mm 52°)</li> <li>• Mechanical or hydraulic quick coupler</li> <li>• Boom cylinder protection</li> <li>• Working light on boom</li> </ul> | <ul style="list-style-type: none"> <li>• 2 rear view mirrors</li> <li>• Biodegradable oil</li> <li>• Fuel filling pump</li> <li>• Radio</li> <li>• Rotating beacon</li> <li>• Travel acoustic alarm</li> </ul> |
|--|---|--|

# KOMATSU

Komatsu Utility Europe  
 Head Office  
 via Atheste 4  
 35042 Este (Padova) Italy  
 Tel. +39 0429 616111  
 Fax +39 0429 601000  
 www.equipmentcentral.com  
 utility@komatsu.it



COMPANY WITH  
 ENVIRONMENTAL MANAGEMENT  
 SYSTEM CERTIFIED BY DNV  
**ISO 14001**