

# SPECIFICATIONS



## ENGINE

Make..... Komatsu 4D106-1FB  
 Type..... low emissions, direct injection  
 Nb. of cylinders..... 4  
 Engine power (ISO 14396)..... 71,8 kW / 96,3 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, 1.850 mm arm, bucket with 0,33 m<sup>3</sup> ISO 7451 capacity, operator, lubricants, liquids, filled tank and standard equipment (ISO 6016):

	Tread width (mm)	Operating weight with monoboom (kg)	Operating weight with two-piece boom (kg)
Basic version	2.500	9.730	10.150
With rear blade	2.500	9.910	10.330
With 4 stabilisers	2.500	10.640	11.060
With blade and stabilisers	2.500	10.820	11.240



## HYDRAULIC SYSTEM

Type..... KOMATSU "CLSS"  
 Power modes..... 2 (Power/Economy)

Main pumps:  
 Pump for..... boom, arm, bucket and travelling  
 Type..... variable displacement, axial piston  
 Maximum flow..... 180 l/min  
 Pump for..... steering, swing, equipment, undercarriage  
 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)..... 4.456 daN (4.544 kg)



## TRANSMISSION AND AXLES

Hydrostatic transmission with four driving wheels. The hydraulic motor acts by means of a synchromesh gear that makes for two speed ranges.  
 Maximum traction force..... 6.775 daN (6.900 kg)  
 Working speed..... 1<sup>st</sup> 4,0 km/h - 2<sup>nd</sup> 9,0 km/h  
 Travelling speed..... 3<sup>rd</sup> 14 km/h - 4<sup>th</sup> 32 km/h

Axles:  
 Driving and steering axles with epicyclic reduction gears in the hubs. The oscillation of the front axle can be locked by means of two hydraulic pistons.

Tyres:  
 Coupled (std)..... 9,00 - 20  
 Single (opt)..... 18 - 19,5



## 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..... 8,5 rpm



## BRAKES

- Service and emergency brakes: hydraulically controlled, with pedal, by means of two double circuit pumps, acting on oil immersed multiple discs on the four wheels.  
 - Working brakes: hydraulically controlled by means of a pedal, acting on the four wheels  
 - Parking brakes: negative type brakes, hydraulicallt controlled by means of an electric push button positioned inside the cab, acting on the rear axle. The parking brake is automatically operated every time the engine cuts off with a consequent decrease of the oil pressure.



## STEERING

Hydraulically operated steering system that acts on the front and rear wheels by means of double rod hydraulic cylinders in the axles. The operator can select three kinds of steering by means of an electric switch: - two steering wheels - four steering wheels - crab steering

Steering radius:  
 - two steering wheels..... 6.850 mm  
 - four steering wheels..... 4.050 mm



## 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 wind- screen, "manhole" roof, door with safety lock, windscreen-wiper, electric horn, adjustable seat, control system and instrumentation. Outside air inlet.



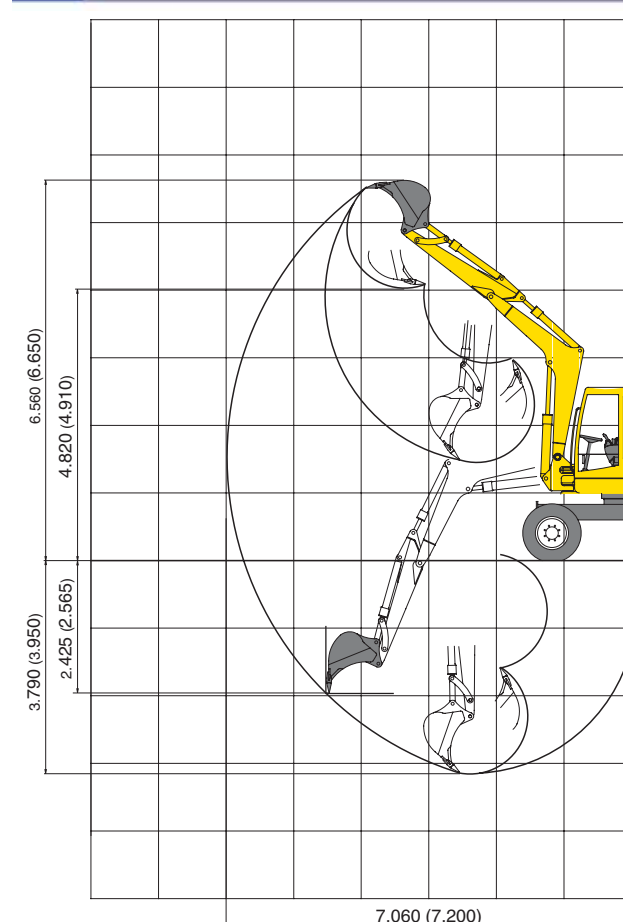
## REFILLS

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

# DIGGING DIAGRAM



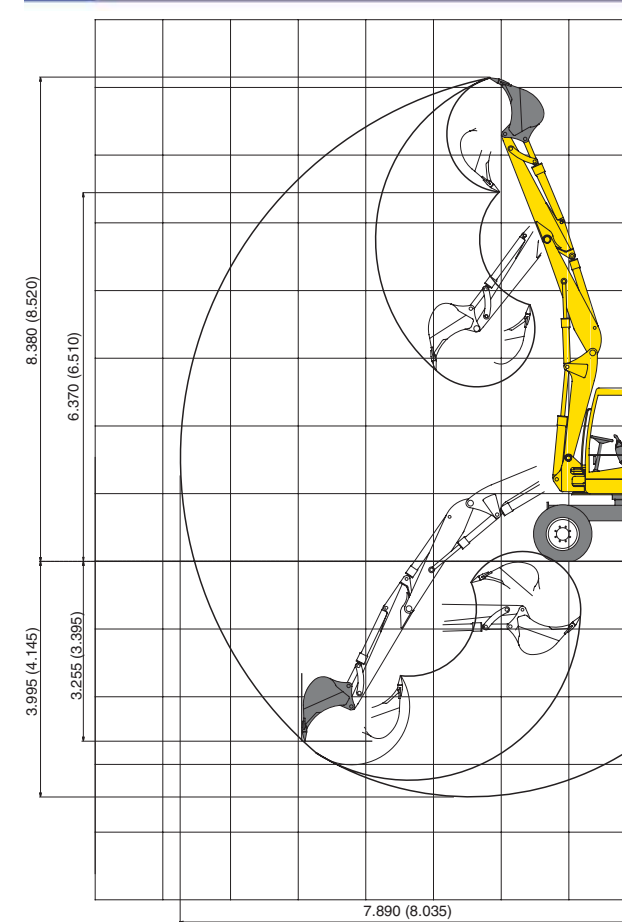
## MONOBOOM



arm 1.850 (2.000)



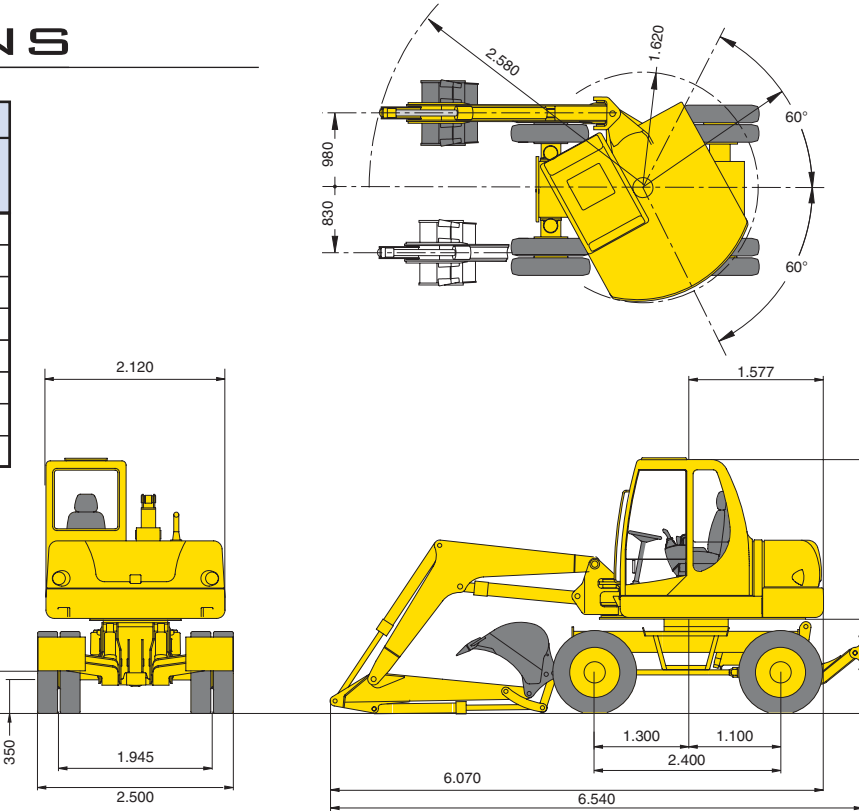
## TWO PIECE BOOM



arm 1.850 (2.000)

# DIMENSIONS

BUCKET RANGE			
Width mm	Capacity m <sup>3</sup> (ISO7451)	Weight kg	Teeth N.
300	0,093	168	2
400	0,15	194	3
500	0,19	218	3
600	0,24	234	4
700	0,28	252	4
800	0,33	270	4
900	0,36	294	5
1.000	0,4	320	5



# STANDARD EQUIPMENT

- 2-piece boom with cylinder protection
- 1.850 mm digging arm
- Coupled tyres 9.00 – 20
- 4 steering wheels
- Cab with heating
- Adjustable seat with safety belt
- Instrumentation including: hour meter – fuel level LCD display – engine water temperature LCD display
- Indicators: air filter clogging, engine oil pressure, generator, hydraulic oil filter, engine pre-heating, parking brake, rear axial lock, selected speed, working light.
- Horn
- 12 V electric plug
- 2 front working lights
- Automatic parking brake
- Swing lock
- Hose burst valves on blade and boom cylinders
- Adjustable element for attachment
- Two elements air filter
- Overload warning device
- Rotating beacon

# OPTIONAL EQUIPMENT

- Air conditioning
- Monoboom
- Stabilisers and/or blade with safety valve
- Hose burst valves (arm and bucket)
- 2.000 mm digging arm
- Single tyres 18 – 19.5
- Auxiliary hydraulic circuit for hammer/clamshell bucket/grasscutter
- Hydraulic hammer
- FOPS protection (on top and on front)
- Bucket range (300 ÷ 1.000 mm)
- Ditch cleaning bucket (1.800 mm)
- Ditch digging bucket (2.100 mm 45°)
- Mechanical or hydraulic quick coupler
- Working light on boom
- Additional counterweight (345 kg)
- Rear view mirror (right side)
- Biodegradable oil
- Fuel filling pump
- Radio
- Travel acoustic alarm
- Rain visor
- Relieve valve for equipment spool



# PW110R-1

## MIDI EXCAVATOR

# PW 110R-1



# PW110R-1

ENGINE POWER  
 71,8 kW - 96,3 HP  
 OPERATING WEIGHT  
 From 9.730 kg  
 to 11.240 kg



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stp - www.stp.it 947033117 - GB - 02/2009  
 This specifications sheet may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require. Materials and specifications are subject to change without notice.

# THE ALTERNATIVE DIMENSION

Especially designed for applications that require compact machines with high digging force and excellent stability, highlighted by independent axle locking, the PW110R-1 delivers performances of a traditional excavators with compact dimensions.

The PW110R-1 has been designed to satisfy all requirements: from heavy duty tasks to more precise finishing operations, always ensuring maximum operator safety. The possibility to choose between 3 different steering modes guarantees exceptional manoeuvrability and controllability in any working situation. The electronic system controls the travelling speed according to the steering mode selected and prevents the operator from making mistakes when selecting. The hydrostatic, four-speed transmission allows a top speed of 32 km/h.

### Engine

The KOMATSU Turbo engine supplies a 69,3 kW / 92,9 HP net power, providing high torque reserve and, above all, reliability. The innovative combustion system guarantees emissions in accordance with the strictest European standards (Stage 2).

### “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.

### Hydraulic System

The CLSS (*Closed Load Sensing System*) hydraulic system fitted on the PW110R-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.



### 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

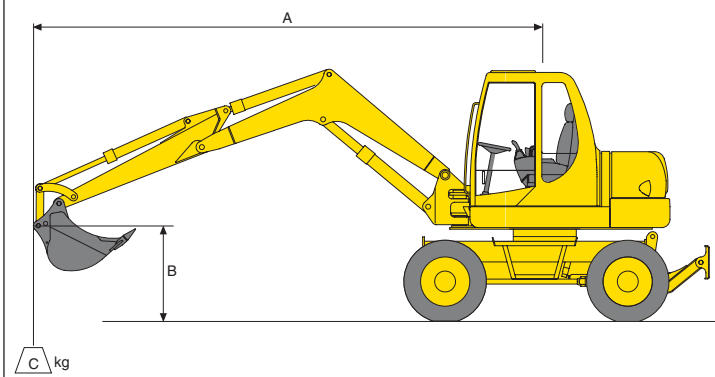
The PW110R-1 can be customised to satisfy all requirements: monoboom or two-piece boom, short or long digging arm; single or twin tyres, blade or stabilisers. In addition, the possibility to adjust the flow-rate and the pressure of the auxiliary lines allows numerous attachments with different specifications to be used.

### Maintenance

All the service points on the PW110R-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

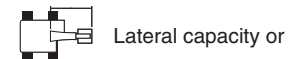


DATAS AND SPECIFICATIONS ARE REFERRING TO THE MACHINE ACCORDING TO 89/392/EC AND EN 474-5 DIRECTIVES

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

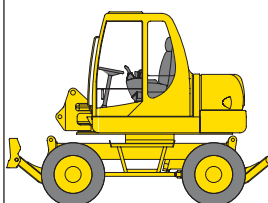


Capacity over front



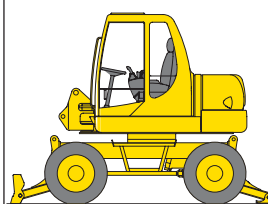
Lateral capacity or capacity over 360°

### WITH BLADE UP



B	A		3,0 m		4,5 m		6,0 m		Max outreach	
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
1.850 mm	4,5 m	kg	-	-	2.100	1.900	-	-	1.000	900
	3,0 m	kg	-	-	1.900	1.700	950	700	800	700
	1,5 m	kg	3.900*	2.600	1.550	1.400	850	650	700	600
	0,0 m	kg	3.750*	2.400	1.400	1.300	-	-	750	650
	-1,5 m	kg	3.500*	2.400	1.650	1.500	-	-	850	750
	-3,0 m	kg	3.200*	2.500	-	-	-	-	1.100	1.000
2.000 mm	4,5 m	kg	-	-	2.000	1.800	1.000	900	950	850
	3,0 m	kg	-	-	1.700	1.550	900	800	850	650
	1,5 m	kg	3.800*	2.500	1.450	1.300	800	700	750	550
	0,0 m	kg	3.600*	2.250	1.300	1.250	800	700	700	600
	-1,5 m	kg	3.400*	2.200	1.550	1.400	-	-	800	700
	-3,0 m	kg	3.100*	2.250	1.650	1.500	-	-	1.050	950

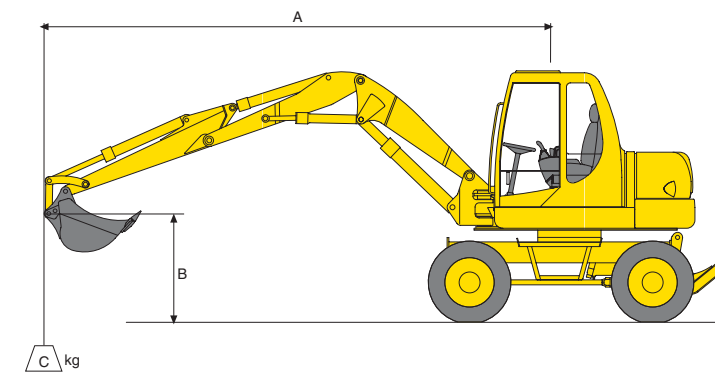
### WITH BLADE AT GROUND LEVEL



B	A		3,0 m		4,5 m		6,0 m		Max outreach	
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
1.850 mm	4,5 m	kg	-	-	2.400*	2.000	-	-	1.100	1.000
	3,0 m	kg	-	-	2.300*	1.800	1.400*	800	900	800
	1,5 m	kg	3.900*	3.900*	2.250*	1.500	1.200*	750	800	700
	0,0 m	kg	5.750*	5.750*	2.100*	1.400	-	-	850	750
	-1,5 m	kg	5.800*	5.800*	2.200*	1.600	-	-	950	850
	-3,0 m	kg	4.000*	4.000*	-	-	-	-	1.200	1.100
2.000 mm	4,5 m	kg	-	-	2.300*	1.900	1.500*	1.000	1.050	950
	3,0 m	kg	-	-	2.200*	1.650	1.250*	900	850	750
	1,5 m	kg	3.800*	3.800*	2.100*	1.400	1.100*	800	750	650
	0,0 m	kg	5.500*	5.500*	2.000*	1.350	1.000*	850	800	700
	-1,5 m	kg	5.600*	5.600*	2.100*	1.500	-	-	900	800
	-3,0 m	kg	3.900*	3.900*	2.250*	1.600	-	-	1.100	1.000

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.

# LIFTING CAPACITY

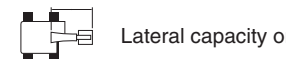


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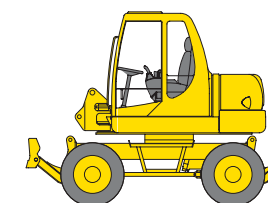


Capacity over front



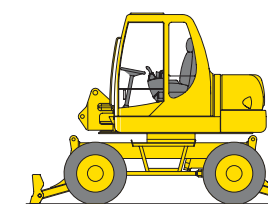
Lateral capacity or capacity over 360°

### WITH BLADE UP



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	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
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	3,0 m	kg	-	-	2.000	1.800	800	700	750	650
	1,5 m	kg	-	-	1.700	1.500	750	650	650	550
	0,0 m	kg	-	-	1.500	1.400	700	600	550	450
	-1,5 m	kg	3.600*	3.600*	1.700	1.600	850	750	700	550
	-3,0 m	kg	3.300*	3.300*	1.850	1.700	-	-	900	800
2.000 mm	4,5 m	kg	-	-	2.100	1.900	900	800	850	750
	3,0 m	kg	-	-	1.800	1.650	800	700	700	600
	1,5 m	kg	-	-	1.600	1.450	750	650	500	400
	0,0 m	kg	-	-	1.400	1.350	700	600	550	400
	-1,5 m	kg	3.500*	3.500*	1.700	1.500	750	700	550	450
	-3,0 m	kg	3.200*	3.200*	1.750	1.600	-	-	850	750

### WITH BLADE AT GROUND LEVEL



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	1,5 m	kg	-	-	2.350*	1.600	1.300*	750	650	550
	0,0 m	kg	-	-	2.200*	1.500	1.200*	700	700	550
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	-3,0 m	kg	3.300*	3.300*	2.500*	1.750	-	-	1.000	900
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	3,0 m	kg	-	-	2.300*	1.750	1.400*	800	800	700
	1,5 m	kg	-	-	2.200*	1.500	1.200*	750	600	500
	0,0 m	kg	-	-	2.100*	1.450	1.100*	700	650	550
	-1,5 m	kg	3.500*	3.500*	2.200*	1.600	1.150*	800	700	550
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