Mini-Excavators EX12/EX15

EX12 = Rated engine HP 12.1 kW (16.5 PS)
Operating weight Canopy: 1 250 kg
Cabin: 1 350 kg
PCSA heaped: 0.024 — 0.046 m³
CECE heaped: 0.02 — 0.04 m³

EX15 Rated engine HP 12.9 kW (17.5 PS)
Operating weight Canopy: 1 350 kg
Cabin: 1 450 kg



Impressive Versatility



OUTSTANDING CONTROLLABILITY AND MOBILITY

Rear-shield Canopy for Protection from Wind and Rain

The standard models are equipped with a rearshield canopy that is specially prepared by

They permit comfortable work even in light rain or a cold wind.





Easy-to-read monitor panel

With the monitor panel, the operator can check machine conditions at a glance from his seat.

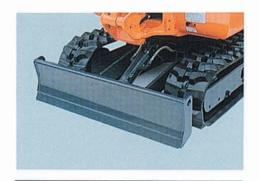


Pilot-control shut-off lever

Pilot-control shut-off lever avoids unintended mishandling when getting in and out of the seat and when the machine is not in use.



Easy-to-clean integrated molded resin floor



Long stay Blade

Long stay blade makes possible efficient leveling and backfilling.

Short Swing Radius and Excavating Force-Best in the Class

For all models, the minimum swing radius are the smallest of their class. This is good for working in water supply and sewerage systems in a restrained area, and work in urban areas such as densely populated areas and streets congested with traffic. The digging force is biggest of its class, large enough to bite into hard ground. The EX12-2 and the EX15-2 in particular are as powerful as the class above.

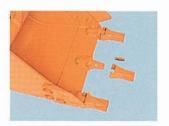
Combined Operations Can Be Performed Smoothly and Reliably

The Hitachi-developed Optimum Hydraulic System (OHS) employed permits combined operations, not only front attachment—swing, but also travel—front which ensures a straight-line travel and smooth motion of the front attachment.



Enhanced High-Guard Protector Weight

The rear corner of the body is provided with a higher guard than Type 1 and it has a larger area. It protects the engine cover etc. from accidental contact.



Further Reinforced Pin Lock Bucket Teeth (Option)

Newly-developed pin lock bucket teeth to fit bucket size are employed.

They can be easily replaced with new ones when weared.



Hardly Rusting Bolts and Nuts

Bolts and nuts are treated with green chromate to prevent rusting.

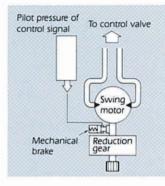
Convenient Utility Box Can also be Used for Consumables (Canopy)

The utility box (No lid type) utilizes canopy poles. It can be used to store tools and consumables.

Highly Reliable Swing Parking Brakes

Because there is no natural coasting when swinging, the swing circle does not rotate when parking on a slope. Also, because no swing lock pins are needed, swing positioning is unnecessary in truck transport, allowing greater safety to be ensured.

It is also effective for preventing the superstructure from slipping during operations such as steering and swing.

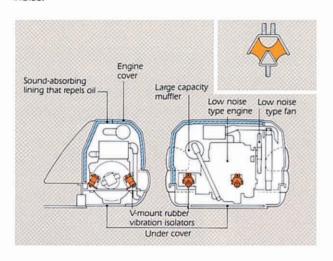




EX12/EX15

Low-noise Models Permitting Urban Construction Work without Producing a Nuisance

Extensive measures were taken to ensure worry-free work even in urban areas by reducing noise. A large-displacement engine provided with a swirl chamber featuring low noise is used at medium speeds to control noise sources. V-mount rubber vibration isolators are also used to reduce vibration and noise, and the engine cover is lined with sound absorbers that are specially treated to prevent oil spread and to minimize noise.



		EX12-2	EX15-2
Noise at operator's ears	dB(A)	76	76
Noise at 7 m away from the machine	dB(A)	63	64

Measuring conditions:

- Level hard ground, no load during idling
- Operator's station: Canopy
- Noise at 7 m away from the machine: average in the four directions around the machine

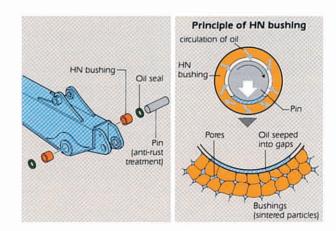


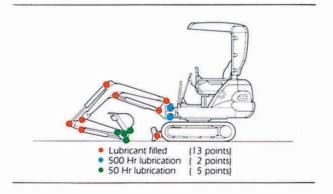
Easy Inspection and Maintenance Permitted by **HN Bushings**

All pin joints of the front attachment and the blade employ newly-developed HN bushings.

These eliminate the need to lubricate most of the parts of the EX12-2 and the EX15-2. (In both models, four pins at the arm tip must be greased at 50h intervals.)

The HN bushings are made of a sintered composite iron alloy vacuum impregnated in micron-sized pores with a highviscosity lubricating oil. They are also applied cementation, so they are highly reliable and durable.







ENGINE

Model	KUBOTA D1105-KA
Type	
2.7	swirl combustion chamber type
	diesel engine
Rated flywheel	12.1 kW (16.5 PS)
horsepower	at 2 000 rpm
(DIN 6271, net)	5.845 5.85 M
Rated flywheel	12.0 kW (16.3 HP)
horsepower	at 2 000 rpm
(SAE J1349, net)	A STATE WILL NOT STATE OF A STATE OF
A STATE OF THE PARTY OF THE PAR	63.7 N·m (6.5 kgf·m)
	at 1 500 rpm
Piston displacement	11221
Bore and stroke	78.0 mm × 78.4 mm
	1 × 12 V, 36 AH



HYDRAULIC SYSTEM

OHS (Optimum Hydraulic System)

This system with two main pumps gives high independence to each actuator for easy and smooth combined operation. Such as travel/blade, travel/swing and travel/arm.

Main pumps	2-Gear pumps
Maximum oil flow	2 × 15.2 L/min
	(2 × 3.3 Imp gpm)
Pilot pump	1-Gear pump
Maximum oil flow	8.7 L/min.
	(1.9 Imp apm)

Relief Valve Settings

Implement circuit	21.1 MPa (215 kgf/cm ²)
Swing circuit	8.8 MPa (90 kgf/cm ²)
Travel circuit	21.1 MPa (215 kgf/cm ²)
Pilot circuit	3.9 MPa (40 kgf/cm²)

Hydraulic Cylinders

High-strength piston rods and tubes. Cylinder cushion mechanisms provided in boom and boom swing cylinders to absorb shocks at stroke ends.

Dimensions

	Quan.	Bore	Rod dlameter	
Boom	Ĭ.	55 mm	455 mm	
Arm 1 Bucket 1		55 mm	390 mm	
		55 mm	315 mm	
Boom swing 1		65 mm	380 mm	
Blade I		65 mm	100 mm	



CONTROLS

Pilot controls (for front and swing operations). Light touch and excellent controllability



SUPERSTRUCTURE

Swing Mechanism

High-torque, axial piston motor with planetary reduction gear is bathed in oil. Swing circle is single-row, shear-type ball bearing with induction-hardened internal gear. Internal gear and pinion gear are immersed in lubricant. Swing parking brake is spring-set/hydraulic-released disc type. Swing shockless valve built in swing motor absorbs shocks when stopping swing, ensuring smooth stops. Also counter balanceless system is employed for smooth operation when starting and stopping swing.

Canopy Left: 90°, Right: 50° Cabin Left: 70°, Right: 50° Swing speed

Operator's Cab (Factory Option)

Independent roomy cab, conforming to ISO* Standards. Reinforced glass windows on all 4 sides for all-round visibility. Front window (upper side), fully openable, are spring-assisted for easy storing in the cab and for absorbing shocks during lowering.

*International Standard Organization

UNDERCARRIAGE

Tracks

Tractor-type undercarriage. Heavy-duty track frame of all welded structure. Top-grade materials employed for heavy-duty operation. Side frames are rigidly welded to the track frame.

Rugged track frame and sloped side frames for easy mud removal.

Numbers of Rollers and Guide Plate on Each Side

Guide plate Lower rollers

Traction Device

Each track driven by a high-torque, axial piston travel motor through planetary reduction gear, allowing counterrotation of the tracks. Travel speeds 0 to 2.2 km/h 10.8 kN (1 100 kgf) Maximum traction force



WEIGHTS AND GROUND PRESSURE

Equipped with 1.64 m boom, 0.84 m arm and 0.041 m3 (PCSA heaped) bucket.

Chan han	Shoe	Standard undercarriage				
Shoe type	width	Operating weight	Ground pressure			
*Rubber (canopy) (cabin)	230 mm	1 250 kg	24.1 kPa (0.25 kgf/cm ²)			
	230 mm	1 350 kg	26.0 kPa (0.26 kgf/cm²)			
Double grouser (canopy)	230 mm	1 300 kg	25.2 kPa (0.26 kgf/cm ²)			
(cabin)	230 mm	1 400 kg	27.1 kPa (0.28 kgf/cm²)			

^{*}Mark is standard specifications.

SERVICE REFILL CAPACITIES

	liters	Imp gal
Fuel tank	20	4.4
Engine coolant	3.5	0.8
Engine oil	4.5	1.0
Travel final device (each side)	0.33	0.07
Hydraulic tank	30	6.6

Buckets

	acity	Width				Recommendation							
n	1.3	m	m	No. of	Weight	1.64 m	boom						
PCSA heaped	CECE heaped	Without side cutters	With side cutters	teeth	teeth	teeth	teeth	teetn	teetn	teeth	kg	*0.84 m arm	1.04 m arm
0.024	0.02	225	250	2	25	0	0						
0.035	0.03	325	350	3	29	0	0						
0.041	0.035	385	410	3	31	0							
•0.046	0.04	425	450	3	32		Δ						
- W	A: Arm	n crowd force		kN (kgf)		8.0 (820)	7.4 (750)						
B	B: Bucket digging force			kN	(kgf)	12.4 (1	260)						

*Marks are standard specifications

O Suitable for materials with density of 2 000 kg/m³ or less
 Suitable for materials with density of 1 600 kg/m³ or less
 ∆ Suitable for materials with density of 1 100 kg/m³ or less

CANOPY TYPE

LIFTING CAPACITIES

Side: Rating over-side or 360 degrees Front: Rating over-front

With dozer blade above ground

Unit: 1 000 kg

	Load	Load Load		radius		At many manch			
Condition	point	2	m 3		3 m		At max. reach		
	m	Side	Front	Side	Front	Side	Front	@m	
Boom: 1.64 m Arm: 0.84 m Bucket PCSA: 0.041 m ³ CECE: 0.035 m ³ Rubber shoe 230 mm	2	*0.27	*0.27			0.14	0.18	3.01	
	1	0.26	0.32	0.14	0.17	0.12	0.15	3.28	
	(Ground)	0.24	0.30	0.13	0.17	0.12	0.16	3.10	
	-1	0.24	0.30						

With dozer blade on ground

Unit: 1 000 kg

Condition	Load	Load radius			At max, reach			
	point	2	m	3 m		At max, reach		
	m	Side	Front	Side	Front	Side	Front	@m
Boom: 1.64 m Arm: 0.84 m Pucket PCSA: 0.041 m³ CECE: 0.035 m³ Rubber shoe 230 mm	2	•0.27	•0.27			0.14	*0.27	3.01
	1	0.26	*0.45	0.14	*0.30	0.12	*0.28	3.28
	(Ground)	0.24	*0.58	0.13	*0.32	0.12	*0.29	3.10
	-1	0.24	*0.44					

Rating are based on SAE J1097

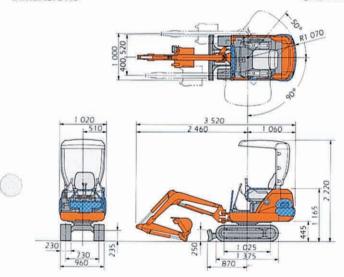
- Lifting capacity does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

 The load point is a hook (not standard equipment) located on the back of the bucket.

4. *Indicates load limited by hydraulic capacity.

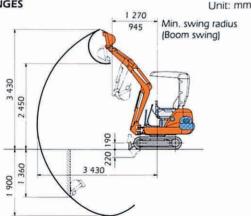
DIMENSIONS

Unit: mm



WORKING RANGES

Unit: mm



CABIN TYPE

LIFTING CAPACITIES

Side: Rating over-side or 360 degrees

Front: Rating over-front

With dozer blade above ground

Unit: 1 000 kg

	Load	Load radius`			As many manager			
Condition	point height	2	m	3 m		At max. reach		
	m	Side	Front	Side	Front	Side	Front	@m
Boom: 1.64 m Arm: 0.84 m Bucket PCSA: 0.041 m ³ CECE: 0.035 m ³ Rubber shoe 230 mm	2					0.16	0.20	3.01
	1	0.30	0.37	0.16	0.20	0.14	0.17	3.28
	(Ground)	0.27	0.35	0.15	0.19	0.15	0.19	3.10
	-1	0.28	0.35					

With dozer blade on ground

Unit: 1 000 kg

Condition	Load	Load radius				At may coach		
	point height	2	m	3 m		At max. reach		
	m	Side	Front	Side	Front	Side	Front	@m
Boom: 1.64 m Arm: 0.84 m Bucket PCSA: 0.041 m ³ CECE: 0.035 m ³ Rubber shoe 230 mm	2					0.16	*0.27	3.01
	1	0.30	*0.45	0.16	*0.30	0.14	*0.28	3,28
	(Ground)	0.27	*0.58	0.15	*0.32	0.15	*0.29	3.10
	-1	0.28	*0.44					

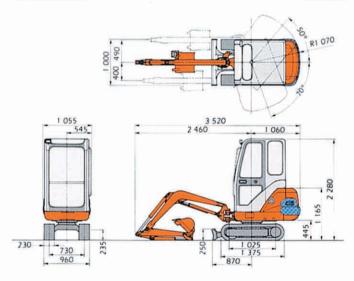
Rating are based on SAE J1097 Notes: 1

- Lifting capacity does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
 The load point is a hook (not standard equipment) located on the back of the bucket.

4. *Indicates load limited by hydraulic capacity.

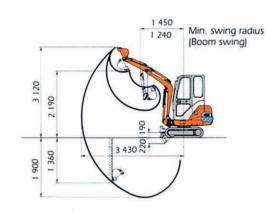
DIMENSIONS

Unit: mm



WORKING RANGES

Unit: mm







ENGINE

Model	KUBOTA DI105-KA
Туре	
and the state of the	diesel engine
Rated flywheel	12.9 kW (17.5 PS)
horsepower (DIN 6271, net)	at 2 100 rpm
Rated flywheel	12.7 kW (17.3 HP)
horsepower (SAE J1349, net)	at 2 100 rpm
Maximum torque	
Piston displacement	1 123 L
Bore and stroke	78 mm × 78.4 mm
Battery	1 x 12 V 36 AH



HYDRAULIC SYSTEM

OHS (Optimum Hydraulic System)

This system with two main pumps gives high independence to each actuator for easy and smooth combined operation. Such as travel/blade, travel/swing and travel/arm.

Main pumps	2-Gear pumps
Maximum oil flow	2 × 16.0 L/min
	(2 × 3.5 lmp gpm)
Pilot pump	
Maximum oil flow	9.1 L/min.
	(2.0 Imp gpm)

Relief Valve Settings

Implement circuit	21.1 MPa	(215 kgf/cm ²)
Swing circuit	8.8 MPa	90 kgf/cm ²)
Travel circuit	21.1 MPa	(215 kgf/cm ²)
Pilot circuit	3.9 MPa	(40 kgf/cm ²)

Hydraulic Cylinders

High-strength piston rods and tubes. Cylinder cushion mechanisms provided in boom and boom swing cylinders to absorb shocks at stroke ends.

Dimensions

	Quan.	Bore	Rod dlameter
Boom	1	55 mm	455 mm
Arm	1	60 mm	420 mm
Bucket	1	55 mm	315 mm
Boom swing	1	65 mm	380 mm
Blade	1	65 mm	100 mm



CONTROLS

Pilot controls (for front and swing operations), light touch and excellent controllability.



SUPERSTRUCTURE

Swing Mechanism

High-torque, axial piston motor with planetary reduction gear is bathed in oil. Swing circle is single-row, shear-type ball bearing with induction-hardened internal gear. Internal gear and pinion gear are immersed in lubricant. Swing parking brake is spring-set/hydraulic-released disc type. Swing shockless valve built in swing motor absorbs shocks when stopping swing, ensuring smooth stops. Also counter balanceless system is employed for smooth operation

when starting and stopping swing.	ciripioye				
Swing speed		9.0	min ⁻	1 (9.0	rpm
Boom swing angle	Canopy	Left:	90°.	Right:	50°
	Cabin	Left.	70°	Right:	50°

Operator's Cab (Factory Option)

Independent roomy cab, conforming to ISO* Standards. Reinforced glass windows on all 4 sides for all-round visibility. Front window (upper side), fully openable, are spring-assisted for easy storing in the cab and for absorbing shocks during lowering.

*International Standard Organization

UNDERCARRIAGE

Tracks

Tractor-type undercarriage. Heavy-duty track frame of all welded structure. Top-grade materials employed for heavy-duty operation. Side frames are rigidly welded to the track frame.

Rugged track frame and sloped side frames for easy mud removal.

Numbers of Rollers and Guide plate on Each Side Guide plate Lower rollers

Traction Device

Each track driven by a high-torque, axial piston travel motor through planetary reduction gear, allowing counterrotation of the tracks. . 0 to 2.3 km/h
 Travel speeds
 0 to 2.3 km/h

 Maximum traction force
 10.8 kN (1 100 kgf)

 Gradeability
 30° (58%) continuous



WEIGHTS AND GROUND PRESSURE

Equipped with 1.8 m boom, 0.93 m arm and 0.046 m3 (PCSA heaped) bucket.

Paragraph and the control of the con	Shoe	Standard undercarriage				
snoe type	width	Operating weight	Ground pressure			
*Rubber (canopy)	230 mm	1 350 kg	26.0 kPa (0.26 kgf/cm³)			
(cabin)	width (1 450 kg	27.8 kPa (0.28 kgf/cm²)			
Double grouser (canopy)	230 mm	1 400 kg	27.1 kPa (0.28 kgf/cm²)			
(cabin)	230 mm	1 500 kg	29.0 kPa (0.30 kgf/cm²)			

^{*}Mark is standard specifications.



SERVICE REFILL CAPACITIES

	liters	Imp gal
Fuel tank	20	4.4
Engine coolant	3.5	0.8
Engine oil	4.5	1.0
Travel final device (each side)	0.33	0.07
Hydraulic tank	30	6.6

Buckets

Cap	acity	Wi	dth	1.57 - 10 50		Recomm	endation	
n	n ³	m	No. of	Weight	1.8 m boom			
PCSA heaped	CECE heaped	Without side cutters	With side cutters	No. of teeth kg 2 25 3 29 3 31 3 32	*0.93 m arm	1.13 m arm		
0.024	0.02	225	250	2	25	0	0	
0.035	0.03	325	350	3	29	0	0	
0.041	0.035	385	410	3	31	0	0	
*0.046	0.04	425	450	450 3	3	32	0	
0.052	0.045	475	500	4	36		Δ	
- W-	A: Arm	crowd force	e	k	N (kgf)	9.0 (920)	8.0 (820)	
В	B: Buck	et digging fo	orce	k	N (kgf)	12.4(1	260)	

*Marks are standard specifications

- Suitable for materials with density of 2 000 kg/m³ or less
 □ Suitable for materials with density of 1 600 kg/m³ or less
 △ Suitable for materials with density of 1 100 kg/m³ or less

CANOPY TYPE

LIFTING CAPACITIES

Side: Rating over-side or 360 degrees Front: Rating over-front

With dozer blade above ground

Unit: 1 000 kg

	Load		Load	4.					
Condition	point	2	2 m		3 m		At max. reach		
Boom: 1.8 m Arm: 0.93 m Bucket	m	Side	Front	Side	Front	Side	Front	@m	
Boom: 1.8 m Arm: 0.93 m Bucket PCSA: 0.046 m ³ CECE: 0.04 m ³ Rubber shoe 230 mm	2	•0.26	*0.26			0.13	0.16	3.30	
	1	0.28	0.33	0.15	0.18	0.11	0.13	3.54	
	(Ground)	0.25	0.31	0.14	0.17	0.12	0.14	3.38	
	-1	0.25	0.31			0.16	0.20	2.71	

With dozer blade on ground

Unit: 1 000 kg

	Load	Load radius					At many consists		
Condition	point height	2	m	3	3 m		At max, reach		
	m	Side	Front	Side	Front	Side	Front	@m	
Boom: 1.8 m Arm: 0.93 m Sucket PCSA: 0.046 m ³ CECE: 0.04 m ³ Rubber shoe 230 mm	2					0.13	*0.28	3.30	
	1	0.28	*0.52	0.15	*0.33	0.11	•0.29	3.54	
	(Ground)	0.25	*0.69	0.14	*0.37	0.12	*0.31	3.38	
	-1	0.25	*0.59			0.16	*0.32	2.71	

Rating are based on SAE J1097

- Lifting capacity does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

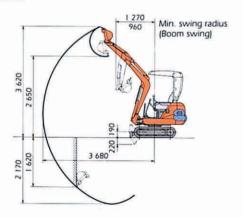
 The load point is a hook (not standard equipment) located on the back of the bucket.

*Indicates load limited by hydraulic capacity.

DIMENSIONS Unit: mm R1 070 3 630 2 570

WORKING RANBES

Unit: mm



CABIN TYPE

LIFTING CAPACITIES

Side: Rating over-side or 360 degrees Front: Rating over-front

With dozer blade above ground

Unit: 1 000 kg

	Load		Load	radius	۸.	Automorphism (Control			
Condition	point	2	m	3 m		At max. reach			
	m	Side	Front	Side	Front	Side	Front	@m	
Boom: 1.8 m	2					0.15	0.18	3.30	
Arm: 0.93 m Bucket	1	0.32	0.38	0.17	0.21	0.13	0.16	3.54	
PCSA: 0.046 m ³ CECE: 0.04 m ³ Rubber shoe 230 mm	(Ground)	0.30	0.35	0.16	0.20	0.14	0.16	3.38	
	-1	0.29	0.35			0.19	0.23	2.71	

With dozer blade on ground

Unit: 1 000 kg

	Load	Load radius				4.	At max, reach		
Condition	point	2	2 m		m	At	max. rea	acn	
	m	Side	Front	Side	Front	Side	Front	@m	
Boom: 1.8 m	2					0.15	*0.28	3.30	
Arm: 0.93 m Bucket	1	0.32	*0.52	0.17	*0.33	0.13	*0.30	3.54	
PCSA: 0.046 m ³ CECE: 0.06 m ³ Rubber shoe 230 mm	(Ground)	0.29	*0.69	0.16	*0.38	0.14	*0.32	3.38	
	-1	0.29	*0.59			0.19	*0.32	2.71	

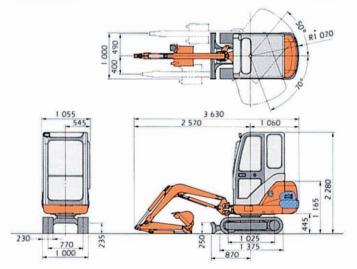
- Notes: 1. Rating are based on SAE J1097.
 2. Lifting capacity does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

 The load point is a hook (not standard equipment) located on the back of the bucket.

4. *Indicates load limited by hydraulic capacity.

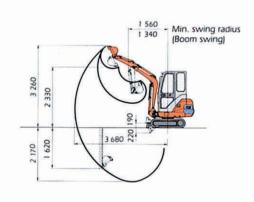
DIMENSIONS

Unit: mm



WORKING RANGES

Unit: mm



These specifications are subject to change without notice. Models and specifications may vary by country, so, please consult your Hitachi dealer for details.

Hitachi Construction Machinery Co., Ltd.

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Cable Address: "TOKHITACHIKENKI"