

Improvements made to the safety features and operability

Environment-friendly

- USEPA Tier 4 and EU Stage 3 compliant engine
- New control valve reduces the fuel consumption

Operability

- Operation made easier with the newly fitted 7-inch wide Liquid Crystal Display
- Improvements made for faster cycle time due to the newly adopted hydraulic system

Maintainability

- Good access to service parts
- Safe features for maintenance

Safety

- New ROPS cabin for safer and comfortable operation
- New engine neutral start mechanism

Comfortable cabin

- New air conditioner
- Complete interior
- Operability is improved
- Pressurizing function

New APC

- Large size liquid crystal display
- Touch screen control
- Rear and side view monitor are available



Further advancements on eco-friendliness and operability

1 High performance and environment-friendly Isuzu engine



Selective Catalytic Reduction (SCR) system

The SCR system cuts the NOx (nitrogen oxides), PM (particulate matter) and NMHC (non-methane hydrocarbon). The emission control is compliant with Stage 4 and Tier 4.

EGR (Exhaust Gas Recirculation) system

The large capacity water-cooled EGR cooler suppresses the NOx.

Significant Reduction of the released PM

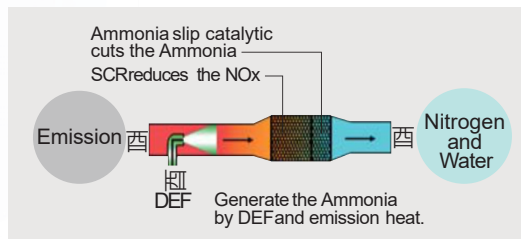
There is high precision combustion control resulting from the combination of the high pressure common rail fuel injection system and a multistage fuel injection.

2 Selective Catalytic Reduction (SCR) system

The SCR system provides chemical reaction between Urea and NOx in emission. This reaction generates Nitrogen and Water which are friendly to the environment.

The large capacity DEF (Desel Exhaust Fluid) tank

DEF replenishment is every 1 time per 2 times of fuel replenishment (subject to working condition). DEF tank is located inside of the tool box and easy to access.



The fuel economy is increased by **4%** (Compared with Previous model at P mode)

3 Refurbished hydraulic system for improved operability

New Control Valve

Pressure loss reduction is contributory to low fuel consumption. The add-on valve is now mountable, hence smartly corresponding to the conventional optional equipment that require additional space for certain necessary valves. In addition, KATO has a traditionally fine cut and smoothly refined compatible feeling made by detailed tuning.



New main pump

Contributory to reduction in fuel consumption is the newly mounted efficient main pump. Moreover, a variety of optional equipment can now be accommodated for due to the PTO pump being mountable.



High mileage

Diameter of the boom and bucket cylinder hose have been increased. It reduces pressure loss and minimizes power loss.



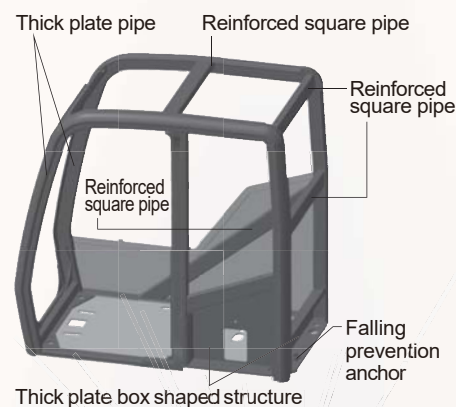
Lever operational ability lightened

Light operational feeling is actualized due to reduced lever response. Operational fatigue has also been lessened.



Safer cabin with various features

The KATO original cabin is durable and of smart design. The cabin is compliant with ROPS safety standard (ISO12117-2). It secures the safety and protection of the operator from roll-over over accident. The cabin is also compliant with ISO10262 (Top guard level) and protect the operator from falling objects.



Window and rise up wiper

The large size right window and the rise up wiper secure excellent view. The wiper is storable to the right pillar.



Polycarbonate door window

Polycarbonate prevents the crack comes from scattering stone. Hard coating which has provided to surface secures high resistance to yellowing or scratch.

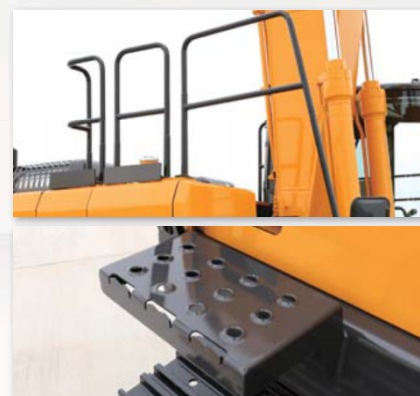


Safety lock lever

The new electronic control lock mechanism enhances safety and prevents miss operation. It locks the hydraulic circuit in case the console is jumped up. The engine start operation is active only when the lever is applied to lock position.

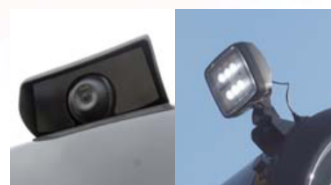
Other safe features

- Rearview camera
- Sideview camera (option)
- Emergency engine stop switch
- Emergency escape hammer
- Seatbelt
- Firewall
- Fanguard
- Retractable side mirror
- LED working light (option)
- Fire extinguisher (option)



Handrail and step

To prevent falling accident, the handrail has been provided to the upper structure. The large size anti-slip step enables operator to access the upper structure safer.



Best comfort and high efficiency



Heat & cold insulation box

It is capable of storing 6 drink bottles (500mL).



Rear storage space

It is capable of storing objects such as 2L sized drink bottle.



New foot rest arrangement

The foot rest has been relocated to optimum position. Replacement of the floor mat has become easier.



Drink holder

Soft material is used for the drink holder. Various arrangements are available.



New operation lever

Operation switches are arranged to up and bottom. Round shape grip is easy to handle.



Pressurized cabin

It prevents dust by enhancing the airtightness.

Air conditioner

- Air volume is increased by 26%
- Filter is paper type

Other cabin features

- Seat suspension with large size shock absorber
- Luggage space
- Helmet hook
- AM/FM radio with 2 speakers
- USB port (option)
- 12V electric port (option)
- Ash tray (option)
- Sun visor (option)
- Rain visor (option)
- Transparent roof hatch (option)



Luggage space



USB port (option)

New APC for smart operation



Visibility

Large and high resolution display

The display is 7 inch size and IPS liquid crystal display provides high quality image.

Safety

Rear view camera for standard feature

Operator is able to confirm rear and side view through dual view display (side view camera is an option).



It indicates rear and side view at the same time.

Operability Touch screen control is available for all operation.



Mode selection

Pull-down menu enables operator to confirm all mode on the display at once.



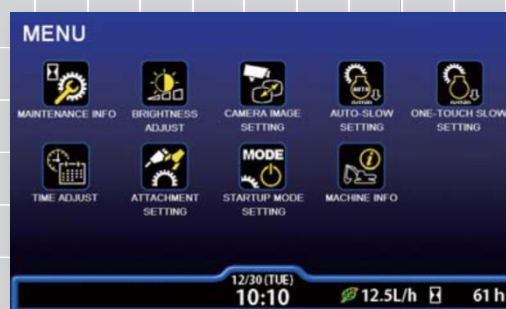
Alarm message

The display indicates various alarms. It also indicates the DEF aqueous fluid replenishing timing.



Air conditioner

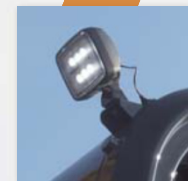
The air conditioner operation is available on the display.



Various information

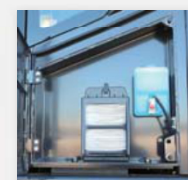
Operator is able to set up to display various information such as maintenance information.

High performance and superior maintenance



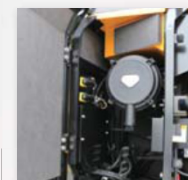
LED light (option)

The LED lights have been provided to the cab, right-front and the boom.



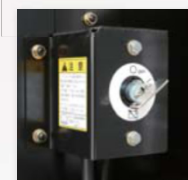
Cab maintenance space

It is able to replace the filter for the air conditioner and replenish the washer fluid from the cab maintenance space located outside of the cab.



Equipment layout

Electrical components are centralized in the cab rear.



Battery disconnect switch

It is capable to shut down the battery completely in non-operation state. The maintenance of electronic devices becomes safer.



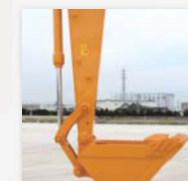
Greasing port for slewing motor

The extension hose has been provided to the slewing motor. The greasing port is located which is easy to access.



High performance bush

The new dimple design bush keeps the grease longer than before. These have been provided to boom foot, arm foot and arm top.



Mounting seat for additional piping

Boom and arm additional piping seat is now available as a standard feature. Hence making possible the mounting of additional piping without the burden of welding.



Fuel main filter

Adopts a cartridge-type filter and is located in the right-rear position which is easy to access.



Cooling system

The expansion tank (pressurized reserve tank) is located on top of the radiator, with improved air venting to the engine and coolability.



Large capacity tool box

The large size tool box that is capable to store such as tool set, 10L DEF aqueous fluid container.



DEF refilling port (DEF tank)

It is fixed in an easily accessible location making refilling of the DEF easier to carry out.



Technical Specifications

ENGINE

Model..... ISUZU4HK1X
 Type..... 4-cycle, water-cooled, in-line, direct injection with turbocharged
 Number of cylinders..... 4
 Bore & Stroke..... 115 mm × 125 mm
 Total displacement..... 5.193 L
 Rated output..... 128.4kW/2,000min⁻¹ (ISO 14396)
 120.5kW/2,000min⁻¹ (ISO 9249 Net)
 Max. torque..... 670N·m/1,600min⁻¹ (ISO 14396)
 646N·m/1,600min⁻¹ (ISO 9249 Net)
 Compression ratio..... 16.5:1
 Cooling system..... Pressurized coolant circulated by coolant pump with the thermostat and expansion tank
 Lubrication system..... Pressurized oil fed by a gear pump through full-flow and by-pass cartridge filter
 Starter..... Electric, 24V-5.0kW
 Generator..... Alternator, 24V-50A
 Air cleaner..... Double element Dry type filter

HYDRAULIC SYSTEM

Pumps..... Double variable piston pump and gear pump
 Max. discharge flow..... 2×248L/min
 Max. discharge pressure..... 34.3MPa
 Max. discharge pressure (high power)..... 36.3MPa
 Oil filtration..... Full-flow filter with replaceable element, a pilot line filter and suction strainer
 Control valves..... 5+4 section multiple control valves (with one free service circuit)
 Pilot pump..... Gear type
 Oil cooler..... Finned tube, forced ventilation
 Pressure relief valves..... Primary and secondary on each circuit

SWING SYSTEM

Drive..... Axial piston motor with shockless valve and reduction gear.
 Brake..... A hydraulic brake that locks automatically when the swing control lever is in the neutral position and a mechanical parking brake which is applied when the safety lock lever is pulled backwards, the engine is turned off or the swing control lever is in the neutral position.
 Lubrication..... Completely housed and grease bathed
 Max. swing speed..... 14.0min⁻¹

TRAVEL SYSTEM

Drive..... Independent axial piston motor with reduction for each side
 Brakes..... Independent disk parking brake for each side, applied automatically when the travel levers are in the neutral position.
 Track shoes..... 46 each side
 49 each side (LC)
 Track adjustment..... Grease cylinders with recoil springs
 Lubrication..... Sealed-for-life rollers and front idlers with floating seals
 Travel speed..... High 0~5.9km/h
 Low 0~3.9km/h
 Gradeability..... 70% (35°)
 Max. drawbar pull..... 187kN

DIGGING FORCE (ISO 6015)

Bucket digging force..... 150kN at high power
 159kN
 Arm (2.93m) digging force..... 109kN at high power
 115kN

SERVICE DATA

Fuel tank..... 420 L
 Cooling system..... 40 L
 Engine oil..... 26 L
 DEF tank capacity..... 55 L
 replenishment..... 46 L
 Track drives..... 2×5.0L
 Hydraulic oil tank level..... 165 L
 system..... 260 L

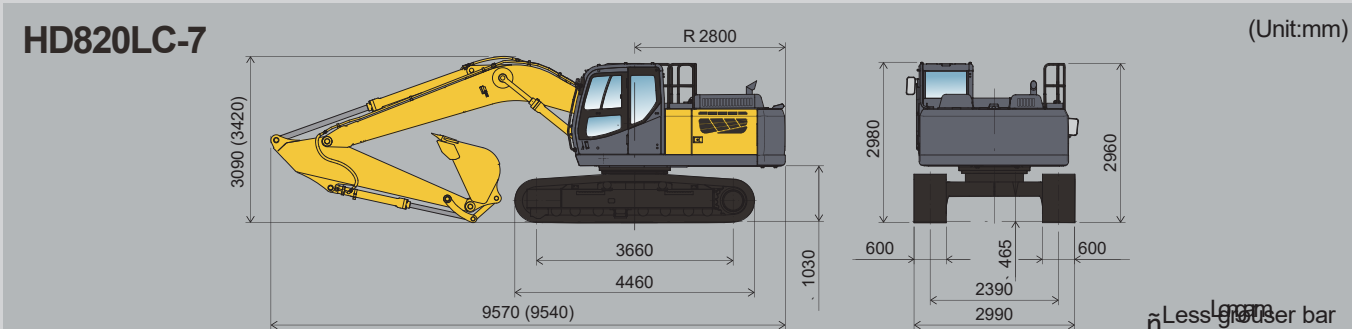
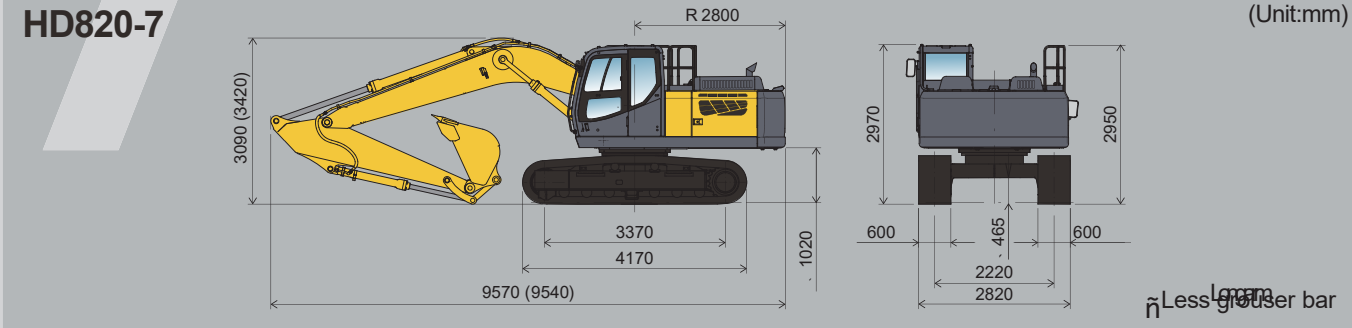
CABIN & CONTROLS

Type..... All weather sound suppressed, cab mounted on 6 point viscous mounting.
 Right hand levers..... Controls the boom & bucket
 Inner right hand lever (with foot pedal)..... Controls the right hand track
 Inner left hand lever (with foot pedal)..... Controls the left hand track
 Left hand levers..... Controls the arm & swing
 Pilot controls..... Travel, boom, arm, bucket and swing
 Engine throttle..... Electric "Accell dial"
 Meters & gauges..... Hour meter, water temperature, DEF and fuel level
 Working lights..... Provided on the boom left side and right front cover
 Lubrication chart..... Inside of the right front side cover
 Quick Selection of Working Modes.....
 P: Professional mode for the experienced operator. Established both power and good response
 A: All-round multipurpose Mode for all application from precision work to heavy duty work by stroke of operation levers
 E: ECO Mode for economical works
 ● Color monitor display with touch screen
 ● Rear / side View monitor

AIR CONDITIONER

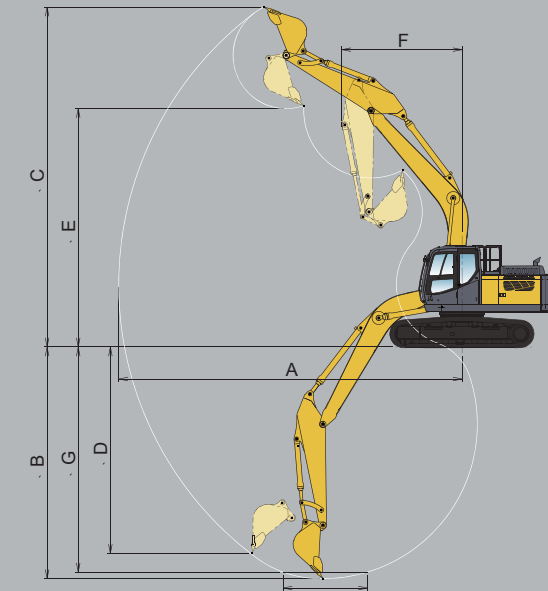
Air conditioner gas contains fluorinated greenhouse gases.
 Industrial designation..... HFC-134a
 Quantity..... 1.0kg
 CO₂ equivalent..... 1.43ton
 Global warming potential (GWP)..... 1430

Dimensions



Working Ranges

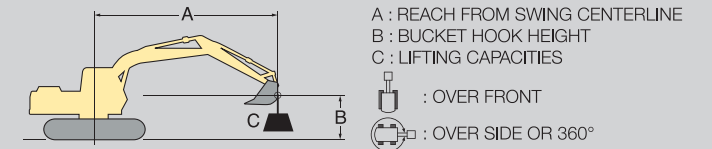
Standard backhoe



Unit : mm *Less grouser bar

Range	Arm	Standard boom	
		Standard arm 2.93m	Long arm 3.92m
A : Maximum digging radius		9,930	10,880
* B : Maximum digging depth		6,700 <6,690>	7,700 <7,690>
* C : Maximum digging height		9,830 <9,840>	10,400 <10,410>
* D : Maximum vertical wall		5,970 <5,960>	7,090 <7,080>
* E : Maximum dumping height		6,890 <6,900>	7,430 <7,440>
F : Minimum swing radius		3,480	3,380
* G : Maximum digging depth at 2,440mm (8ft) floor length		6,530 <6,520>	7,560 <7,550>

< ->HD820LC-7



Lifting Capacities

HD820-7 BOOM: 5.63 m, ARM: 2.93 m, BUCKET: 0.8 m³ (650kg), SHOE WIDTH: 600mm, COUNTERWEIGHT: 4,000kg Unit:kg

LIFT POINT HEIGHT B(m)	LIFT POINT RADIUS A(m)										AT MAXIMUM LIFT POINT RADIUS		
	1.50		3.00		4.50		6.00		7.50		RADIUS (m)		
	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°			
7.50							3640	3640			3580	3580	6.09
6.00							4020	4020			3020	3020	7.45
4.50							4600	4400	4460	2950	3010	2520	8.12
3.00			5500	5500	6920	6530	5530	4120	4330	2820	3150	2240	8.47
1.50			4960	4960	5690	5690	5990	3830	4180	2670	3360	2130	8.54
0.00			5200	5200	5130	5130	5760	3620	4060	2560	3430	2150	8.35
-1.50	6500	6500	5080	5080	5050	5050	5640	3520	4000	2510	3730	2340	7.87
-3.00	5670	5670	4910	4910	5190	5190	5660	3730			4460	2810	7.03
-4.50			4930	4930	5750	5750					6340	4000	5.70

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LIFT POINT HEIGHT B(m)	LIFT POINT RADIUS A(m)										AT MAXIMUM LIFT POINT RADIUS		
	1.50		3.00		4.50		6.00		7.50		RADIUS (m)		
	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°	OVER FRONT	OVER SIDE OR 360°			
7.50							3640	3640			3580	3580	6.09
6.00							4020	4020			3020	3020	7.45
4.50							4600	4600	4460	3280	3010	2810	8.12
3.00			5500	5500	6920	6920	5530	4580	4910	3150	3150	2520	8.47
1.50			4960	4960	5690	5690	6560	4290	4800	3000	3430	2400	8.54
0.00			5200	5200	5130	5130	6660	4070	4680	2890	3930	2430	8.35
-1.50	6500	6500	5080	5080	5050	5050	6540	3960	4630	2840	4310	2650	7.87
-3.00	5670	5670	4910	4910	5190	5190	6560	3980			5150	3170	7.03
-4.50			4930	4930	5750	5750					6970	4490	5.70

NOTE : 1. Lifting capacities are based on ISO 10567.
 2. Lifting capacities shown do not exceed 87% of machine hydraulic capacity or 75% of minimum tipping load.
 3. Capacities marked with an asterisk (*) are limited by hydraulic capacities.
 4. Lifting capacities are based on machine standing on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground.
 5. Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
 6. Capacities apply only to the machine as originally manufactured and equipped by KATO WORKS CO., LTD.
 7. The operator should be fully acquainted with the instruction manual before operating the machine.