





# HD823<sub>MR</sub>-7

REGZAM | HYDRAULIC EXCAVATOR

# High performance & Environment friendly KATO compact tail excavator



## Complete operation

- New hydraulic system increases the cycle time
- Lever operation burden has reduced

## Maintainability

- Good access to service parts
- Daily cleaning has been facilitated
- Safe features for maintenance

## Safety

- New ROPS cabin
- New engine neutral start mechanism

## Comfortable cabin

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

## New APC

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

## Environment-friendly

- US EPA Tier 4 and EU StageIV compliant engine
- New control valve reduces the fuel consumption



# 7 High productivity and comfort 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 Stage4 and Tier4.

### EGR (Exhaust Gas Recirculation) system

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

### Digging force

- Max. bucket digging force ..... 150 kN
- at high power ..... 159 kN
- Max. arm digging force ..... 109 kN
- at high power ..... 115 kN

### Working range

- Max. digging radius ..... 9,930 mm
- Max. digging depth ..... 6,690 mm
- (STD position)
- Max. digging depth ..... 5,260 mm
- (optional small swing position)
- Max. digging height ..... 9,840 mm
- (STD position)
- Max. digging height ..... 11,330 mm
- (optional small swing position)

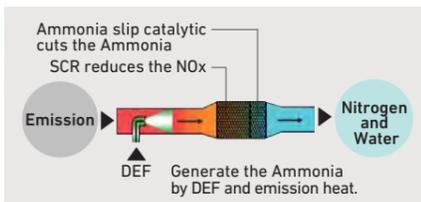
Cycle time is increased by **9%** (compared with HD823MR-6 at P mode)

## 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 environment.

### The large capacity DEF (Desel Exhaust Fluid) tank

DEF replenishment is every 1 time per 3 times of fuel replenishment (subject to working condition).



## 3 New hydraulic system design

### New control valve

The internal mechanism of the control valve has been facilitated. It reduces the pressure loss and supports the low fuel consumption operation. The additional valve can be attached and optional operations are available.



### New main pump

The new main pump reduces the fuel consumption. The PTO pump can be installed which allows optional operation.



### Large size hydraulic hose and pipe

The hose and pipe of the boom and arm cylinders have increased. It reduces pressure loss and increases the productivity.



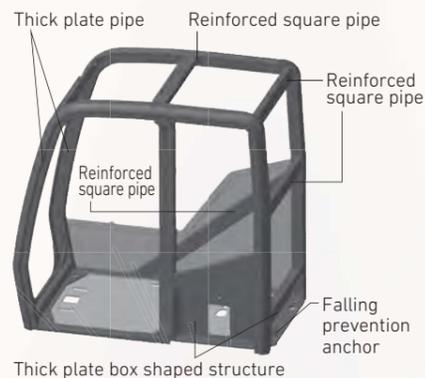
### Smooth operation

The operation burden has decreased by approximately 25% and easy to operate.



# Safer cab with various features

The KATO original cabin is durable and smart design. The cabin is compliant with ROPS direction (ISO12117-2). It secures the safety and protection of the operator from roll-over accident. The cabin is also compliant with ISO 10262 (Top guard level I) 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 arise from scattering stone. Hard coating secures high resistance to yellowing or scratch of surface.



### 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.



### 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.

### Other safe features

- Rear view camera
- Side view camera (option)
- Emergency engine stop switch
- Emergency escape hammer
- Seat belt
- Fire proof wall
- Fan guard
- Retractable side mirror
- LED working light (option)
- Fire extinguisher (option)



# Best comfort and high efficiency



### Heat& cold insulation box

It is capable to store 6 drink bottles (500ml).



### New operation lever

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



### Rear stowage space

It is capable to stow objects such as 2l size drink bottle.



### Cabin pressurization

It prevents dust by enhancing the airtightness.

### Air conditioner

- Air volume is increased by 26%
- Paper type filter

### 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.



### 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)



# 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 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



### Facilitated the layout

The electronic items and air cleaner are located in the rear cabin compartment. It has facilitated and become compact.



### Filters

The filters are concentrated on the right-rear location which is easy to access. The cartridge type main fuel filter is easy to replace.



### Greasing port

It adopts greasing port for the slewing motor. The greasing port location is easy to access.



### Cabin maintenance space

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



### High performance bush

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



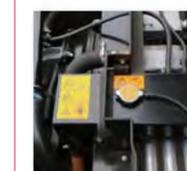
### Tool box

The tool box for daily maintenance.



### Good access to the engine

The steps and the hand-rails are provided for smooth and safe access to the engine at maintenance.



### Cooling system

The expansion tank has been installed to the radiator top. It increases air breeding performance and cooling performance.



### DEF tank

The DEF tank is easy to access.



### Battery disconnect switch

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

# Technical Specifications

## ENGINE

Model..... ISUZU4HK1X  
 4 cycle intercooler turbo charged diesel engine  
 Number of cylinders..... 4  
 Bore & Stroke..... 115 mm × 125 mm  
 Total displacement..... 5.193 L  
 Rated output..... 128.4kW/2,000min<sup>-1</sup> (ISO 14396)  
 120.5kW/2,000min<sup>-1</sup> (ISO 9249 Net)  
 Max. torque..... 670N-m/1,600min<sup>-1</sup> (ISO 14396)  
 646N-m/1,600min<sup>-1</sup> (ISO 9249 Net)  
 Compression ratio..... 16.5:1  
 Combustion system..... Direct injection  
 Cooling system..... Pressurized water circulated by a Impeller type pump with thermostat  
 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<sup>-1</sup>

## 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..... 184 kN

## 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..... 325 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..... 150 L  
 system..... 270 L  
 In standard figure, with the 2.93m arm, 600mm grouser shoes and 0.80m<sup>3</sup> (ISO) bucket.  
 Operating weight..... 23,000 kg  
 Ground pressure..... 51 kPa

## CAB&CONTROLS

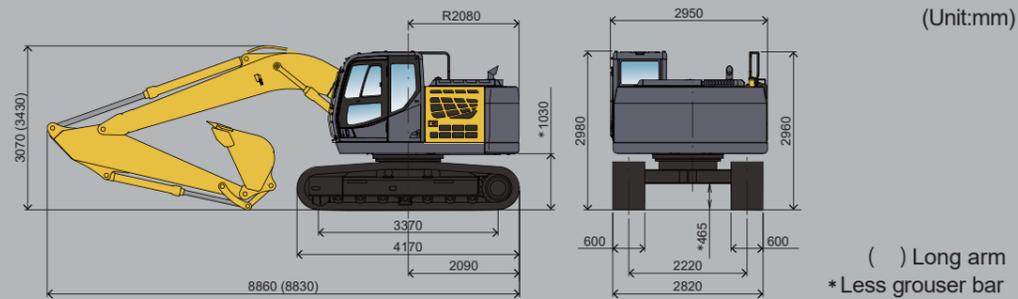
Type..... All weather sound suppressed, cab mounted on 6 point viscous mounting.  
 Right hand levers..... Controls the boom & bucket  
 Inner right hand lever (with foot pedal)..... Controls the right hand track  
 Inner left hand lever (with foot pedal)..... Controls the left hand track  
 Left hand lever..... Controls the arm & swing  
 Pilot control..... Travel, boom, arm, bucket and swing  
 Engine throttle..... Electric "Accell dial"  
 Meter & 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 experienced operator. Established both power and good response  
 A: All-round Multi Purpose 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

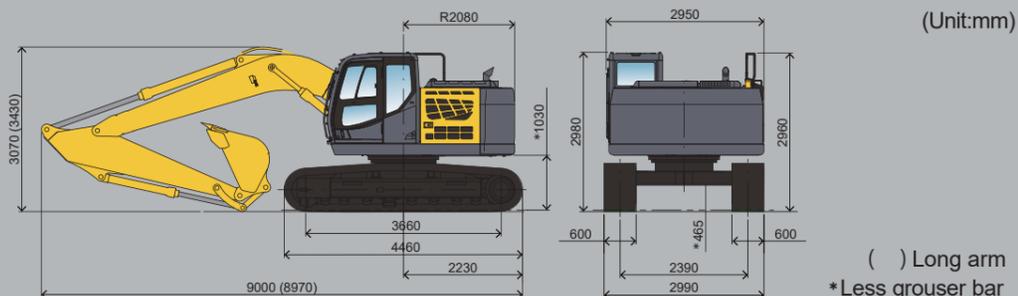
Air conditioner gas contains fluorinated greenhouse gases.  
 Industrial designation..... HFC-134a  
 Quantity..... 1.0kg  
 CO<sub>2</sub> equivalent..... 1.43ton  
 Global warming potential (GWP)..... 1430

# Dimensions

## HD823MR-7

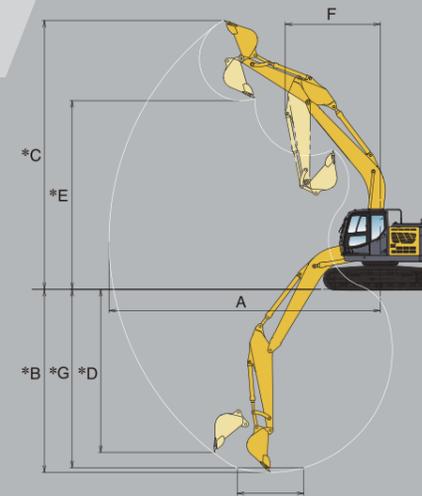


## HD823MRLC-7

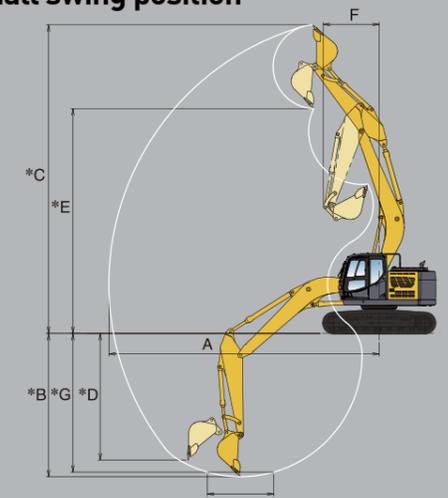


# Working Ranges

## Standard backhoe



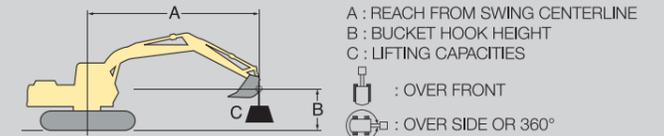
## Small swing position



Unit : mm \*Less grouser bar

Range	Arm	Standard boom		Bracket on boom for small swing radius (option)	
		Standard arm 2.93m	Long arm 3.92m	Standard arm 2.93m	Long arm 3.92m
A : Maximum digging radius		9,930	10,870	9,930	10,870
* B : Maximum digging depth		6,690	7,690	5,260	6,260
* C : Maximum digging height		9,840	10,400	11,330	12,140
* D : Maximum vertical wall		5,960	7,080	4,650	5,650
* E : Maximum dumping height		6,900	7,440	8,260	9,070
F : Minimum swing radius		3,480	3,380	2,050	2,310
* G : Maximum digging depth at 2,440mm (8ft) floor length		6,520	7,550	5,090	6,120

# Lifting Capacities



**HD823MR-7** BOOM: 5.63 m, ARM: 2.93 m, BUCKET: 0.8m<sup>3</sup> (650kg), SHOE WIDTH: 600mm, COUNTERWEIGHT: 6,100kg 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)		
7.50							*3650	*3650			*3580	*3580	6.11
6.00							*4030	*4030			*3020	*3020	7.46
4.50							*4610	4590	*4470	3090	*3010	2650	8.12
3.00			*5480	*5480	*6930	6810	*5540	4310	4600	2960	*3150	2370	8.47
1.50			*4960	*4960	*5680	*5680	6350	4030	4450	2820	*3430	2260	8.54
0.00			*5200	*5200	*5120	*5120	6120	3810	4320	2710	3660	2280	8.35
-1.50	*6530	*6530	*5080	*5080	*5050	*5050	6000	3710	4270	2660	3990	2490	7.86
-3.00	*5660	*5660	*4910	*4910	*5190	*5190	6020	3730			4760	2980	7.02
-4.50			*4930	*4930	*5760	*5760					6760	4230	5.68

**HD823MRLC-7** BOOM: 5.63 m, ARM: 2.93 m, BUCKET: 0.8m<sup>3</sup> (650kg), SHOE WIDTH: 600mm, COUNTERWEIGHT: 6,100kg 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)		
7.50							*3650	*3650			*3580	*3580	6.11
6.00							*4030	*4030			*3020	*3020	7.46
4.50							*4610	*4610	*4470	3490	*3010	3000	8.12
3.00			*5480	*5480	*6930	*6930	*5540	4860	*4910	3360	*3150	2700	8.47
1.50			*4960	*4960	*5680	*5680	*6570	4570	5200	3220	*3430	2590	8.54
0.00			*5200	*5200	*5120	*5120	*7140	4350	5080	3100	*3930	2630	8.35
-1.50	*6530	*6530	*5080	*5080	*5050	*5050	*6710	4250	5030	3050	4690	2850	7.86
-3.00	*5660	*5660	*4910	*4910	*5190	*5190	7100	4260			5600	3410	7.02
-4.50			*4930	*4930	*5760	*5760					*6980	4810	5.68

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.