LiuGong

Engine	Yanmar 4TNV98C-SLY
Rated Power	46.2 kW (62 hp / 63 ps) @ 2,200 rpm
Net Power	44 kW (59 hp / 60 ps) @ 2,200 rpm
Maximum Dig Depth	4,093 mm
Standard Bucket Capacity	0.28 m^3
Operating Weight	8,700 kg

909E EXCAVATOR

TOUGH WORLD. TOUGH EQUIPMENT.

POWERFUL ENGINE

The fuel efficient, Tier 4 certified Yanmar 4TNV98C engine provides proven and reliable power.

ADVANCED HYDRAULICS

Advanced hydraulic system is perfectly matched to the engine and components for fast response and smooth operation. The hydraulic system provides a load sensing and flow sharing capability leading to operational precision, efficient performance and greater controllability.

BOOM SWING

When it works alongside obstackles, the swing post and cylinder stay within the tracks when in an offset position, so that you can avoid the risk of damage to your machine.

BLADE FLOAT FUNCTION

When you push the lever fully forward into the detent position the float function is enabled. Because you don't have to adjust the blade height during travel, cleanup and backflling will be easier.

SIMPLY MULTIFUNCTIONAL

Switching attachments like buckets, breakers and shears can be time consuming and hazardous. We've made it fast, safe and simple with LiuGong's quick coupler and powerlatch tilt coupler. These are perfectly matched to a range of genuine LiuGong attachments including; buckets and breakers which can be changed from the seat of the cab in less than a minute, quick, safe and easy.

COMFORTABLE OPERATION ENVIRONMENT

Ergonomically designed controls, clear visibility and convenient features all contribute to operator comfort and overall productivity on the job site.

SHORT TAIL SWING

The 909ECR model features a short tail swing design. On this model, if you are working in a confined space the short tail swing ensures safe and easy operation within a confined space.

SPECIFICATIONS

Operating weight	8,700 kg (19,180 lb)

Operating weight includes coolant, lubricants, full fuel tank, cab, standard shoes, boom, arm, bucket and operator 75 kg (165 lb).

Bucket capacity	0.28 m³ (0.37 yd³)

ENGINE

Description	
Cummins EPA Tier4 / EU Stage IIIB, 6-cylinder, high pressure common rail, electronically controlled direct injection. . Cooling system: Charge air cooler	
Emission rating	Stage IIIB / Tier 4
Engine manufacturer	Yanmar
Engine model	4TNV98C-SLY
Aspiration	Natural
Charged air cooling	Aftercooler
Cooling fan drive	Direct
Displacement	3.3 L (202 gal)
Rated speed	2,200 rpm
Engine output - net (SAE J1349 / ISO 9249)	44 kW (59 hp / 60 ps)
Engine output - gross (SAE J1995 / ISO 14396)	46.2 kW (62 hp / 63 ps)
Maximum torque	241 N·m (178 lbf·ft) @1,430 rpm
Bore × Stroke	98×110 mm (3.86” × 4.33”)

DRIVE AND BRAKES

Description	
2-speed drive motors allow auto speed shifting. Each motor is equipped with a hydraulic released, spring applied parking brake.	
Max. travel speed	High: 4.8 km/h (3 mph) Low: 2.4 km/h (1.5 mph)
Gradeability	30°/58%
Max. drawbar pull	75 kN (16,861 lb)

SWING SYSTEM

Description	
Planetary gear reduction driven by high torque axial piston motor with spring applied parking brake; Hydraulic oil lubricate.	
Swing speed	10.5 rpm
Swing torque	21,000 N·m (15,489 lbf·ft)

HYDRAULIC SYSTEM

Main pump	
Type	Variable displacement piston pump
Maximum flow	196 L/min (51.8 gal/min)
Relief valve setting	
Implement	28 MPa (4,061 psi)
Travel circuit	31.4 MPa (4,554 psi)
Slew circuit	28 MPa (4,061 psi)
Pilot circuit	3.9 MPa (566 psi)
Hydraulic cylinders	
Boom Cylinder – Bore × Stroke	Φ110 × 879 mm Φ4.33” × 34.61”
Arm Cylinder – Bore × Stroke	Φ100 × 867 mm Φ3.94” × 34.13”
Bucket Cylinder – Bore × Stroke	Φ90 × 710 mm Φ3.54” × 27.95”

UNDERCARRIAGE

Track shoe each side	39
Link pitch	154 mm (6.1”)
Shoe width, triple grouser	450 mm (18”)
Bottom rollers each side	6
Top rollers each side	1

ELECTRIC SYSTEM

System Voltage	12 V
Battery	12 V
Alternator	12 V - 55 A/80A
Start motor	12 V - 3 kW (4 hp)

SERVICE CAPACITIES

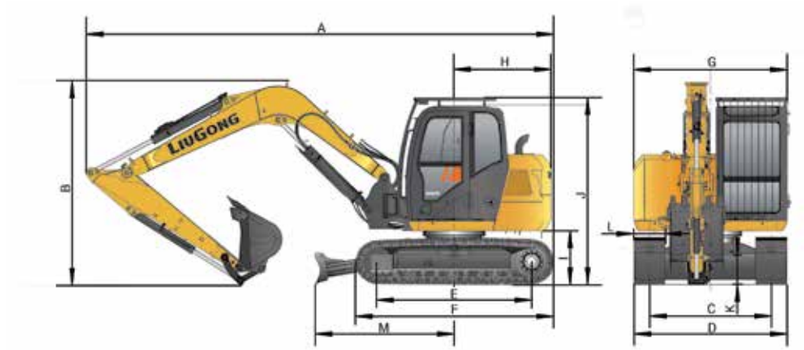
Fuel tank	116 L (30.6 gal)
Engine oil	11.6 L (3.1 gal)
Final drive (each)	1.08 L (0.29 gal)
Swing drive	1.6 L (0.42 gal)
Cooling system	14.5 L (3.8 gal)
Hydraulic reservoir	72 (19.0 gal)
Hydraulic system total	110 (29.1 gal)

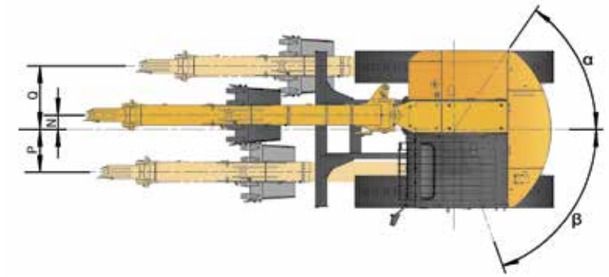
SOUND PERFORMANCE

Interior Sound Power Level (ISO 6396)	75 dB(A)
Exterior Sound Power Level (ISO 6395)	98 dB(A)

MACHINE WEIGHTS AND GROUND PRESSURE

Operating weight	8,700 kg (19,180 lb)
Shoe width	450 mm (18”)
Boom	3,375 mm (11’1”)
Arm	1,650 mm (5’5”)
Bucket	0.28 m³ (0.37 yd³)
Counterweight	1400 kg (3,086 lb)
Ground pressure	38.7 kPa (5.6 lb)





DIMENSIONS

Boom	3,375 mm (11’1”)	
Arm Options	1,650 mm (5’5”)	2,100 mm (6’11”)
A Shipping Length	6,460 mm (21’2”)	
B Shipping Height – Top of Cab	2,730 mm (8’11”)	
C Track Gauge	1,950 mm (6’5”)	
D Undercarriage Width – with 300 mm Shoes	2,400 mm (7’10”)	
E Length to Center of Rollers	2,230 mm (7’4”)	
F Track Length	2,845 mm (9’4”)	
G Overall Width of Upper Structure	2,200 mm (7’3”)	
H Tail Swing Radius	1,410 mm (4’8”)	
I Counterweight Ground Clearance	760 mm (2’6”)	
J Overall Height of Cab	2,800 mm (9’2”)	
K Min. Ground Clearance	360 mm (1’2”)	
L Track Shoe Width	450 mm (18”)	
M Dozer Blade, Maximum Reach at Ground Level	2,033 mm (6’8”)	
N Off Set	200 mm (8”)	
O Maximum Boom Offset to the Right	886 mm (2’11”)	
P Maximum Boom Offset to the Left	598 mm (2’)	
α Maximum Boom Swing Angle to the Right	55°	
β Maximum Boom Swing Angle to the Left	70°	

BOOM DIMENSIONS

Boom	3,375 mm (11’1”)
Length	3,510 mm (11’6”)
Height	1,236 mm (4’1”)
Width	424 mm (1’5”)
Weight	435 kg (959 lb)

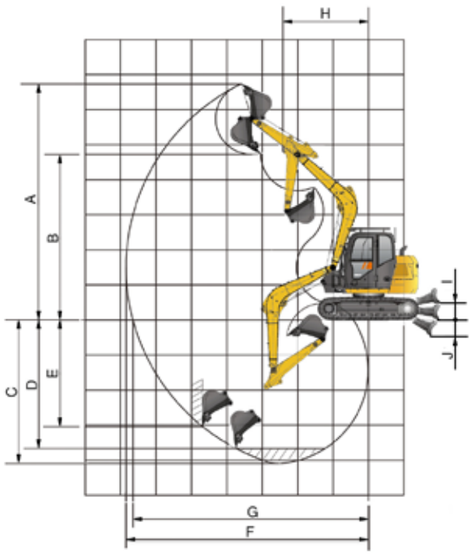
Only boom.

ARM DIMENSIONS

Arm	1,650 mm (5’5”)	2,100 mm (6’11”)
Length	2,205 mm (7’3”)	2,660 mm (8’9”)
Height	510 mm (1’8”)	510 mm (1’8”)
Width	220 mm (10”)	244 mm (9”)
Weight	165 kg (364 lb)	210 kg (463 lb)

Only arm.

LiuGong standard and optional equipment may vary from region to region. Please consult your LiuGong dealer for information specific to your area.



WORKING RANGE	
Boom	3,375 mm (11’1”)
Arm Options	1,650 mm (5’5”)
A. Max. Cutting Height	6,724 mm (22’1”)
B. Max. Dumping Height	4,352 mm (15’6”)
C. Max. Digging Depth	4,093 mm (13’5”)
D. Max. Vertical Wall Digging Depth	3,043 mm (10’)
E. Max. Digging Depth 2.44 m (8’) level	3,670 mm (12’)
F. Max. Digging Reach	6,847 mm (22’6”)
G. Max. Digging Reach on Ground	6,651 mm (21’10”)
H. Min. Front Swing Radius	2,421 mm (7’11”)
i. Max Blade Lift	470 mm (1’7”)
J. Max Blade Depth	510 mm (1’8”)
Bucket Digging Force (ISO)	63 kN (14,163 lbf)
Arm Digging Force (ISO)	43 kN (9,667 lbf)
Bucket Capacity	0.28 m^3 (0.37 yd^3)
Bucket Tip Radius	1,020 mm (3’4”)

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket, weight of the bucket or the bucket with quick coupler must be deducted from the lifting capacities.

Lifting capacities are based on the machine standing on a firm, uniform supporting surface.

Rating over - front (Cf) Rating over - side (Cs)

1. Do not attempt to lift or hold any load that is greater than these rated values at their specified load radius and height. Weight of all accessories must be deducted from the above lifting capacities.
2. The rated loads are in compliance with ISO 10567 Hydraulic Excavator Lift Capacity Rating Standard. They do not exceed 87% of hydraulic lifting capacity or 75% tipping load.
3. Ratings at bucket lift hook.
4. Lifting capacities are based on machine standing on level, firm and uniform ground.
5. *Indicates the load is limited by hydraulic capacity rather than tipping capacity.
6. Operator should be fully acquainted with the Operator’s and Maintenance Instructions before operating this machine and rules for the safe operation of equipment should be adhered to at all times.

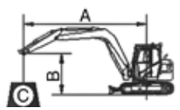
LIFTING CAPACITY (METRIC)

909ECR with 450 mm shoes, 1,650 mm arm (Standard)

A: Reach from swing center
B: Bucket hook height
C: Lifting capacity
Cf: Rating over front
Cs: Rating over side

Conditions

Boom length: 3,375 mm one-piece boom
Arm length: 1,650 mm
Bucket: 0.28 m^3
Shoes: 450 mm
Unit: kg



Blade: Down

A (Unit: m)

B (m)	2		3		4		5		MAX REACH		
											A (m)
4					*1,770	1,770	*1,850	1,510	*1,870	1,470	5.1
3			*2,670	*2,670	*2,150	2,130	*1,950	1,490	*1,940	1,240	5.6
2			*4,250	3,150	*2,720	2,020	*2,200	1,440	*2,030	1,140	5.8
1			*5,180	2,980	*3,220	1,920	*2,450	1,390	*2,120	1,120	5.8
0			*5,260	2,950	*3,470	1,880	*2,590	1,370	*2,260	1,170	5.6
- 1	6,950		*4,980	2,970	*3,420	1,870	*2,510	1,370	*2,410	1,320	5.1
-2	6,910		*4,260	3,030	*2,940	1,910			*2,580	1,720	4.3

Blade: Up

A (Unit: m)

B (m)	2		3		4		5		MAX REACH		
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	A (m)
4					*1,770	*1,770	1,320	1,510	1,280	1,470	5.1
3			*2,670	*2,670	1,850	2,130	1,300	1,490	1,080	1,240	5.6
2			2,680	3,150	1,750	2,020	1,250	1,440	990	1,140	5.8
1			2,520	2,980	1,650	1,920	1,200	1,390	970	1,120	5.8
0			2,490	2,950	1,610	1,880	1,180	1,370	1,010	1,170	5.6
- 1	5,590	6,950	2,500	2,970	1,600	1,870	1,180	1,370	1,140	1,320	5.1
-2	5,690	6,910	2,560	3,030	1,640	1,910			1,480	1,720	4.3

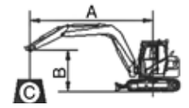
LIFTING CAPACITY (IMPERIAL)

909ECR with 18” shoes, 5’5” arm (Standard)

A: Reach from swing center
B: Bucket hook height
C: Lifting capacity
Cf: Rating over front
Cs: Rating over side

Conditions

Boom length: 11’1” one-piece boom
Arm length: 5’5”
Bucket: 0.37 yd^3
Shoes: 18”
Unit: lb



Blade: Down

A (Unit: ft)

B (ft)	6'6"		10'		13'1"		16'4"		MAX REACH		
											A (ft)
13'1"					*3,903	*3,903	*4,079	3,330	*4,123	3,241	16.7
10'			*5,887	*5,887	*4,741	4,697	*4,300	3,285	*4,278	2,734	18.3
6'6"			*9,371	6,946	*6,000	4,454	*4,851	3,175	*4,476	2,514	19.0
3'3"			*11,422	6,571	*7,100	4,234	*5,402	3,065	*4,675	2,470	19.0
0			*11,598	6,505	*7,651	4,145	*5,711	3,021	*4,983	2,580	18.3
-3'3"		15,325	*10,981	6,549	*7,541	4,123	*5,535	3,021	*5,314	2,911	16.8
-6'6"		15,237	*9,393	6,681	*6,483	4,212			*5,689	3,793	14.2

Blade: Up

A (Unit: ft)

B (ft)	6'6"		10'		13'1"		16'4"		MAX REACH		
	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	Cf	Cs	A (ft)
13'1"					*3,903	*3,903	2,911	3,330	2,822	3,241	16.7
10'			*5,887	*5,887	4,079	4,697	2,867	3,285	2,381	2,734	18.3
6'6"			5,909	6,946	3,859	4,454	2,756	3,175	2,183	1,140	19.0
3'3"			5,557	6,571	3,638	4,234	2,646	3,065	2,139	2,470	19.0
0			5,490	6,505	3,550	4,145	2,602	3,021	2,227	2,580	18.3
-3'3"	12,326	15,325	5,513	6,549	3,528	4,123	2,602	3,021	2,514	2,911	16.8
-6'6"	12,546	15,237	5,645	6,681	3,616	4,212			3,263	3,793	14.2

BUCKET SELECTION GUIDE

					3.375 m (11’1”) Boom	
Bucket type	Capacity	Cutting width	Weight	Teeth pcs	1.65 m (5’5”) Arm	2.1 m (6’11”) Arm
General purpose	0.28 m^3 (0.37 yd^3)	765 mm (2’6”)	221 kg (487 lb)	4	A	B

The recommendations are given as a guide only, based on typical operation conditions. Bucket capacity based on ISO 7451, heaped material with a 1:1 angle of repose.

Maximum material density:
A 1,200~1,300 kg/m^3 (2,023~2,191 lb/yd^3): Coal, Caliche, Shale
B 1,400~1,600 kg/m^3 (2,360~2,697 lb/yd^3): Wet earth and clay, limestone, sandstone
C 1,700~1,800 kg/m^3 (2,865~3,034 lb/yd^3): Granite, wet sand, well blasted rock
D 1,900 kg/m^3 (3,203 lb/yd^3): Wet mud, Iron ore
NA. Not applicable

STANDARD EQUIPMENT

ENGINE SYSTEM
- Yanmar engine, inline 4 cylinders, 4 stroke, water cooled, natural aspiration, common rail, EGR,DPF
- Air filter
- Pre-filter with water separator
- Auto-idle speed control
- Radiator, oil cooler

HYDRAULIC SYSTEM
- Main pump: one variable displacement piston pump
- Pilot pump: gear
- Cylinders: boom, arm, bucket
- Swing with anti-reverse function
- Pilot oil filter
- Pilot control shut-off lever

DIGGING EQUIPMENT
- Boom, 3,375 mm (11'1")
- Arm, 1,650 mm (5'5")
- 0.28 m^3 (0.37 yd^3) bucket (SAE, heaped)

OPERATOR STATION
- Pressurized and sealed cab with all-around visibility, large roof window, front window wiper and removable lower window
- Integrated Roll-Over Protective Structures ROPS (ISO12117-2)
- Air conditioner, heater, defroster
- Mechanical suspension seat
- AM/FM radio
- Glass-breaking hammer
- Cigarette lighter
- Floor mat
- Fire extinguisher
- One key for all locks
- Rear view mirrors, 1 mounted on cab left, 1 on cab inside

INSTRUMENTATION
- Color LCD monitor with alarms, filter/fluid change, fuel rate, water temperature, work mode, fault code, hour meter, etc.
- Fuel gauge
- Hydraulic oil level gauge

ELECTRICAL
- Alternator 12 V, 55 A
- System 12 V, one battery 12 V
- Working lights, 2 cab mounted, 1 boom mounted
- Starting, 12 V, 3 kW

UNDERCARRIAGE
- 450 mm steel track, double grouser
- Rollers, bottom - 6 each side, top - 1 each side
- Towing eye on base frame
- Blade

GUARDS
- Cover plate under travel frame

OTHER STANDARD EQUIPMENT
- 1,400 kg counterweight
- Maintenance tool kit
- Maintenance parts package

OPTIONAL EQUIPMENT

HYDRAULIC SYSTEM
- Security valves (1 on boom, 1 on arm and 1 on dozer)
- Hydraulic piping:
  Breaker & shear
  Slope & rotator
  Grapple
  Quick coupler (Low pressure)
- Low pressure quick coupler

OPERATOR STATION
- Operation protection guard (Include cab front and top guard, bar)
- Control joysticks with 2 switch & 1 proportional
- Falling-Object Protective Structures (FOPS)
- Safety net for front window

ELECTRICAL
- Travel alarm
- Rotating beacon
- Over loading warning

UPPER STRUCTURE
- Auxiliary counterweight

UNDERCARRIAGE
- Rubber Track, 450 mm (18")

DIGGING EQUIPMENT
- Arm: 2,100 mm (6'11")

LIUGONG
TOUGH WORLD. TOUGH EQUIPMENT.

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