

# Specifications

## ENGINE

MODEL		YANMAR 4TNV98	
Type		Water cooled, 4 cycle Diesel, 4-Cylinders in line, direct injection and low emission	
Rated flywheel horse power	SAE	J1995 (gross)	57 HP (42.5 kW) at 2,400 rpm
		J1349 (net)	55.2 HP (41.2 kW) at 2,400 rpm
	DIN	6271/1 (gross)	57.8 PS (42.5 kW) at 2,400 rpm
		6271/1 (net)	56 PS (41.2 kW) at 2,400 rpm
Max. torque		20.5 kgf·m (148 lbf·ft) at 1,550 rpm	
Bore x stroke		98 mm (3.86") x 110 mm (4.33")	
Piston displacement		3,319 cc (203 cu in)	
Batteries		1 x 12 V x 100 AH	
Starting motor		12 V - 3.0 kW	
Alternator		12 V - 80 Amp	

## HYDRAULIC SYSTEM

MAIN PUMP	
Type	Two variable displacement piston pumps + gear pump
Max. flow	2 x 57.8 ℓ/min + 36,6 ℓ/min
Sub-pump for pilot circuit	Gear pump
Cross-sensing and fuel saving pump system	
HYDRAULIC MOTORS	
Travel	Two speed axial piston motor with counter balance valve and parking brake
Swing	Axial piston motor with automatic brake

RELIEF VALVE SETTING	
Implement circuits	220 kgf/cm <sup>2</sup> (3,130 psi)
Travel circuit	220 kgf/cm <sup>2</sup> (3,130 psi)
Swing circuit	220 kgf/cm <sup>2</sup> (3,130 psi)
Pilot circuit	30 kgf/cm <sup>2</sup> (430 psi)
Service valve	Installed

HYDRAULIC CYLINDERS	
No. of cylinder bore x stroke	Boom: 1-110 x 715 mm (4.3" x 28.1")
	Arm: 1-85 x 840 mm (3.3" x 33.1")
	Bucket: 1-80 x 660 mm (3.1" x 26.0")
	Boom swing: 1-95 x 519 mm (3.7" x 20.4")
	Dozer blade: 1-110 x 224 mm (4.3" x 8.8")

## OPERATOR'S CAB

NOISE LEVELS	
Outside cabin - LwA	98 dB
Inside cabin - LpA	78 dB

## TRAVEL SYSTEM

Drive method	Full hydrostatic type
Drive motor	Axial piston motor, in-shoe design
Reduction system	Planetary reduction gear
Max. drawbar pull	5,300 kgf (11,700 lbf)
Max. travel speed (high) / (low)	4.0 km/hr (2.5 mph) / 2.2 km/hr (1.4 mph)
Gradeability	35° (70%)
Parking brake	Multi-wet disc

## CONTROLS

Pilot pressure operated joysticks and pedals with detachable levers provide almost effortless and fatigueless operation.

Pilot control	Two joysticks with one safety lever (LH): Arm swing, Boom swing (RH): Boom and bucket (ISO)
Traveling and steering	Two levers with pedals
Engine speed	Electric, Dial type

## SWING SYSTEM

Swing motor	Axial piston motor
Swing reduction	Planetary gear reduction
Swing bearing lubrication	Grease-bathed
Swing brake	Multi wet disc
Swing speed	9.3 rpm

## COOLANT & LUBRICANT CAPACITY

	liter
Fuel tank	125.0
Engine coolant	11.0
Engine oil	11.6
Final drive (each)	1.2
Hydraulic tank	70.0
Hydraulic system	120.0

## UNDERCARRIAGE

X-leg type center frame is integrally welded with reinforced box-section track frames. The undercarriage includes lubricate rollers, track adjusters with shock absorbing springs and sprockets, and track chain with triple grouser shoes.

Center frame	X - leg type
Track frame	Pentagonal box type
No. of track shoe on each side	40
No. of carrier rollers on each side	1
No. of track rollers on each side	5

## OPERATING WEIGHT

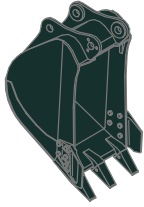
Operating weight, including 2,900 mm (9' 6") boom, 1,480 mm (4' 10") arm, SAE heaped 0.18 m<sup>3</sup> (0.24 yd<sup>3</sup>) digging bucket, lubricant, coolant, full fuel tank, hydraulic tank and the standard equipment.

MAJOR COMPONENT WEIGHT	
Upperstructure	2,900 kg (6,390 lb)
Counterweight	470 kg (1,030 lb)
Mono boom (with arm cylinder)	310 kg (680 lb)

OPERATING WEIGHT		
Operating weight	Steel tracks	5,900 kg (13,010 lb)
	Rubber tracks	5,800 kg (12,790 lb)
Ground Pressure	Steel tracks	0.36 kgf·m / cm <sup>2</sup> (5.12 psi)
	Rubber tracks	0.34 kgf·m / cm <sup>2</sup> (4.83 psi)

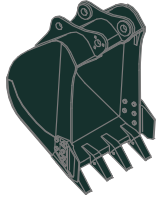
## BUCKETS

Capacity		Width		Weight
SAE heaped	CECE heaped	Without side cutters	With side cutters	
0.07 m <sup>3</sup> (0.09 yd <sup>3</sup> )	0.06 m <sup>3</sup> (0.08 yd <sup>3</sup> )	315 mm (12.4")	360 mm (14.2")	115 kg (255 lb)
0.18 m <sup>3</sup> (0.24 yd <sup>3</sup> )	0.15 m <sup>3</sup> (0.20 yd <sup>3</sup> )	670 mm (26.4")	740 mm (29.1")	170 kg (375 lb)



SAE heaped

0.07 m<sup>3</sup> (0.09 yd<sup>3</sup>)



0.18 m<sup>3</sup> (0.24 yd<sup>3</sup>)

## DIGGING FORCE (ISO)

Bucket	4,170 kgf
	40.9 kN
	9,190 lbf
Arm	2,700 kgf
	26.5 kN
	5,950 lbf

## Lifting Capacities

### R60CR-9



Rating over-front



Rating over-side or 360 degrees

Boom : 2.9 m (9' 6") / Arm : 1.48 m (4' 10") / Bucket : 0.18 m<sup>3</sup> (0.24 yd<sup>3</sup>) SAE heaped / Dozer blade down with 470 kg (1,030 lb) counterweight.

Load point height m (ft)	Load radius								At max. reach			
	2.0 m (7 ft)		3.0 m (10 ft)		4.0 m (13 ft)		5.0 m (16 ft)		Capacity		Reach m (ft)	
4.0 m (13 ft)	kg				*1120	*1120			*1050	790	4.99	
	lb				*2470	*2470			*2310	1740	(16.4)	
3.0 m (10 ft)	kg				*1180	1130			*1080	640	5.56	
	lb				*2600	2490			*2380	1410	(18.2)	
2.0 m (7 ft)	kg		*1890	1710	*1430	1080	*1250	740	*1120	580	5.82	
	lb		*4170	3770	*3150	2380	*2760	1630	*2470	1280	(19.1)	
1.0 m (3 ft)	kg		*2670	1580	*1740	1020	*1360	720	*1160	560	5.84	
	lb		*5890	3480	*3840	2250	*3000	1590	*2560	1230	(19.2)	
Ground Line	kg	*1980	*1980	*3000	1520	*1930	980	*1430	700	*1190	590	5.61
	lb	*4370	*4370	*6610	3350	*4250	2160	*3150	1540	*2620	1300	(18.4)
-1.0 m (-3 ft)	kg	*3230	3030	*2890	1500	*1910	970		*1210	690	5.09	
	lb	*7120	6680	*6370	3310	*4210	2140		*2670	1520	(16.7)	
-2.0 m (-7 ft)	kg	*3960	3080	*2370	1530				*1110	990	4.12	
	lb	*8730	6790	*5220	3370				*2450	2180	(13.5)	











- Lifting capacity is based on SAE J1097, ISO 10567.
- Lifting capacity of the Robex Series does not exceed 75% of the tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
- The load point is a hook located on the back of the bucket.
- (\*) indicates the load limited by hydraulic capacity.

# Lifting Capacities











## R60CR-9

 Rating over-front  Rating over-side or 360 degrees











Boom : 2.9 m (9' 6") / Arm : 1.48 m (4' 10") / Bucket : 0.18 m<sup>3</sup> (0.24 yd<sup>3</sup>) SAE heaped / Dozer blade up with 470 kg (1,030 lb) counterweight.

Load point height m (ft)		Load radius								At max. reach		
		2.0 m (7 ft)		3.0 m (10 ft)		4.0 m (13 ft)		5.0 m (16 ft)		Capacity		Reach m (ft)
												
4.0 m (13 ft)	kg lb					*1120 *2470	1070 2360			1040 2290	740 1630	4.99 (16.4)
3.0 m (10 ft)	kg lb					*1180 *2600	1060 2340			860 1900	600 1320	5.56 (18.2)
2.0 m (7 ft)	kg lb			*1890 *4170	1600 3530	1430 3150	1010 2230	990 2180	690 1520	780 1720	540 1190	5.82 (19.1)
1.0 m (3 ft)	kg lb			2150 4740	1470 3240	1370 3020	960 2120	970 2140	670 1480	770 1700	520 1150	5.84 (19.2)
Ground Line	kg lb	*1980 *4370	*1980 *4370	2080 4590	1410 3110	1330 2930	920 2030	950 2090	650 1430	810 1790	550 1210	5.61 (18.4)
-1.0 m (-3 ft)	kg lb	*3230 *7120	2770 6110	2070 4560	1400 3090	1320 2910	900 1980			940 2070	650 1430	5.09 (16.7)
-2.0 m (-7 ft)	kg lb	*3960 *8730	2820 6220	2090 4610	1420 3130					*1110 *2450	920 2030	4.12 (13.5)

Boom : 2.9 m (9' 6") / Arm : 1.90 m (6' 3") / Bucket : 0.18 m<sup>3</sup> (0.24 yd<sup>3</sup>) SAE heaped / Dozer blade down with 470 kg (1,030 lb) counterweight.

Load point height m (ft)		Load radius								At max. reach		
		2.0 m (7 ft)		3.0 m (10 ft)		4.0 m (13 ft)		5.0 m (16 ft)		Capacity		Reach m (ft)
												
4.0 m (13 ft)	kg lb									*900 *1980	670 1480	5.45 (17.9)
3.0 m (10 ft)	kg lb					*950 *2090	*950 *2090	*950 *2090	750 1650	*940 *2070	550 1210	5.96 (19.6)
2.0 m (7 ft)	kg lb			*1470 *3240	*1470 *3240	*1220 *2690	1070 2360	*1100 *2430	730 1610	*980 *2160	500 1100	6.19 (20.3)
1.0 m (3 ft)	kg lb			*2330 *5140	1580 3480	*1560 *3440	1010 2230	*1250 *2760	700 1540	*1020 *2250	490 1080	6.21 (20.4)
Ground Line	kg lb	*2000 *4410	*2000 *4410	*2850 *6280	1480 3260	*1820 *4010	950 2090	*1360 *3000	670 1480	*1070 *2360	510 1120	6.00 (19.7)
-1.0 m (-3 ft)	kg lb	*2840 *6260	*2840 *6260	*2920 *6440	1450 3200	*1900 *4190	930 2050	*1360 *3000	660 1460	*1110 *2450	580 1280	5.54 (18.2)
-2.0 m (-7 ft)	kg lb	*3980 *8770	2950 6500	*2590 *5710	1460 3220	*1690 *3730	930 2050			*1100 *2430	760 1680	4.70 (15.4)

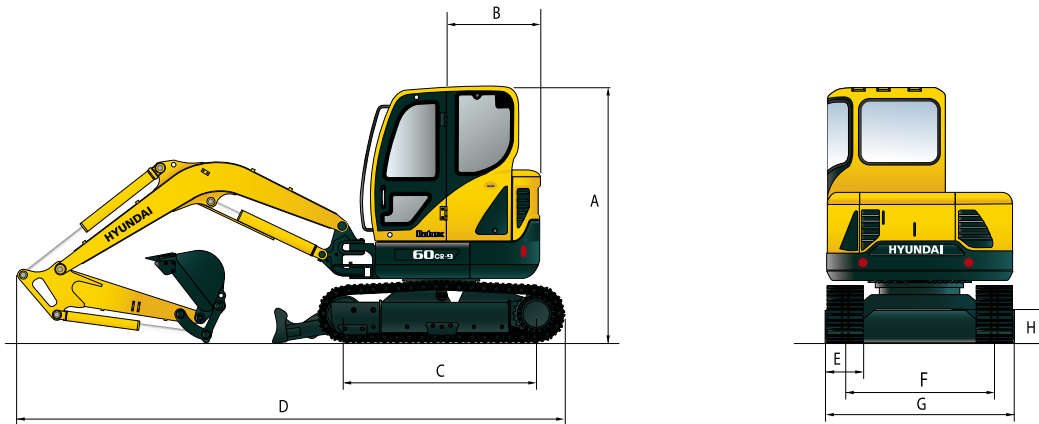
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		2.0 m (7 ft)		3.0 m (10 ft)		4.0 m (13 ft)		5.0 m (16 ft)		Capacity		Reach m (ft)
												
4.0 m (13 ft)	kg lb									890 1960	620 1370	5.45 (17.9)
3.0 m (10 ft)	kg lb					*950 *2090	*950 *2090	*950 *2090	700 1540	750 1650	510 1120	5.96 (19.6)
2.0 m (7 ft)	kg lb			*1470 *3240	*1470 *3240	*1220 *2690	1000 2200	980 2160	680 1500	690 1520	460 1010	6.19 (20.3)
1.0 m (3 ft)	kg lb			2150 4740	1470 3240	1360 3000	940 2070	950 2090	650 1430	670 1480	450 990	6.21 (20.4)
Ground Line	kg lb	*2000 *4410	*2000 *4410	2040 4500	1370 3020	1300 2870	880 1940	920 2030	620 1370	700 1540	470 1040	6.00 (19.7)
-1.0 m (-3 ft)	kg lb	*2840 *6260	2660 5860	2010 4430	1340 2950	1270 2800	860 1900	910 2010	610 1340	790 1740	530 1170	5.54 (18.2)
-2.0 m (-7 ft)	kg lb	*3980 *8770	2700 5950	2020 4450	1350 2980	1280 2820	860 1900			1040 2290	710 1570	4.70 (15.4)

1. Lifting capacity is based on SAE J1097, ISO 10567.
2. Lifting capacity of the Robex Series does not exceed 75% of the tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The load point is a hook located on the back of the bucket.
4. (\*) indicates the load limited by hydraulic capacity.

# Dimensions & Working Ranges

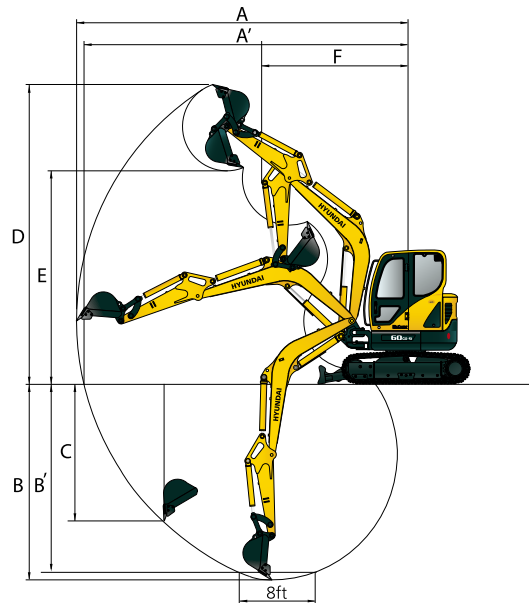
## R60CR-9 DIMENSIONS



mm (ft · in)

<b>A</b>	Overall height of cab	2,550 (8' 4")		
<b>B</b>	Tail swing radius	1,080 (3' 7")		
<b>C</b>	Tumbler distance	1,990 (6' 6")		
<b>D</b>	Overall length	5,600 (18' 4")		
<b>E</b>	Track shoe width		Steel	380 (1' 3")
			Rubber	400 (1' 4")
<b>F</b>	Track gauge			1,600 (5' 3")
<b>G</b>	Overall width			2,000 (6' 7")
<b>H</b>	Ground clearance			380 (1' 3")

## R60CR-9 WORKING RANGE



mm (ft · in)

Boom length	2,900 (9' 6")		
Arm length	1,480 (4' 10")		1,900 (6' 3")
Max. digging reach	6,150 (20' 2")		6,480 (21' 3")
Max. digging reach on ground level	6,010 (19' 9")		6,350 (20' 10")
Max. digging depth	3,570 (11' 9")		3,990 (13' 1")
Max. digging depth (8' level)	3,160 (10' 5")		3,620 (11' 11")
Max. vertical wall digging depth	3,040 (9' 12")		3,360 (11' 0")
Max. digging height	5,680 (18' 8")		5,850 (19' 2")
Max. dumping height	3,930 (12' 11")		4,100 (13' 5")
Min. front swing radius	2,420 (7' 11")		2,510 (8' 3")