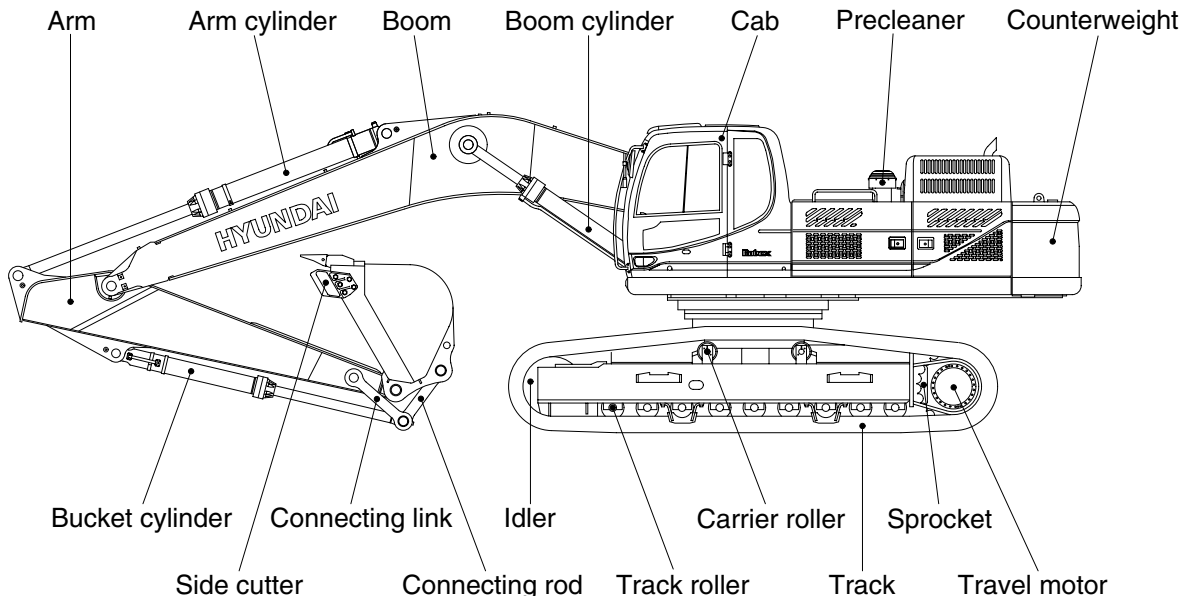
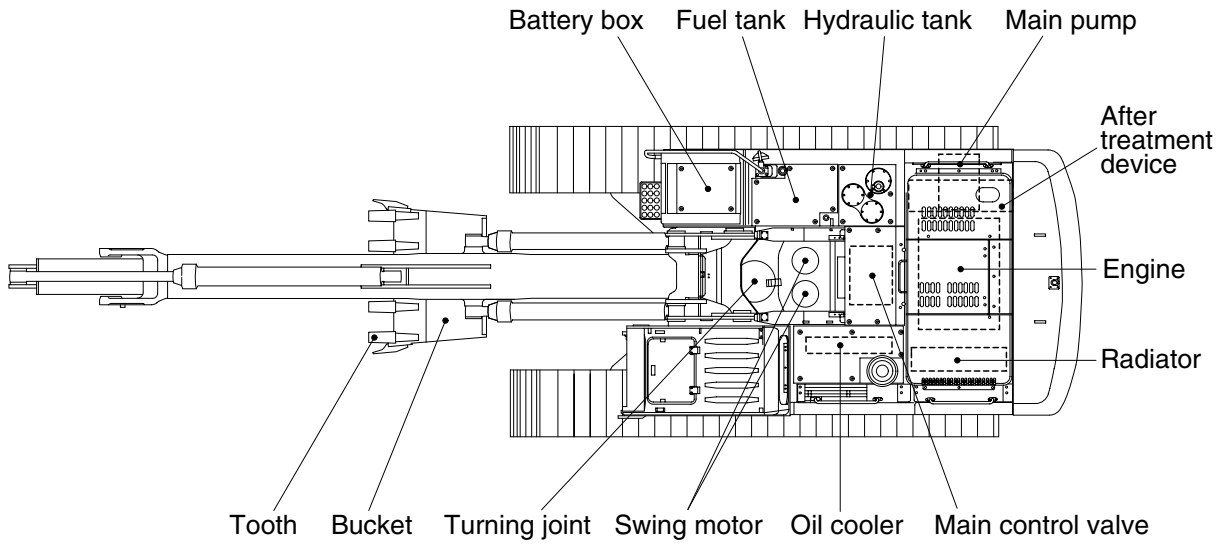


GROUP 2 SPECIFICATIONS

1. MAJOR COMPONENT

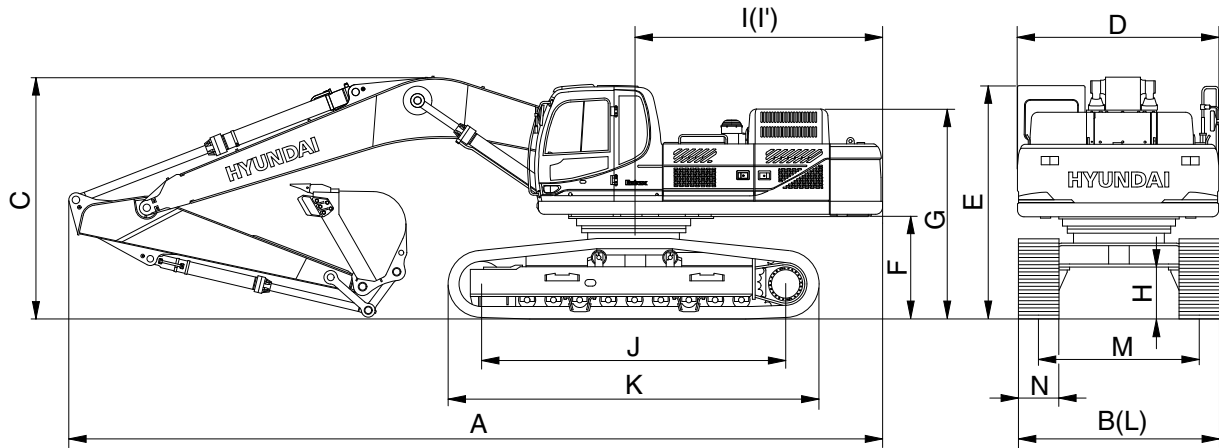


4809A2SP01

2. SPECIFICATIONS

1) ROBEX 480LC-9A

· 7.06 m (23' 2") BOOM, 3.38 m (11' 1") ARM

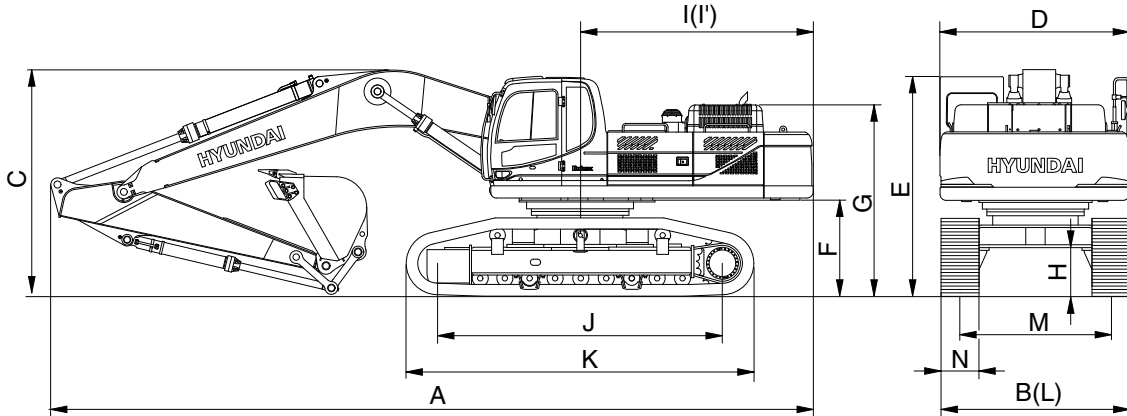


4809A2SP02

Description		Unit	Specification
Operating weight		kg (lb)	48100 (106040)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	2.15 (2.81)
Overall length	A	mm (ft-in)	12220 (40' 1")
Overall width, with 600 mm shoe	B		3340 (10' 11")
Overall height	C		3730 (12' 3")
Superstructure width	D		2980 (9' 9")
Overall height of cab	E		3190 (10' 6")
Ground clearance of counterweight	F		1295 (4' 3")
Engine cover height	G		2770 (9' 1")
Minimum ground clearance	H		555 (1' 10")
Rear-end distance	I		3855 (12' 8")
Rear-end swing radius	I'		3910 (12' 10")
Distance between tumblers	J		4470 (14' 8")
Undercarriage length	K		5462 (17' 11")
Undercarriage width	L		3340 (10' 11")
Track gauge	M		2740 (9' 0")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)		km/hr (mph)	3.1/4.8 (1.9/3.0)
Swing speed		rpm	8.2
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.83 (11.80)
Max traction force		kg (lb)	38500 (84800)

2) ROBEX 520LC-9A

· 7.06 m (23' 2") BOOM, 3.38 m (11' 1") ARM

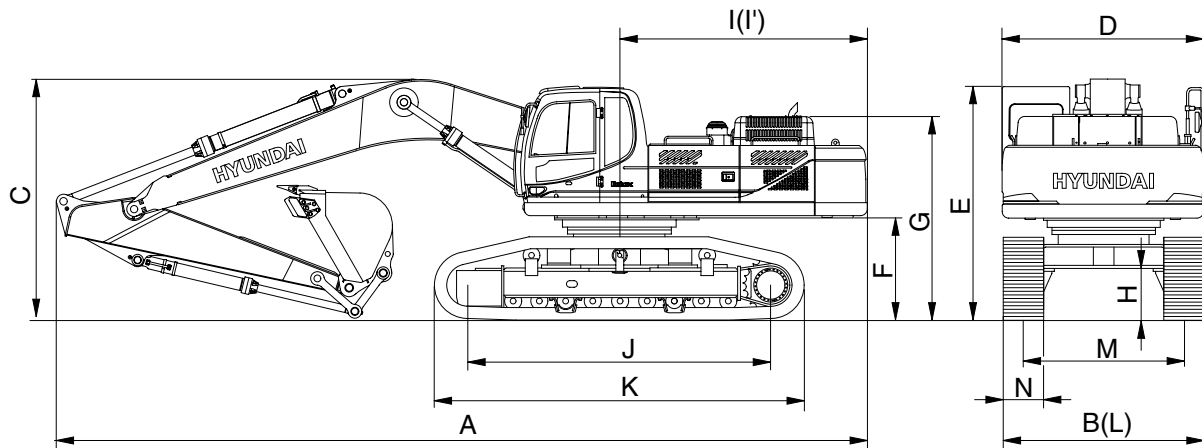


4809A2SP03

Description	Unit	Specification
Operating weight	kg (lb)	51000 (112440)
Bucket capacity (SAE heaped), standard	m ³ (yd ³)	2.15 (2.81)
Overall length	A	12060 (39' 7")
Overall width, with 600 mm shoe (transport position / working position)	B	2980/3540 (9' 9"/11' 7")
Overall height	C	3850 (12' 8")
Superstructure width	D	2980 (9' 9")
Overall height of cab	E	3400 (11' 2")
Ground clearance of counterweight	F	1500 (4' 11")
Engine cover height	G	2980 (9' 9")
Minimum ground clearance	H	770 (2' 6")
Rear-end distance	I	3855 (12' 8")
Rear-end swing radius	I'	3910 (12' 10")
Distance between tumblers	J	4470 (14' 8")
Undercarriage length	K	5460 (17' 11")
Undercarriage width (transport position / working position)	L	2980/3540 (9' 9"/11' 7")
Track gauge (transport position / working position)	M	2380/2940 (7' 10"/9' 8")
Track shoe width, standard	N	600 (24")
Travel speed (low/high)	km/hr (mph)	3.1/4.8 (1.9/3.0)
Swing speed	rpm	8.2
Gradeability	Degree (%)	35 (70)
Ground pressure (600 mm shoe)	kgf/cm ² (psi)	0.88 (12.51)
Max traction force	kg (lb)	38500 (84880)

3) ROBEX 520LC-9A

· 6.55 m (21' 6") BOOM, 2.4 m (7' 10") ARM

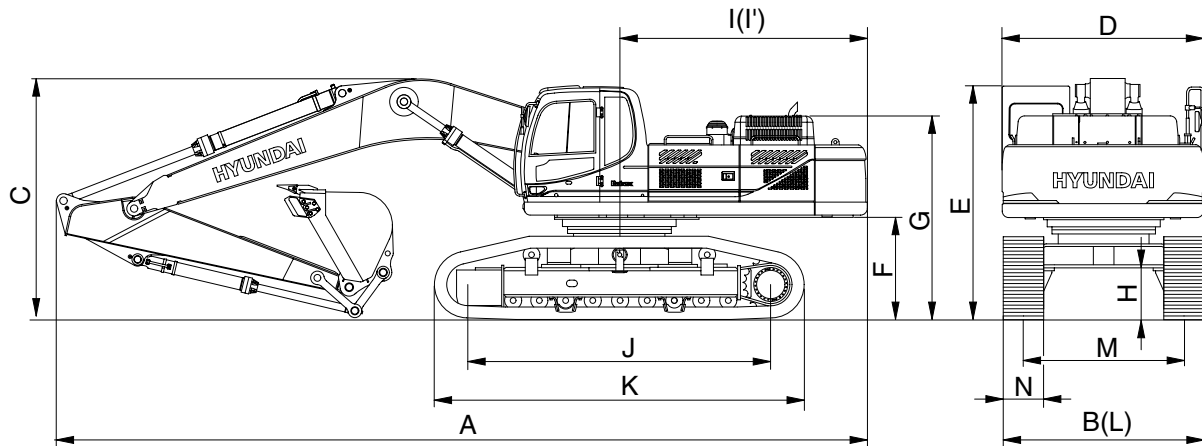


4809A2SP03

Description		Unit	Specification
Operating weight		kg (lb)	50820 (112040)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	2.15 (2.81)
Overall length	A	mm (ft-in)	11940 (39' 2")
Overall width, with 600 mm shoe (transport position / working position)	B		2980/3540 (9' 9"/11' 7")
Overall height	C		4100 (13' 5")
Superstructure width	D		2980 (9' 9")
Overall height of cab	E		3400 (11' 2")
Ground clearance of counterweight	F		1500 (4' 11")
Engine cover height	G		2980 (9' 9")
Minimum ground clearance	H		770 (2' 6")
Rear-end distance	I		3855 (12' 8")
Rear-end swing radius	I'		3910 (12' 10")
Distance between tumbler rollers	J		4470 (14' 8")
Undercarriage length	K		5460 (17' 11")
Undercarriage width (transport position / working position)	L		2980/3540 (9' 9"/11' 7")
Track gauge (transport position / working position)	M		2380/2940 (7' 10"/9' 8")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	9.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.88 (12.51)
Max traction force		kg (lb)	38500 (84800)

4) ROBEX 520LC-9A

· 9.00 m (29' 6") BOOM, 5.85 m (19' 2") ARM



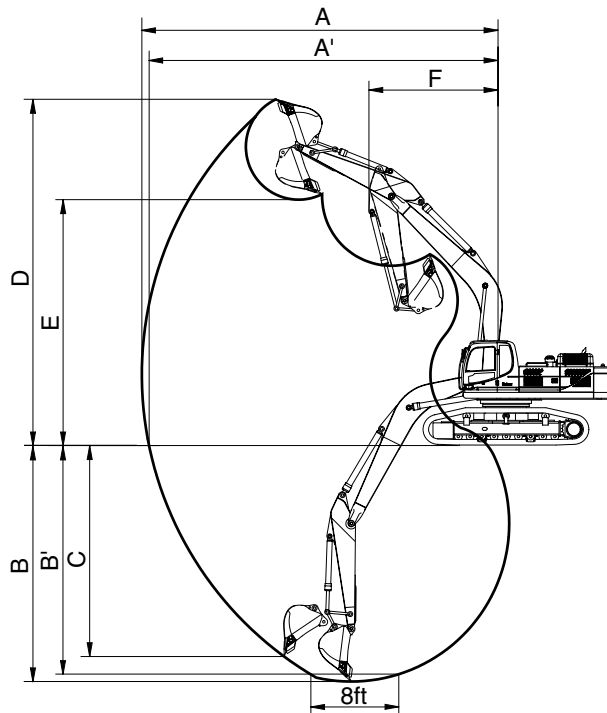
4809A2SP03

Description		Unit	Specification
Operating weight		kg (lb)	52410 (115540)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	2.15 (2.81)
Overall length	A	mm (ft-in)	13960 (45' 10")
Overall width, with 600 mm shoe (transport position / working position)	B		2980/3540 (9' 9"/11' 7")
Overall height	C		5190 (17' 0")
Superstructure width	D		2980 (9' 9")
Overall height of cab	E		3400 (11' 2")
Ground clearance of counterweight	F		1500 (4' 11")
Engine cover height	G		2980 (9' 9")
Minimum ground clearance	H		770 (2' 6")
Rear-end distance	I		3855 (12' 8")
Rear-end swing radius	I'		3910 (12' 10")
Distance between tumblers	J		4470 (14' 8")
Undercarriage length	K		5460 (17' 11")
Undercarriage width (transport position / working position)	L		2980/3540 (9' 9"/11' 7")
Track gauge (transport position / working position)	M		2380/2940 (7' 10"/9' 8")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	9.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.91 (12.94)
Max traction force		kg (lb)	38500 (84800)

3. WORKING RANGE

1) ROBEX 480LC-9A

· 7.06 m (23' 2") BOOM



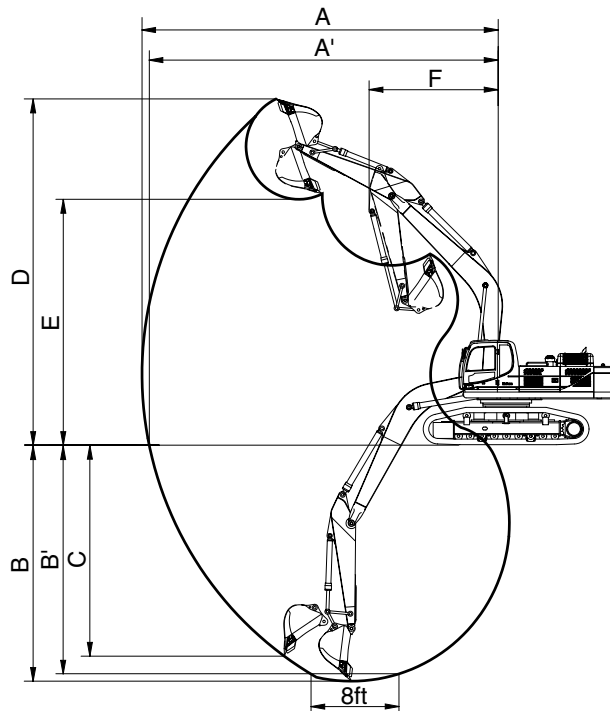
4809A2SP04

Description		2.40 m (7' 10") Arm	2.90 m (9' 6") Arm	3.38 m (11' 1") Arm	4.00 m (13' 1") Arm
Max digging reach	A	11160 mm (36' 7")	11550 mm (37'11")	12100 mm (39' 8")	12660 mm (41' 6")
Max digging reach on ground	A'	10940 mm (35'11")	11340 mm (37' 2")	11900 mm (39' 1")	12470 mm (40'11")
Max digging depth	B	6830 mm (22' 5")	7330 mm (24' 1")	7810 mm (25' 8")	8430 mm (27' 9")
Max digging depth (8ft level)	B'	6670 mm (21'11")	7190 mm (23' 7")	7670 mm (25' 2")	8320 mm (27' 4")
Max vertical wall digging depth	C	5960 mm (19' 7")	5930 mm (19' 5")	6590 mm (21' 7")	7170 mm (23' 6")
Max digging height	D	10560 mm (34' 8")	10530 mm (34' 7")	10980 mm (36' 0")	11210 mm (36' 9")
Max dumping height	E	7110 mm (23' 4")	7180 mm (23' 7")	7620 mm (25' 0")	7830 mm (25' 8")
Min swing radius	F	5090 mm (16' 8")	4910 mm (16' 1")	4780 mm (15' 8")	4910 mm (16' 1")
Bucket digging force	SAE	216.7 [236.4] kN	219.7 [239.6] kN	220.7 [240.7] kN	222.6 [242.9] kN
		22100 [24110] kgf	22400 [24440] kgf	22500 [24550] kgf	22700 [24760] kgf
		48720 [53150] lbf	49380 [53870] lbf	49600 [54110] lbf	50040 [54590] lbf
	ISO	251.1 [273.9] kN	254.0 [277.1] kN	255.0 [278.2] kN	256.9 [280.3] kN
		25600 [27930] kgf	25900 [28250] kgf	26000 [28360] kgf	26200 [28580] kgf
		56440 [61570] lbf	57100 [62290] lbf	57320 [62530] lbf	57760 [63010] lbf
Arm crowd force	SAE	276.6 [301.7] kN	224.6 [245.0] kN	191.2 [208.6] kN	170.6 [186.2] kN
		28200 [30760] kgf	22900 [24980] kgf	19500 [21270] kgf	17400 [18980] kgf
		62170 [67820] lbf	50490 [55080] lbf	42990 [46900] lbf	38360 [41850] lbf
	ISO	290.3 [316.7] kN	234.4 [255.7] kN	199.1 [217.2] kN	176.5 [192.6] kN
		29600 [32290] kgf	23900 [26070] kgf	20300 [22150] kgf	18000 [19640] kgf
		65260 [71190] lbf	52690 [57480] lbf	44750 [48820] lbf	39680 [43290] lbf

[] : Power boost

2) ROBEX 480LC-9A

· 6.55 m (21' 6") BOOM



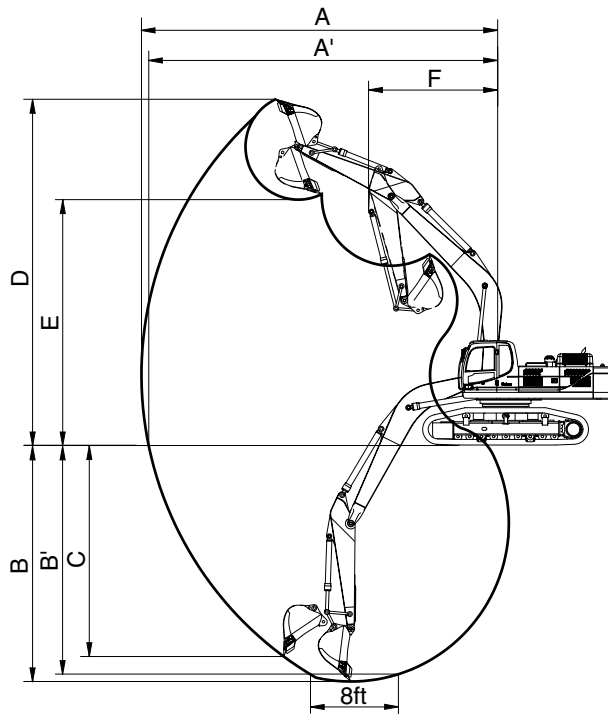
4809A2SP04

Description		2.40 m (7' 10") Arm
Max digging reach	A	10610 mm (34'10")
Max digging reach on ground	A'	10370 mm (34' 0")
Max digging depth	B	6370 mm (20'11")
Max digging depth (8ft level)	B'	6190 mm (20' 4")
Max vertical wall digging depth	C	5400 mm (17' 9")
Max digging height	D	10170 mm (33' 4")
Max dumping height	E	6750 mm (22' 2")
Min swing radius	F	4620 mm (15' 2")
Bucket digging force	SAE	216.7 [236.4] kN
		22100 [24110] kgf
		48720 [53150] lbf
	ISO	251.1 [273.9] kN
		25600 [27930] kgf
		56440 [61570] lbf
Arm crowd force	SAE	276.6 [301.7] kN
		28200 [30760] kgf
		62170 [67820] lbf
	ISO	290.3 [316.7] kN
		29600 [32290] kgf
		65260 [71190] lbf

[] : Power boost

3) ROBEX 480LC-9A

· 9.00 m (29' 6") BOOM

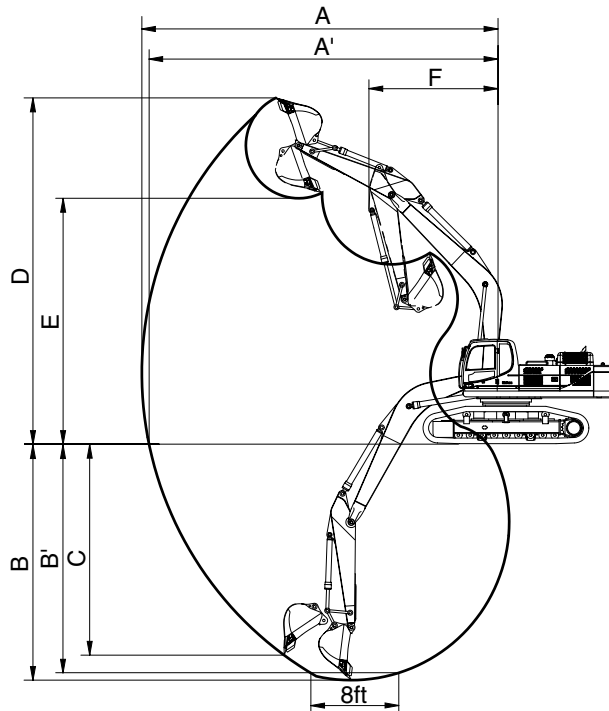


4809A2SP04

Description		5.85 m (19' 2") Arm
Max digging reach	A	16350 mm (53' 8")
Max digging reach on ground	A'	16200 mm (53' 2")
Max digging depth	B	11560 mm (37'11")
Max digging depth (8ft level)	B'	11460 mm (37' 7")
Max vertical wall digging depth	C	10320 mm (33'10")
Max digging height	D	13840 mm (45' 5")
Max dumping height	E	10440 mm (34' 3")
Min swing radius	F	5940 mm (19' 6")
Bucket digging force	SAE	189.3 kN
		19300 kgf
		42550 lbf
	ISO	217.7 kN
		22200 kgf
		48940 lbf
Arm crowd force	SAE	107.9 kN
		11000 kgf
		24250 lbf
	ISO	110.3 kN
		11250 kgf
		24800 lbf

4) ROBEX 520LC-9A

· 7.06 m (23' 2") BOOM

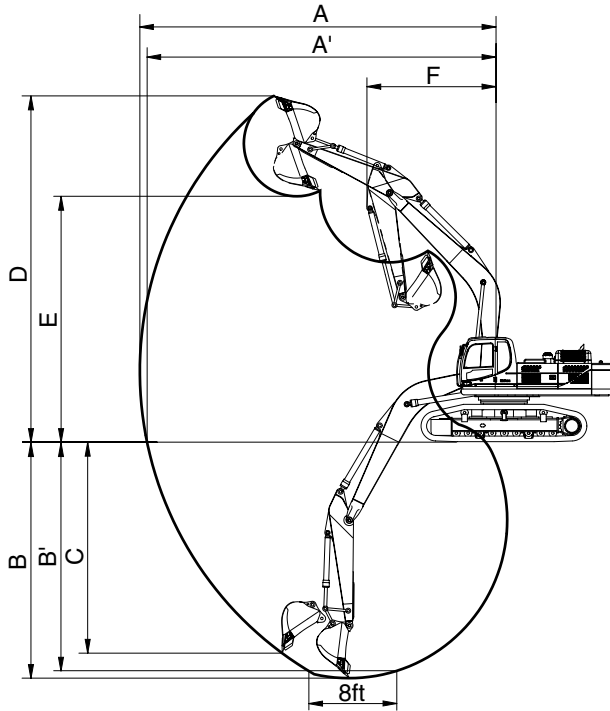


4809A2SP05

Description		2.40 m (7' 10") Arm	2.90 m (9' 6") Arm	3.38 m (11' 1") Arm	4.00 m (13' 1") Arm
Max digging reach	A	11140 mm (36' 7")	11530 mm (37'10")	12080 mm (39' 8")	12640 mm (41' 6")
Max digging reach on ground	A'	10890 mm (35' 9")	11290 mm (37' 0")	11840 mm (38'10")	12420 mm (40' 9")
Max digging depth	B	6610 mm (21' 8")	7110 mm (23' 4")	7590 mm (24'11")	8210 mm (26'11")
Max digging depth (8ft level)	B'	6430 mm (21' 1")	6940 mm (22' 9")	7440 mm (24' 5")	8080 mm (26' 6")
Max vertical wall digging depth	C	4880 mm (16' 0")	4780 mm (15' 8")	5470 mm (17'11")	5980 mm (19' 7")
Max digging height	D	10640 mm (34'11")	10610 mm (34'10")	11080 mm (36' 4")	11290 mm (37' 0")
Max dumping height	E	7290 mm (23'11")	7350 mm (24' 1")	7760 mm (25' 6")	7980 mm (26' 2")
Min swing radius	F	5110 mm (16' 9")	4910 mm (16' 1")	4830 mm (15'10")	4910 mm (16' 1")
Bucket digging force	SAE	247.1 [269.6] kN	251.1[273.9] kN	253.0 [276.0] kN	253.0 [276.0] kN
		25200 [27490] kgf	25600 [27930] kgf	25800 [28150] kgf	25800 [28150] kgf
		55560 [60610] lbf	56440 [61570] lbf	56880 [62050] lbf	56880 [62050] lbf
	ISO	286.4 [312.4] kN	290.3 [316.7] kN	292.2 [318.8] kN	292.2 [318.8] kN
		29200 [31850] kgf	29600 [32290] kgf	29800 [32510] kgf	29800 [32510] kgf
		64370 [70220] lbf	65260 [71190] lbf	65700 [71670] lbf	65700 [71670] lbf
Arm crowd force	SAE	278.5 [303.8] kN	225.6 [246.1] kN	192.2 [209.7] kN	171.6 [187.2] kN
		28400 [30980] kgf	23000 [25090] kgf	19600 [21380] kgf	17500 [19090] kgf
		62610 [68300] lbf	50710 [55320] lbf	43210 [47140] lbf	38580 [42090] lbf
	ISO	291.3 [317.7] kN	235.4 [256.8] kN	200.1 [218.2] kN	177.5 [193.6] kN
		29700 [32400] kgf	24000 [26180] kgf	20400 [22250] kgf	18100 [19750] kgf
		65480 [71430] lbf	52910 [57720] lbf	44970 [49060] lbf	39900 [43530] lbf

[] : Power boost

5) ROBEX 520LC-9A
 · 6.55 m (21' 6") BOOM



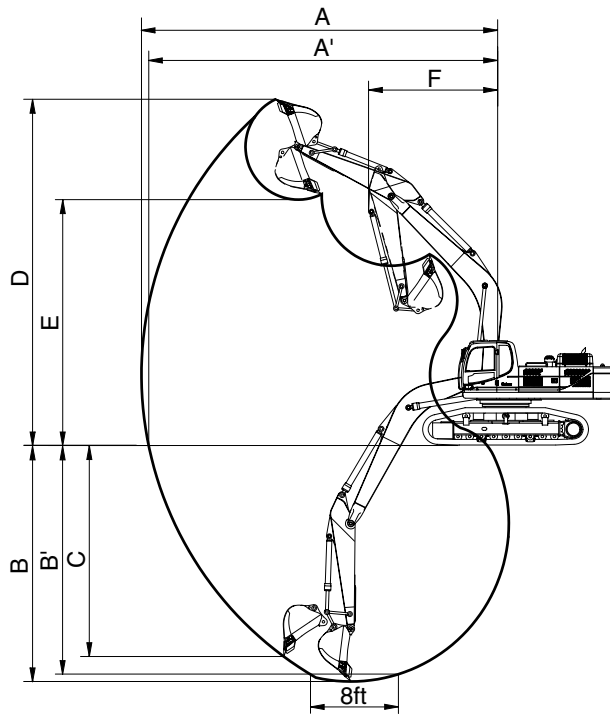
4809A2SP05

Description		2.40 m (7' 10") Arm
Max digging reach	A	10590 mm (34' 9")
Max digging reach on ground	A'	10320 mm (33'10")
Max digging depth	B	6130 mm (20' 1")
Max digging depth (8ft level)	B'	5950 mm (19' 6")
Max vertical wall digging depth	C	4390 mm (14' 5")
Max digging height	D	10260 mm (33' 8")
Max dumping height	E	6920 mm (22' 8")
Min swing radius	F	4650 mm (15' 3")
Bucket digging force	SAE	247.1 [269.6] kN
		25200 [27490] kgf
		55560 [60610] lbf
	ISO	286.4 [312.4] kN
		29200 [31850] kgf
		64370 [70220] lbf
Arm crowd force	SAE	278.5 [303.8] kN
		28400 [30980] kgf
		62610 [68300] lbf
	ISO	291.3 [317.7] kN
		29700 [32400] kgf
		65480 [71430] lbf

[] : Power boost

6) ROBEX 520LC-9A

· 9.00 m (29' 6") BOOM



4809A2SP05

Description		5.85 m (19' 2") Arm
Max digging reach	A	16280 mm (53' 5")
Max digging reach on ground	A'	16100 mm (52'10")
Max digging depth	B	11380 mm (37' 4")
Max digging depth (8ft level)	B'	11280 mm (37' 0")
Max vertical wall digging depth	C	10070 mm (33' 0")
Max digging height	D	13930 mm (45' 8")
Max dumping height	E	10530 mm (34' 7")
Min swing radius	F	5940 mm (19' 6")
Bucket digging force	SAE	212.8 kN
		21700 kgf
		47840 lbf
	ISO	251.1 kN
		25600 kgf
		56440 lbf
Arm crowd force	SAE	107.9 kN
		11000 kgf
		24250 lbf
	ISO	110.8 kN
		11300 kgf
		24910 lbf

4. WEIGHT

1) ROBEX 480LC-9A

Item	R480LC-9A		
	kg	lb	
Upperstructure assembly	20000	44090	
Main frame weld assembly	4430	9770	
Engine assembly	1270	2800	
Main pump assembly	190	420	
Main control valve assembly	420	930	
Swing motor assembly	230	510	
Hydraulic oil tank assembly	450	990	
Fuel tank assembly	270	600	
Counterweight	7.06 m boom	8500	18740
	9.0 m boom	10700	23590
Cab assembly	490	1080	
Lower chassis assembly	19000	41890	
Track frame weld assembly	7060	15570	
Swing bearing	720	1590	
Travel motor assembly	440	970	
Turning joint	50	110	
Track recoil spring	310	680	
Idler	250	550	
Carrier roller	40	90	
Track roller	80	180	
Track-chain assembly (600 mm standard triple grouser shoe)	2700	5950	
Front attachment assembly (7.06 m boom, 3.38 m arm, 2.15 m ³ SAE heaped bucket)	9100	20060	
7.06 m boom assembly	3260	7190	
6.55 m boom assembly	3180	7010	
9.0 m boom assembly	4050	8930	
3.38 m arm assembly	1630	3590	
2.15 m ³ SAE heaped bucket	1740	3840	
Boom cylinder assembly	830	1830	
Arm cylinder assembly	630	1390	
Bucket cylinder assembly	300	660	
Bucket control rod assembly	155	340	

2) ROBEX 520LC-9A

Item	R520LC-9A		
	kg	lb	
Upperstructure assembly	17630	38870	
Main frame weld assembly	4430	9770	
Engine assembly	1270	2800	
Main pump assembly	190	420	
Main control valve assembly	420	930	
Swing motor assembly	230	510	
Hydraulic oil tank assembly	450	990	
Fuel tank assembly	270	600	
Counterweight	7.06 m boom	9700	21380
	9.0 m boom	10700	23590
Cab assembly	490	1080	
Lower chassis assembly	24100	53130	
Lower track frame	2130	4700	
Center frame support	8070	17790	
Swing bearing	720	1590	
Travel motor assembly	440	970	
Turning joint	50	110	
Track recoil spring	310	680	
Idler	250	550	
Carrier roller	40	90	
Track roller	80	180	
Track-chain assembly (600 mm standard triple grouser shoe)	2700	5850	
Front attachment assembly (7.06 m boom, 3.38 m arm, 2.15 m ³ SAE heaped bucket)	9270	20440	
7.06 m boom assembly	3260	7190	
6.55 m boom assembly	3180	7010	
9.0 m boom assembly	4060	8950	
3.38 m arm assembly	1610	3550	
2.15 m ³ SAE heaped bucket	1740	3840	
Boom cylinder assembly	830	1830	
Arm cylinder assembly	630	1390	
Bucket cylinder assembly	380	840	
Bucket control rod assembly	180	400	











5. LIFTING CAPACITIES

1) ROBEX 480LC-9A

(1) 6.55 m (21' 6") boom, 2.40 m (7' 10") arm equipped with 2.15 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe.

·  : Rating over-front

·  : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)		Capacity		Reach
												m (ft)
6.0 m (20.0 ft)	kg					*12480	*12480	*11020	9150	*9470	6440	9.15
	lb					*27510	*27510	*24290	20170	*20880	14200	(30.0)
4.5 m (15.0 ft)	kg			*18440	*18440	*13960	12820	*11650	8840	*9440	5670	9.65
	lb			*40650	*40650	*30780	28260	*25680	19490	*20810	12500	(31.7)
3.0 m (10.0 ft)	kg					*15580	12000	*12420	8450	9440	5290	9.86
	lb					*34350	26460	*27380	18630	20810	11660	(32.3)
1.5 m (5.0 ft)	kg					*16700	11330	*13000	8080	9400	5230	9.80
	lb					*36820	24980	*28660	17810	20720	11530	(32.2)
Ground Line	kg			*22790	17000	*16900	10950	*13090	7840	*9480	5470	9.47
	lb			*50240	37480	*37260	24140	*28860	17280	*20900	12060	(31.1)
-1.5 m (-5.0 ft)	kg	*25320	*25320	*20990	17050	*16060	10840	*12360	7760	*9240	6150	8.83
	lb	*55820	*55820	*46270	37590	*35410	23900	*27250	17110	*20370	13560	(29.0)
-3.0 m (-10.0 ft)	kg	*21780	*21780	*17910	17340	*13920	10980			*8390	7650	7.79
	lb	*48020	*48020	*39480	38230	*30690	24210			*18500	16870	(25.6)
-4.5 m (-15.0 ft)	kg			*12770	*12770							
	lb			*28150	*28150							











- Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
 2. Lifting capacity of the ROBEX series does not exceed 75% of 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 load limited by hydraulic capacity.

2) ROBEX 520LC-9A

(1) 6.55 m (21' 6") boom, 2.40 m (7' 10") arm equipped with 2.15 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe.

·  : Rating over-front

·  : Rating over-side or 360 degree

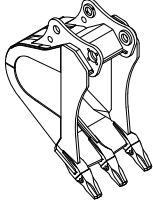
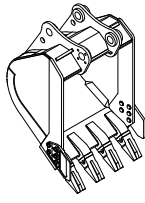
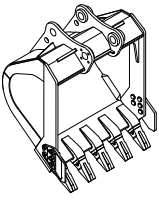
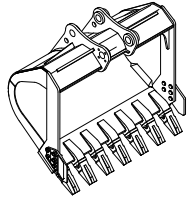
Load point height		Load radius								At max. reach		
		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)		Capacity		Reach
												m (ft)
7.5 m (25.0 ft)	kg lb									*9680 *21340	9420 20770	8.27 (27.1)
6.0 m (20.0 ft)	kg lb					*12520 *27600	*12520 *27600	*10940 *24120	10900 24030	*9510 *20970	7820 17240	9.07 (29.8)
4.5 m (15.0 ft)	kg lb			*18820 *41490	*18820 *41490	*14060 *31000	*14060 *31000	*11610 *25600	10570 23300	*9480 *20900	6980 15390	9.53 (31.3)
3.0 m (10.0 ft)	kg lb					*15650 *34500	14400 31750	*12390 *27320	10170 22420	*9510 *20970	6600 14550	9.71 (31.9)
1.5 m (5.0 ft)	kg lb					*16660 *36730	13740 30290	*12920 *28480	9800 21610	*9540 *21030	6570 14480	9.62 (31.6)
Ground Line	kg lb			*22490 *49580	20990 46270	*16730 *36880	13390 29520	*12920 *28480	9570 21100	*9500 *20940	6930 15280	9.26 (30.4)
-1.5 m (-5.0 ft)	kg lb	*25000 *55120	*25000 *55120	*20550 *45300	*20550 *45300	*15740 *34700	13300 29320	*12050 *26570	9510 20970	*9220 *20330	7840 17280	8.59 (28.2)
-3.0 m (-10.0 ft)	kg lb	*20980 *46250	*20980 *46250	*17260 *38050	*17260 *38050	*13380 *29500	*13380 *29500			*8260 *18210	*8260 *18210	7.49 (24.6)
-4.5 m (-15.0 ft)	kg lb			*11720 *25840	*11720 *25840							

- Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
 2. Lifting capacity of the ROBEX series does not exceed 75% of 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 load limited by hydraulic capacity.

6. BUCKET SELECTION GUIDE

1) ROBEX 480LC-9A

(1) GENERAL BUCKET

			
1.00 m ³ SAE heaped bucket	1.38 m ³ SAE heaped bucket	1.84 m ³ SAE 2.15 m ³ SAE heaped bucket	2.79 m ³ SAE 3.03 m ³ SAE heaped bucket

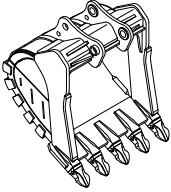
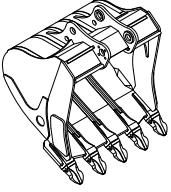
Capacity		Width		Weight	Recommendation					
					7.06 m (23' 2") boom				6.55 m (21' 5") boom	9.0 m (29' 6") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.4 m arm (7' 10")	2.9 m arm (9' 6")	3.38 m arm (11' 1")	4.0 m arm (13' 1")	2.4 m arm (7' 10")	5.85 m arm (19' 2")
1.00 m ³ (1.31 yd ³)	0.90 m ³ (1.17 yd ³)	915 mm (36.0")	1065 mm (41.9")	1220 kg (2690 lb)						
1.38 m ³ (1.80 yd ³)	1.25 m ³ (1.63 yd ³)	1100 mm (43.3")	1250 mm (49.2")	1420 kg (3130 lb)						
1.84 m ³ (2.41 yd ³)	1.65 m ³ (2.16 yd ³)	1140 mm (44.9")	1290 mm (50.8")	1520 kg (3350 lb)						
2.15 m ³ (2.81 yd ³)	1.92 m ³ (2.51 yd ³)	1415 mm (55.7")	1565 mm (61.6")	1740 kg (3840 lb)						
2.79 m ³ (3.65 yd ³)	2.47 m ³ (3.23 yd ³)	1760 mm (69.3")	1910 mm (75.2")	1960 kg (4320 lb)						
3.03 m ³ (3.96 yd ³)	2.67 m ³ (3.49 yd ³)	1890 mm (74.4")	2040 mm (80.3")	2090 kg (4610 lb)						

 Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

 Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

 Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

(2) ROCK-HEAVY DUTY BUCKET

	
◎2.20 m ³ SAE ◎2.43 m ³ SAE heaped bucket	◎2.70 m ³ SAE heaped bucket

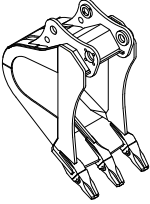
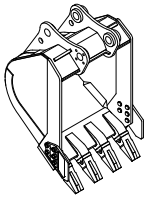
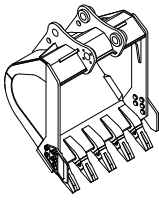
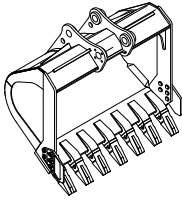
Capacity		Width		Weight	Recommendation				
					7.06 m (23' 2") boom				6.55 m (21' 5") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.4 m arm (7' 10")	2.9 m arm (9' 6")	3.38 m arm (11' 1")	4.0 m arm (13' 1")	2.4 m arm (7' 10")
◎2.20 m ³ (2.88 yd ³)	1.80 m ³ (2.35 yd ³)	1840 mm (72.4")	-	2295 kg (5060 lb)					
◎2.43 m ³ (3.18 yd ³)	2.10 m ³ (2.75 yd ³)	1885 mm (74.2")	-	2335 kg (5150 lb)					
◎2.70 m ³ (3.53 yd ³)	2.50 m ³ (3.27 yd ³)	1790 mm (70.4")	-	2715 kg (5990 lb)					

◎ : Rock-heavy duty bucket

- Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less
- Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less
- Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

2) ROBEX 520LC-9A

(1) GENERAL BUCKET


			
★1.00 m ³ SAE heaped bucket	★1.38 m ³ SAE 1.65 m ³ SAE heaped bucket	2.15 m ³ SAE 2.79 m ³ SAE heaped bucket	3.03 m ³ SAE heaped bucket

Capacity		Width		Weight	Recommendation					
					7.06 m (23' 2") boom				6.55 m (21' 6") boom	9.0 m (29' 6") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.4 m arm (7' 10")	2.9 m arm (9' 6")	3.38 m arm (11' 1")	4.0 m arm (13' 1")	2.4 m arm (7' 10")	5.85 m arm (19' 2")
1.65 m ³ (2.16 yd ³)	1.48 m ³ (1.94 yd ³)	1140 mm (44.9")	1290 mm (50.8")	1520 kg (3350 lb)						
2.15 m ³ (2.81 yd ³)	1.92 m ³ (2.51 yd ³)	1415 mm (55.7")	1565 mm (61.6")	1740 kg (3840 lb)						
2.79 m ³ (3.65 yd ³)	2.47 m ³ (3.23 yd ³)	1760 mm (69.3")	1910 mm (75.2")	1960 kg (4320 lb)						
3.03 m ³ (3.96 yd ³)	2.67 m ³ (3.49 yd ³)	1890 mm (74.4")	2040 mm (80.3")	2090 kg (4610 lb)						
★1.00 m ³ (1.31 yd ³)	0.90 m ³ (1.17 yd ³)	915 mm (36.0")	1065 mm (41.9")	1220 kg (2690 lb)						
★1.38 m ³ (1.80 yd ³)	1.25 m ³ (1.63 yd ³)	1100 mm (43.3")	1250 mm (49.2")	1420 kg (3130 lb)						

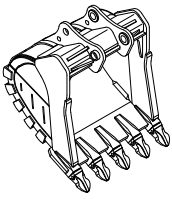
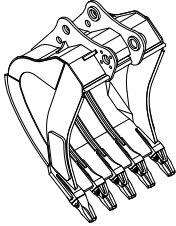
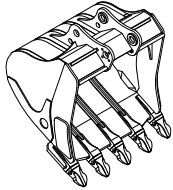
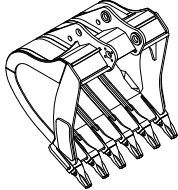
★ : 5.85 m arm only

 Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

 Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

 Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

(2) HEAVY DUTY AND ROCK-HEAVY DUTY BUCKET

			
◆ 2.20 m ³ SAE heaped bucket	◎ 1.80 m ³ SAE heaped bucket	◎ 2.70 m ³ SAE heaped bucket	◎ 3.20 m ³ SAE heaped bucket

Capacity		Width		Weight	Recommendation				
					7.06 m (23' 2") boom				6.55 m (21' 6") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.4 m arm (7' 10")	2.9 m arm (9' 6")	3.38 m arm (11' 1")	4.0 m arm (13' 1")	2.4 m arm (7' 10")
◆ 2.20 m ³ (2.88 yd ³)	1.80 m ³ (2.35 yd ³)	1840 mm (72.4")	-	2170 kg (4780 lb)					
◎ 1.80 m ³ (2.35 yd ³)	1.50 m ³ (1.96 yd ³)	1560 mm (61.4")	-	2110 kg (4650 lb)					
◎ 2.70 m ³ (3.53 yd ³)	2.50 m ³ (3.27 yd ³)	1790 mm (70.5")	-	2715 kg (5990 lb)					
◎ 3.20 m ³ (4.19 yd ³)	2.80 m ³ (3.66 yd ³)	2095 mm (82.5")	-	2900 kg (6390 lb)					

◆ : Heavy duty bucket

◎ : Rock-heavy duty bucket

Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

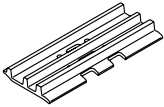
7. UNDERCARRIAGE

1) ROBEX 480LC-9A

(1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

(2) TYPES OF SHOES

Model	Shapes		Triple grouser				
							
R480LC-9A	Shoe width	mm (in)	600 (24)	700 (28)	750 (30)	800 (32)	900 (36)
	Operating weight	kg (lb)	48100 (106040)	48640 (107230)	48910 (107830)	49180 (108420)	49720 (109610)
	Ground pressure	kgf/cm ² (psi)	0.83 (11.80)	0.72 (10.24)	0.68 (9.67)	0.64 (9.10)	0.57 (8.11)
	Overall width	mm (ft-in)	3340 (10' 11")	3440 (11' 3")	3490 (11' 5")	3540 (11' 7")	3640 (11' 11")

(3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	2 EA
Track rollers	9 EA
Track shoes	53 EA

(4) SELECTION OF TRACK SHOE

Suitable track shoes should be selected according to operating conditions.

Method of selecting shoes

Confirm the category from the list of applications in **table 2**, then use **table 1** to select the shoe. Wide shoes (categories B and C) have limitations on applications. Before using wide shoes, check the precautions, then investigate and study the operating conditions to confirm if these shoes are suitable.

Select the narrowest shoe possible to meet the required flotation and ground pressure. Application of wider shoes than recommendations will cause unexpected problem such as bending of shoes, crack of link, breakage of pin, loosening of shoe bolts and the other various problems.

※ **Table 1**

Track shoe	Specification	Category
600 mm triple grouser	Standard	A
700 mm triple grouser	Option	B
750 mm triple grouser	Option	B
800 mm triple grouser	Option	C
900 mm triple grouser	Option	C

※ **Table 2**

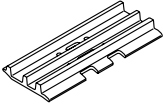
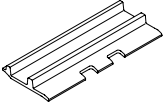
Category	Applications	Applications
A	Rocky ground, river beds, normal soil	<ul style="list-style-type: none"> Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	<ul style="list-style-type: none"> These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees Travel at high speed only on flat ground Travel slowly at low speed if it is impossible to avoid going over obstacles
C	Extremely soft ground (swampy ground)	<ul style="list-style-type: none"> Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees Travel at high speed only on flat ground Travel slowly at low speed if it is impossible to avoid going over obstacles

2) ROBEX 520LC-9A

(1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

(2) TYPES OF SHOES

Model	Shapes		Triple grouser				Double grouser	
								
R520LC-9A	Shoe width	mm (in)	600 (24)	700 (28)	750 (30)	800 (32)	600 (24)	700 (28)
	Operating weight	kg (lb)	51000 (112430)	51540 (113630)	51810 (114220)	52080 (114820)	51000 (112430)	51540 (113630)
	Ground pressure	kgf/cm ² (psi)	0.88 (12.51)	0.76 (10.81)	0.72 (10.24)	0.67 (9.53)	0.88 (12.51)	0.76 (10.81)
	Overall width	mm (ft-in)	3540 (11' 7")	3640 (11' 11")	3690 (12' 1")	3740 (12' 3")	3540 (11' 7")	3640 (11' 11")

(3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	3 EA
Track rollers	9 EA
Track shoes	53 EA

(4) SELECTION OF TRACK SHOE

Suitable track shoes should be selected according to operating conditions.

Method of selecting shoes

Confirm the category from the list of applications in **table 2**, then use **table 1** to select the shoe. Wide shoes (categories B and C) have limitations on applications. Before using wide shoes, check the precautions, then investigate and study the operating conditions to confirm if these shoes are suitable.

Select the narrowest shoe possible to meet the required flotation and ground pressure. Application of wider shoes than recommendations will cause unexpected problem such as bending of shoes, crack of link, breakage of pin, loosening of shoe bolts and the other various problems.

※ **Table 1**

Track shoe	Specification	Category
600 mm triple grouser	Standard	A
600 mm double grouser	Option	A
700 mm triple grouser, double grouser	Option	B
750 mm triple grouser	Option	B
800 mm triple grouser	Option	C

※ **Table 2**

Category	Applications	Applications
A	Rocky ground, river beds, normal soil	<ul style="list-style-type: none"> Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	<ul style="list-style-type: none"> These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees Travel at high speed only on flat ground Travel slowly at low speed if it is impossible to avoid going over obstacles
C	Extremely soft ground (swampy ground)	<ul style="list-style-type: none"> Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees Travel at high speed only on flat ground Travel slowly at low speed if it is impossible to avoid going over obstacles

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSX 11.9
Type	4-cycle turbocharged charger air cooled diesel engine
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	130 × 150 mm (5.12" × 5.91")
Piston displacement	11900 cc (726 cu in)
Compression ratio	16.6 : 1
Rated gross horse power (SAE J1995)	377 ps at 1800 rpm (372 Hp / 277 kW at 1800 rpm)
Maximum torque	186.7 kgf · m (1350 lbf · ft) at 1400 rpm
Engine oil quantity	41.6 l (11.0 U.S. gal)
Dry weight	1270 kg (2800 lb)
Low idling speed	1800 ± 50 rpm
High idling speed	950 + 50 rpm
Rated fuel consumption	155.8 g/Hp · hr at 1800 rpm
Starting motor	Delco Remy 39MT (24V)
Alternator	Delco Remy 24V-70A, *105A
Battery	2 × 12V × 200Ah

*R520LC-9A

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 200 cc/rev
Maximum pressure	330 kgf/cm ² (4690 psi) [360 kgf/cm ² (5120 psi)]
Rated oil flow	2 × 360 l /min (95.1 U.S. gpm / 79.2 U.K. gpm)
Rated speed	1750 rpm

[] : Power boost

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	16 cc/rev
Maximum pressure	40 kgf/cm ² (570 psi)
Rated oil flow	28 l /min (7.4 U.S. gpm/6.2 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification	
	R480/520LC-9A	R480/520LC-9A Long reach
Type	9 spools	
Operating method	Hydraulic pilot system	
Main relief valve pressure	330 kgf/cm ² (4690 psi) [360 kgf/cm ² (5120 psi)]	330 kgf/cm ² (4690 psi) [Not applied power boost]
Port relief valve pressure	Boom	380 kgf/cm ² (5400 psi)
	Arm	380 kgf/cm ² (5400 psi)
	Bucket	380 kgf/cm ² (5400 psi)

[] : Power boost

5) SWING MOTOR

Item	Specification
Type	Fixed displacement axial piston motor
Capacity	151 cc/rev
Relief pressure	285 kgf/cm ² (4050 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	59 kgf · m (427 lbf · ft)
Brake release pressure	33~50 kgf/cm ² (470~711 psi)
Reduction gear type	2 - stage planetary

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	330 kgf/cm ² (4690 psi)
Capacity (max / min)	160/100 cc/rev
Reduction gear type	3-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	17~50 kgf/cm ² (242~711 psi)
Braking torque	103 kgf · m (745 lbf · ft)

7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	∅ 170 × ∅ 115 × 1570 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	∅ 190 × ∅ 130 × 1820 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	∅ 160 × ∅ 110 × 1370 mm (R480LC-9A) ∅ 170 × ∅ 115 × 1370 mm (R520LC-9A)
	Cushion	Extend only

※ Discoloration of cylinder rod can occur when the friction reduction additive of lubrication oil spreads on the rod surface.

※ Discoloration does not cause any harmful effect on the cylinder performance.

8) SHOE

Item		Width	Ground pressure	Link quantity	Overall width
R480LC-9A	Standard	★600 mm (24")	0.83 kgf/cm ² (11.80 psi)	53	3340 mm (10' 11")
	Option	★700 mm (28")	0.72 kgf/cm ² (10.24 psi)	53	3440 mm (11' 3")
		★750 mm (30")	0.68 kgf/cm ² (9.67 psi)	53	3490 mm (11' 5")
		★800 mm (32")	0.64 kgf/cm ² (9.10 psi)	53	3540 mm (11' 7")
		★900 mm (36")	0.57 kgf/cm ² (8.11 psi)	53	3640 mm (11' 11")
R520LC-9A	Standard	★600 mm (24")	0.88 kgf/cm ² (12.51 psi)	53	3540 mm (11' 7")
	Option	★700 mm (28")	0.76 kgf/cm ² (10.81 psi)	53	3640 mm (11' 11")
		★750 mm (30")	0.72 kgf/cm ² (10.24 psi)	53	3690 mm (12' 1")
		★800 mm (32")	0.67 kgf/cm ² (9.53 psi)	53	3740 mm (12' 3")
		※600 mm (24")	0.88 kgf/cm ² (12.51 psi)	53	3540 mm (11' 7")
		※700 mm (28")	0.76 kgf/cm ² (10.81 psi)	53	3640 mm (11' 11")

★ : Triple grouser

※ : Double grouser

9) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
R480LC-9A	1.00 m ³ (1.31 yd ³)	0.90 m ³ (1.17 yd ³)	3	915 mm (36.0")	1065 mm (47.6")
	1.38 m ³ (1.80 yd ³)	1.25 m ³ (1.63 yd ³)	4	1100 mm (43.3")	1250 mm (49.2")
	1.84 m ³ (2.41 yd ³)	1.65 m ³ (2.16 yd ³)	5	1140 mm (44.9")	1290 mm (50.8")
	2.15 m ³ (2.81 yd ³)	1.92 m ³ (2.51 yd ³)	5	1415 mm (55.7")	1565 mm (61.6")
	◎2.20 m ³ (2.88 yd ³)	1.80 m ³ (2.35 yd ³)	5	1840 mm (72.4")	-
	◎2.43 m ³ (3.18 yd ³)	2.10 m ³ (2.75 yd ³)	5	1885 mm (74.2")	-
	2.79 m ³ (3.65 yd ³)	2.47 m ³ (3.23 yd ³)	7	1760 mm (69.3")	1910 mm (75.2")
	3.03 m ³ (3.96 yd ³)	2.67 m ³ (3.49 yd ³)	7	1890 mm (74.4")	2040 mm (80.3")
R520LC-9A	1.65 m ³ (2.16 yd ³)	1.48 m ³ (1.94 yd ³)	5	1140 mm (44.9")	1290 mm (50.8")
	2.15 m ³ (2.81 yd ³)	1.92 m ³ (2.51 yd ³)	5	1415 mm (55.7")	1565 mm (61.6")
	2.79 m ³ (3.65 yd ³)	2.47 m ³ (3.23 yd ³)	5	1760 mm (69.3")	1910 mm (75.2")
	3.03 m ³ (3.96 yd ³)	2.67 m ³ (3.49 yd ³)	6	1890 mm (74.4")	2040 mm (80.3")
	★1.00 m ³ (1.31 yd ³)	0.90 m ³ (1.17 yd ³)	3	915 mm (36.0")	1065 mm (47.6")
	★1.38 m ³ (1.80 yd ³)	1.25 m ³ (1.63 yd ³)	5	1100 mm (43.3")	1250 mm (49.2")
	◆2.20 m ³ (2.88 yd ³)	1.80 m ³ (2.35 yd ³)	5	1840 mm (71.3")	-
	◎1.80 m ³ (2.35 yd ³)	1.50 m ³ (1.96 yd ³)	5	1560 mm (61.4")	-
	◎3.20 m ³ (4.19 yd ³)	2.80 m ³ (3.66 yd ³)	7	2095 mm (82.5")	-

★ : 5.85 m arm only

◆ : Heavy duty bucket

◎ : Rock - heavy duty bucket

9. RECOMMENDED OILS

Use only oils listed below. Do not mix different brand oil.

Please use HYUNDAI genuine oil and grease.

Service point	Kind of fluid	Capacity ℓ (U.S. gal)	Ambient temperature °C (°F)						
			-50 (-58)	-30 (-22)	-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)
Engine oil pan	Engine oil	41.6 (11.0)	★SAE 5W-40						
			SAE 30						
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Swing drive	Gear oil	5.0×2 (1.3×2)	★SAE 75W-90						
Final drive		5.5×2 (1.5×2)	SAE 80W-90						
Hydraulic tank	Hydraulic oil	Tank: 262 (69.2) System: 380 (100)	★ISO VG 15						
			ISO VG 32						
			ISO VG 46						
			ISO VG 68						
Fuel tank	Diesel fuel★ ¹	621 (164)	★ASTM D975 NO.1						
			ASTM D975 NO.2						
Fitting (grease nipple)	Grease	As required	★NLGI NO.1						
			NLGI NO.2						
Radiator (reservoir tank)	Mixture of antifreeze and water	70 (18.5)	Ethylene glycol base permanent type (50 : 50)						
			★Ethylene glycol base permanent type (60 : 40)						

SAE : Society of Automotive Engineers

API : American Petroleum Institute

ISO : International Organization for Standardization

NLGI : National Lubricating Grease Institute

ASTM : American Society of Testing and Material

★¹ Ultra low sulfur diesel

- sulfur content ≤ 15 ppm

★ : Cold region

Russia, CIS, Mongolia