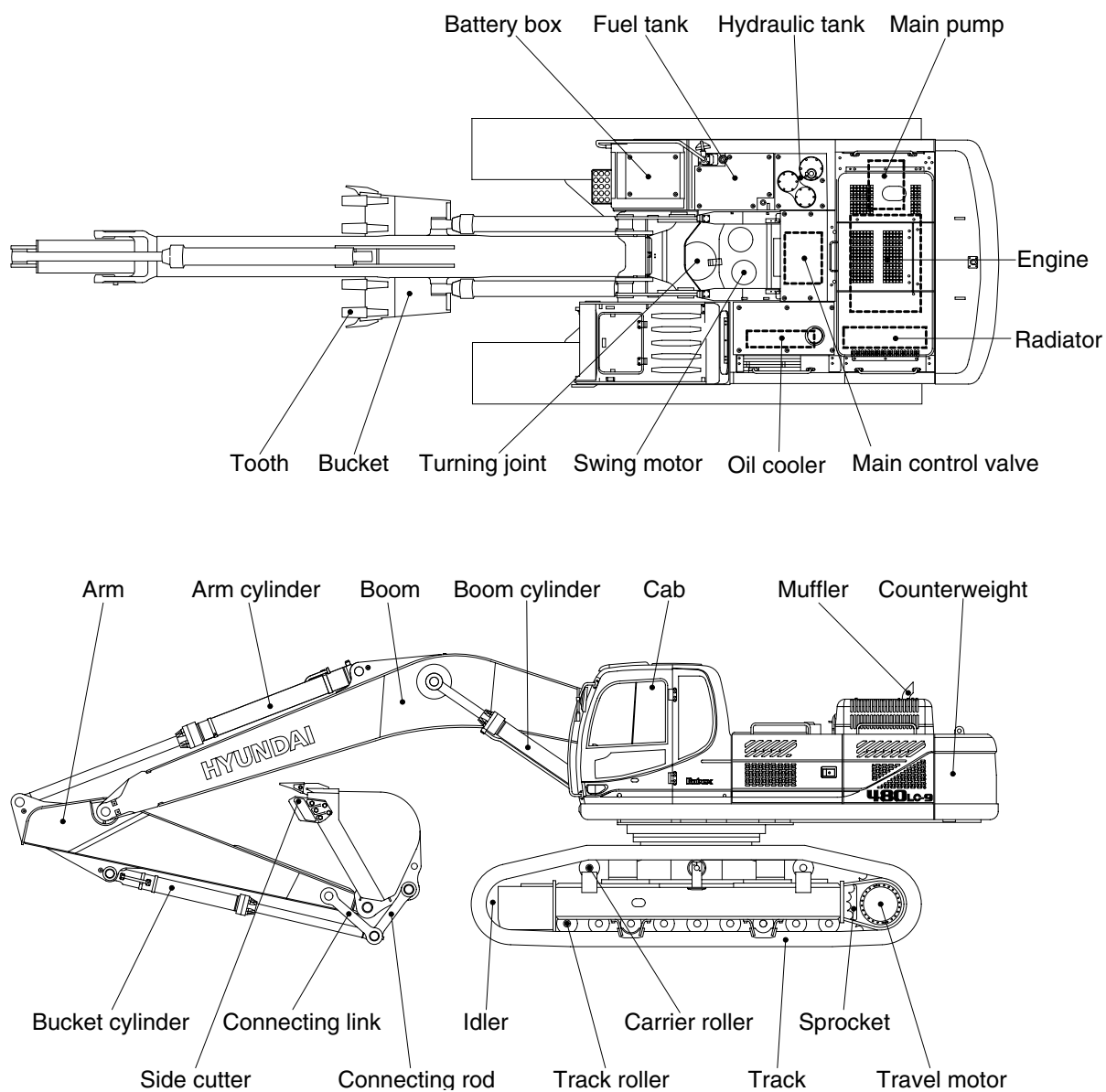


SPECIFICATIONS

1. MAJOR COMPONENT

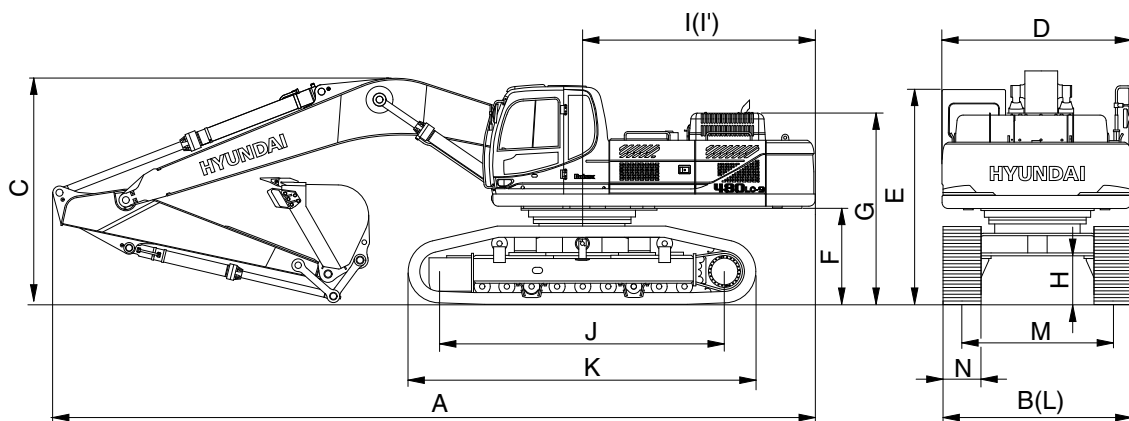


48092SP01

2. SPECIFICATIONS

1) ROBEX 480LC-9

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

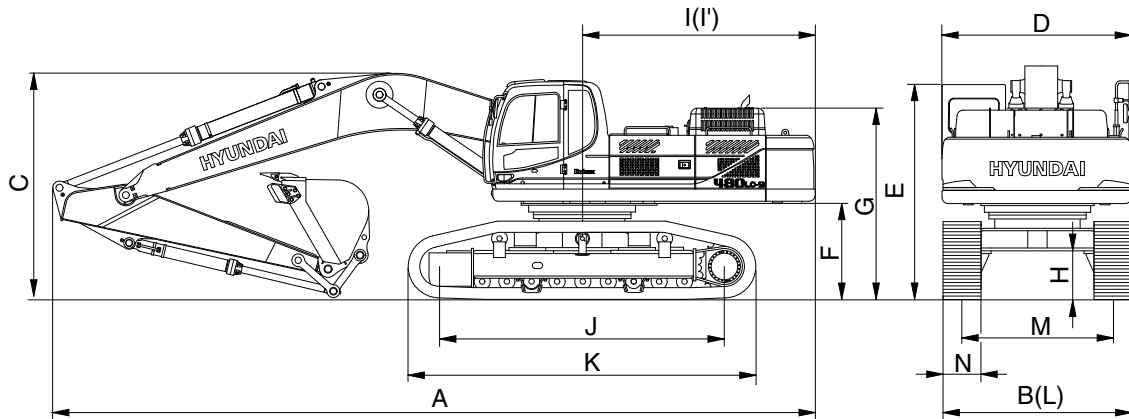


48092SP02

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)	12060 (39' 7")
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		3695 (12' 1")
Rear-end swing radius	I'		3750 (12' 4")
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)	3.2/5.0 (2.0/3.1)
Swing speed		rpm	9.0
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 480-9

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

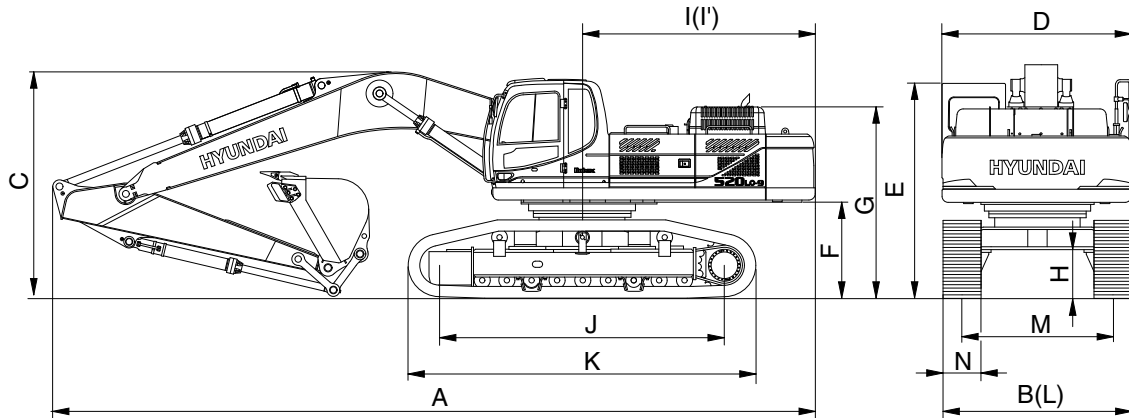


48092SP02

Description		Unit	Specification
Operating weight		kg (lb)	46900 (103400)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	2.15 (2.81)
Overall length	A	mm (ft-in)	12060 (39' 7")
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		3695 (12' 1")
Rear-end swing radius	I'		3750 (12' 4")
Distance between tumblers	J		4040 (13' 3")
Undercarriage length	K		5032 (16' 6")
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)	3.2/5.0 (2.0/3.1)
Swing speed		rpm	9.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.89 (12.66)
Max traction force		kg (lb)	38500 (84800)

3) ROBEX 520LC-9

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

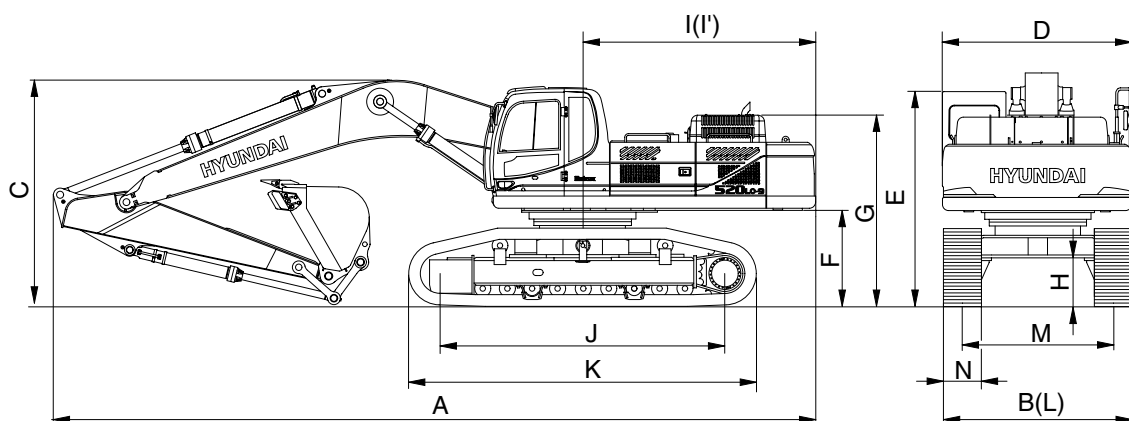


48092SP03

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	mm (ft-in)	12060 (39' 7")
Overall width, with 600 mm shoe (transport position / working position)	B		2990/3540 (9' 10"/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		3695 (12' 1")
Rear-end swing radius	I'		3750 (12' 4")
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)	3.2/5.0 (2.0/3.3)
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 (84880)

4) ROBEX 520LC-9

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

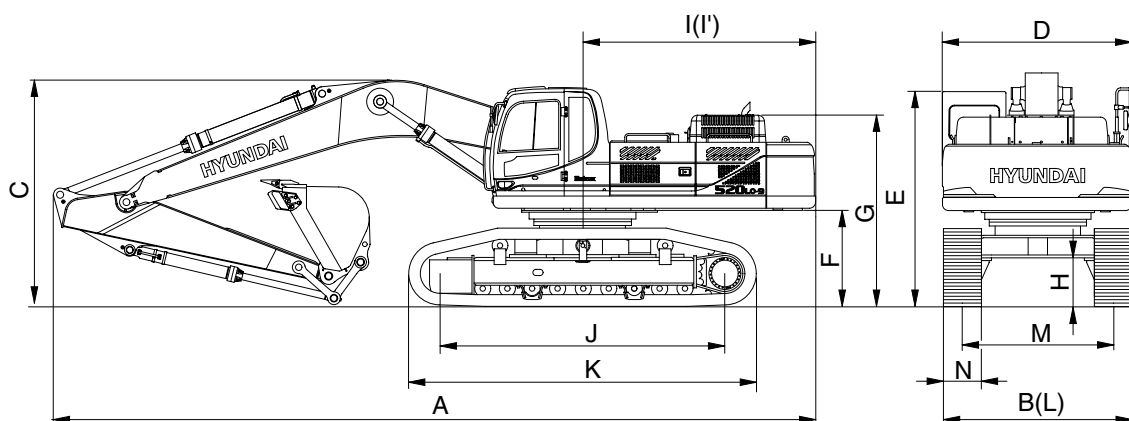


48092SP03

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)	11780 (38' 8")
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		3695 (12' 1")
Rear-end swing radius	I'		3750 (12' 4")
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)	3.2/5.0 (2.0/3.1)
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)

5) ROBEX 520LC-9

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



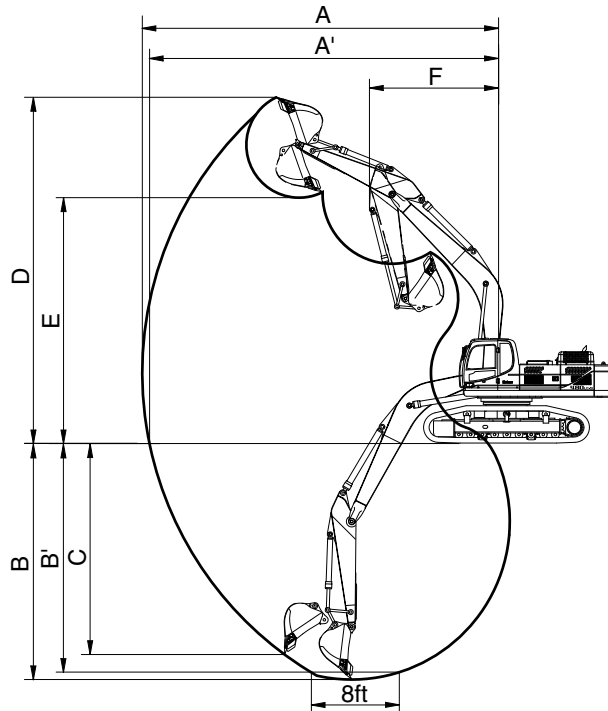
48092SP03

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)	13800 (45' 3")
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		3695 (12' 1")
Rear-end swing radius	I'		3750 (12' 4")
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)	3.2/5.0 (2.0/3.1)
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-9

· 7.06 m (23' 2") BOOM



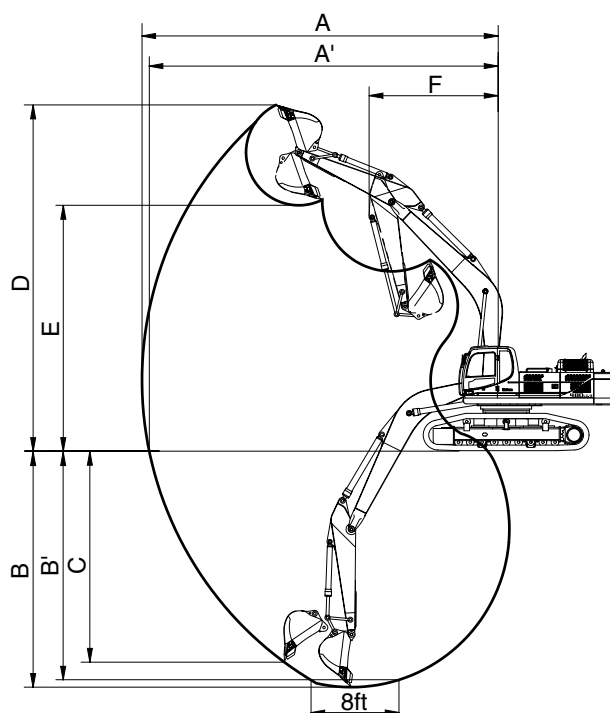
48092SP04

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' 7")	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-9

· 6.55 m (21' 6") BOOM



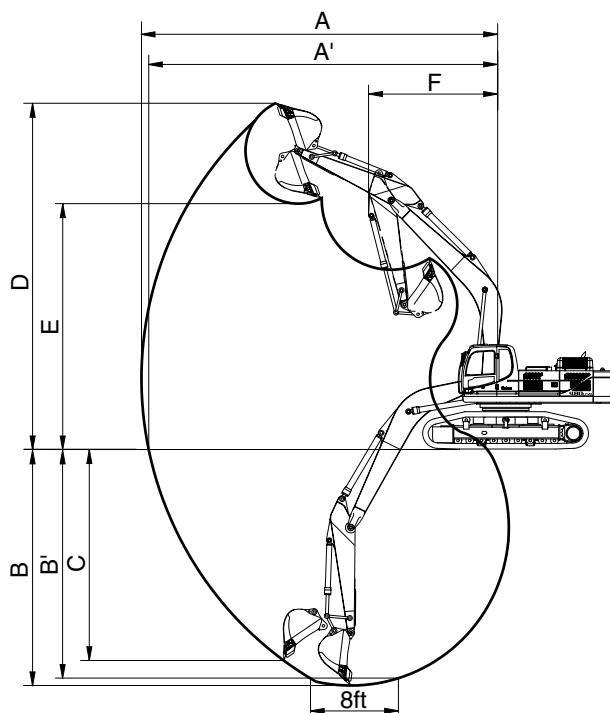
48092SP04

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-9

· 9.00 m (29' 6") BOOM

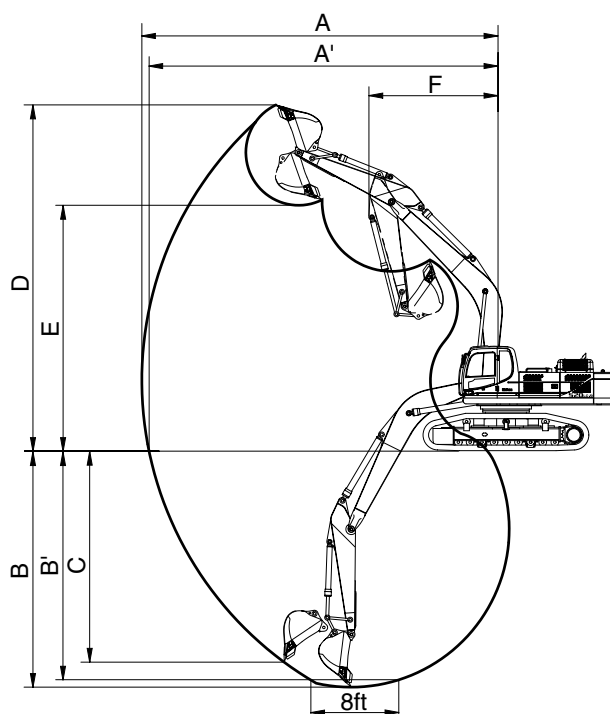


48092SP04

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-9

· 7.06 m (23' 2") BOOM



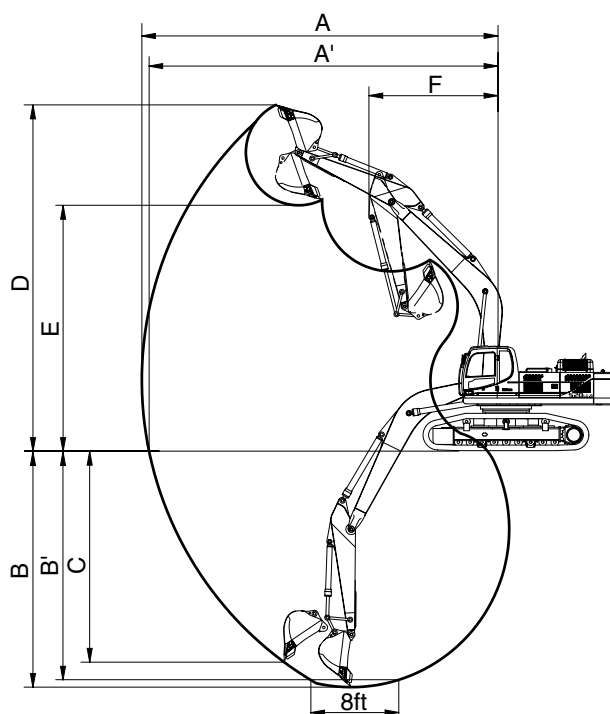
48092SP05

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-9

· 6.55 m (21' 6") BOOM



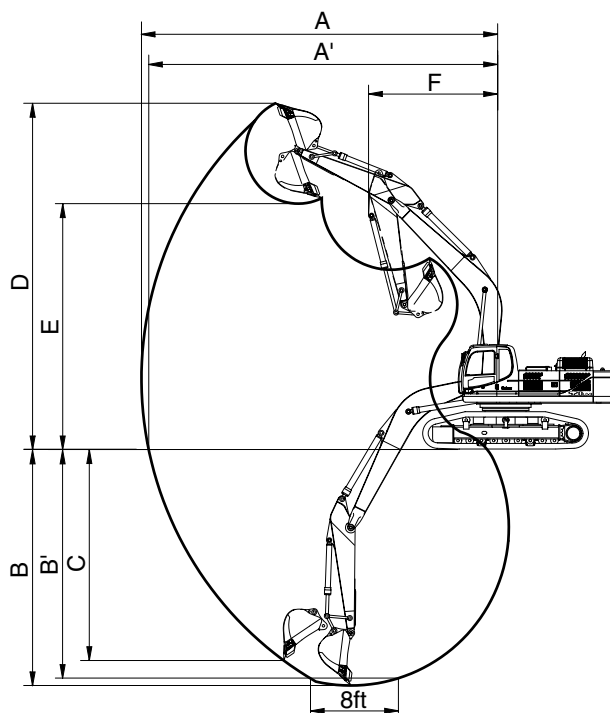
48092SP05

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-9

· 9.00 m (29' 6") BOOM



48092SP05

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-9

Item		R480LC-9		R480-9	
		kg	lb	kg	lb
Upperstructure assembly		20000	44090	←	←
Main frame weld assembly		4430	9770	←	←
Engine assembly		940	2070	←	←
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	9200	20280	←	←
	9.0 m boom	10700	23590	←	←
Cab assembly		490	1080	←	←
Lower chassis assembly		19000	41890	17800	39240
Track frame weld assembly		7060	15570	6600	14550
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	2500	5510
Front attachment assembly (7.06 m boom, 3.38 m arm, 2.15 m³ 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 m³ 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-9

Item		R520LC-9	
		kg	lb
Upperstructure assembly		17630	38870
Main frame weld assembly		4430	9770
Engine assembly		940	2070
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	10200	22500
	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 m³ 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 m³ 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-9

(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 and 9200 kg (20280 lb) counterweight.

·  : 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 lb					*12480 *27510	*12480 *27510	*11020 *24290	9310 20530	*9470 *20880	6570 14480	9.15 (30.0)
4.5 m (15.0 ft)	kg lb			*18440 *40650	*18440 *40650	*13960 *30780	13040 28750	*11650 *25680	9010 19860	*9440 *20810	5790 12760	9.65 (31.7)
3.0 m (10.0 ft)	kg lb					*15580 *34350	12220 26940	*12420 *27380	8610 18980	*9470 *20880	5410 11930	9.86 (32.3)
1.5 m (5.0 ft)	kg lb					*16700 *36820	11550 25460	*13000 *28660	8240 18170	*9510 *20970	5340 11770	9.80 (32.2)
Ground Line	kg lb			*22790 *50240	17330 38210	*16900 *37260	11170 24630	*13090 *28860	8000 17640	*9480 *20900	5590 12320	9.47 (31.1)
-1.5 m (-5.0 ft)	kg lb	*25320 *55820	*25320 *55820	*20990 *46270	17370 38290	*16060 *35410	11060 24380	*12360 *27250	7920 17460	*9240 *20370	6280 13850	8.83 (29.0)
-3.0 m (-10.0 ft)	kg lb	*21780 *48020	*21780 *48020	*17910 *39480	17670 38960	*13920 *30690	11190 24670			*8390 *18500	7800 17200	7.79 (25.6)
-4.5 m (-15.0 ft)	kg lb			*12770 *28150	*12770 *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) 7.06 m (23' 2") boom, 3.38 m (11' 1") arm equipped with 2.15 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 9200 kg (20280 lb) counterweight.

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)		9.0 m (30.0 ft)		Capacity		Reach
														m (ft)
6.0 m (20.0 ft)	kg							*9220	*9220	*8240	6740	*7490	4800	10.75
	lb							*20330	*20330	*18170	14860	*16510	10580	(35.3)
4.5 m (15.0 ft)	kg					*12140	*12140	*10130	9050	*8910	6530	*7530	4320	11.17
	lb					*26760	*26760	*22330	19950	*19640	14400	*16600	9520	(36.6)
3.0 m (10.0 ft)	kg			*19830	18930	*14060	12170	*11170	8540	*9450	6260	7470	4070	11.35
	lb			*43720	41730	*31000	26830	*24630	18830	*20830	13800	16470	8970	(37.2)
1.5 m (5.0 ft)	kg			*22320	17460	*15610	11360	*12080	8080	*9940	5990	7420	4010	11.30
	lb			*49210	38490	*34410	25040	*26630	17810	*21910	13210	16360	8840	(37.1)
Ground Line	kg			*22800	16860	*16390	10850	*12610	7730	*10190	5790	7670	4140	11.02
	lb			*50270	37170	*36130	23920	*27800	17040	*22470	12760	16910	9130	(36.2)
-1.5 m (-5.0 ft)	kg	*18070	*18070	*21950	16730	*16290	10610	*12600	7550	*10010	5680	*7770	4500	10.49
	lb	*39840	*39840	*48390	36880	*35910	23390	*27780	16640	*22070	12520	*17130	9920	(34.4)
-3.0 m (-10.0 ft)	kg	*24350	*24350	*20080	16870	*15280	10610	*11850	7530			*7590	5240	9.66
	lb	*53680	*53680	*44270	37190	*33690	23390	*26120	16600			*16730	11550	(31.7)
-4.5 m (-15.0 ft)	kg	*22100	*22100	*16990	*16990	*13120	10820	*9890	7710			*6910	6720	8.43
	lb	*48720	*48720	*37460	*37460	*28920	23850	*21800	17000			*15230	14820	(27.7)
-6.0 m (-20.0 ft)	kg			*11930	*11930	*8900	*8900							
	lb			*26300	*26300	*19620	*19620							

(3) 9.0 m (29' 6") boom, 5.85 m (19' 2") arm equipped with 1.38 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 10700 kg (23590 lb) counterweight.

Load point height		Load radius												At max. reach		
		3.0 m (10.0 ft)		5.0 m (15.0 ft)		7.0 m (25.0 ft)		9.0 m (30.0 ft)		11.0 m (35.0 ft)		13.0 m (45.0 ft)		Capacity		Reach
																m (ft)
10.0 m (35.0 ft)	kg lb													*4310 *9500	3590 7910	13.54 (44.4)
8.0 m (25.0 ft)	kg lb											*2660 *5860	*2660 *5860	*4240 *9350	2910 6420	14.55 (47.7)
6.0 m (20.0 ft)	kg lb									*5190 *11440	*5190 *11440	*4250 *9370	3640 8020	*4230 *9330	2490 5490	15.20 (49.9)
4.0 m (15.0 ft)	kg lb							*6800 *14990	*6800 *14990	*5710 *12590	4950 10910	*4990 *11000	3450 7610	*4270 *9410	2240 4940	15.55 (51.0)
2.0 m (5.0 ft)	kg lb			*16010 *35300	16000 35270	*10420 *22970	9730 21450	*7780 *17150	6520 14370	*6260 *13800	4560 10050	*5280 *11640	3230 7120	*4320 *9520	2110 4650	15.61 (51.2)
Ground Line	kg lb			*16790 *37020	14290 31500	*11730 *25860	8750 19290	*8570 *18890	5940 13100	*6720 *14820	4210 9280	*5510 *12150	3020 6660	*4390 *9680	2110 4650	15.38 (50.5)
-2.0 m (-5.0 ft)	kg lb	*10920 *24070	*10920 *24070	*17330 *38210	13650 30090	*12300 *27120	8170 18010	*9000 *19840	5540 12210	*6970 *15370	3950 8710	*5550 *12240	2880 6350	*4450 *9810	2250 4960	14.87 (48.8)
-4.0 m (-15.0 ft)	kg lb	*14070 *31020	*14070 *31020	*17370 *38290	13550 29870	*12100 *26680	7950 17530	*8940 *19710	5340 11770	*6850 *15100	3820 8420	*4730 *10430	2830 6240	*4450 *9810	2560 5640	14.02 (46.0)
-6.0 m (-20.0 ft)	kg lb	*17730 *39090	*17730 *39090	*15490 *34150	13780 30380	*11110 *24490	7980 17590	*8260 *18210	5340 11770	*6160 *13580	3850 8490			*4320 *9520	3160 6970	12.76 (41.9)
-8.0 m (-25.0 ft)	kg lb	*17880 *39420	*17880 *39420	*12400 *27340	*12400 *27340	*9090 *20040	8270 18230	*6620 *14590	5560 12260					*3820 *8420	*3820 *8420	10.94 (35.9)
-10.0 m (-35.0 ft)	kg lb					*5220 *11510	*5220 *11510									

2) ROBEX 520LC-9

(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 and 10200 kg (22490 lb) counterweight.

·  : 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	9450 20830	8.27 (27.1)
6.0 m (20.0 ft)	kg lb					*12520 *27600	*12520 *27600	*10940 *24120	10930 24100	*9510 *20970	7850 17310	9.07 (29.8)
4.5 m (15.0 ft)	kg lb			*18820 *41490	*18820 *41490	*14060 *31000	*14060 *31000	*11610 *25600	10610 23390	*9480 *20900	7010 15450	9.53 (31.3)
3.0 m (10.0 ft)	kg lb					*15650 *34500	14440 31830	*12390 *27320	10200 22490	*9510 *20970	6620 14590	9.71 (31.9)
1.5 m (5.0 ft)	kg lb					*16660 *36730	13790 30400	*12920 *28480	9840 21690	*9540 *21030	6600 14550	9.62 (31.6)
Ground Line	kg lb			*22490 *49580	21060 46430	*16730 *36880	13430 29610	*12920 *28480	9610 21190	*9500 *20940	6960 15340	9.26 (30.4)
-1.5 m (-5.0 ft)	kg lb	*25000 *55120	*25000 *55120	*20550 *45300	*20550 *45300	*15740 *34700	13350 29430	*12050 *26570	9550 21050	*9220 *20330	7870 17350	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.

(2) 7.06 m (23' 2") boom, 3.38 m (11' 1") arm equipped with 2.15 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 10200 kg (22490 lb) counterweight.

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)		9.0 m (30.0 ft)		Capacity		Reach
														m (ft)
7.5 m (25.0 ft)	kg											*7510	6700	10.00
	lb											*16560	14770	(32.8)
6.0 m (20.0 ft)	kg							*9190	*9190	*8380	7980	*7470	5810	10.66
	lb							*20260	*20260	*18470	17590	*16470	12810	(35.0)
4.5 m (15.0 ft)	kg			*16290	*16290	*12260	*12260	*10120	*10120	*8830	7750	*7510	5290	11.05
	lb			*35910	*35910	*27030	*27030	*22310	*22310	*19470	17090	*16560	11660	(36.3)
3.0 m (10.0 ft)	kg			*20110	*20110	*14150	*14150	*11160	10110	*9380	7470	*7590	5040	11.20
	lb			*44330	*44330	*31200	*31200	*24600	22290	*20680	16470	*16730	11110	(36.7)
1.5 m (5.0 ft)	kg			*22300	21040	*15600	13560	*12020	9640	*9840	7200	*7680	5000	11.13
	lb			*49160	46390	*34390	29890	*26500	21250	*21690	15870	*16930	11020	(36.5)
Ground Line	kg			*22570	20490	*16260	13060	*12490	9310	*10050	7000	*7750	5190	10.82
	lb			*49760	45170	*35850	28790	*27540	20530	*22160	15430	*17090	11440	(35.5)
-1.5 m (-5.0 ft)	kg	*19050	*19050	*21590	20400	*16040	12850	*12390	9130	*9790	6900	*7740	5670	10.26
	lb	*42000	*42000	*47600	44970	*35360	28330	*27320	20130	*21580	15210	*17060	12500	(33.7)
-3.0 m (-10.0 ft)	kg	*25420	*25420	*19580	*19580	*14900	12870	*11510	9130			*7520	6620	9.40
	lb	*56040	*56040	*43170	*43170	*32850	28370	*25380	20130			*16580	14590	(30.8)
-4.5 m (-15.0 ft)	kg	*21120	*21120	*16290	*16290	*12560	*12560	*9330	*9330			*6750	*6750	8.11
	lb	*46560	*46560	*35910	*35910	*27690	*27690	*20570	*20570			*14880	*14880	(26.6)
-6.0 m (-20.0 ft)	kg			*10870	*10870									
	lb			*23960	*23960									

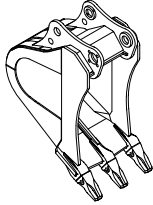
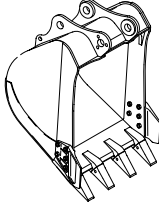
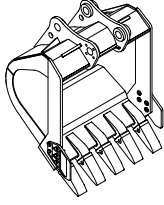
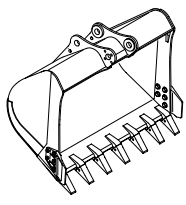
(3) 9.0 m (29' 6") boom, 5.85 m (19' 2") arm equipped with 1.38 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 10700 kg (23590 lb) counterweight.

Load point height		Load radius												At max. reach		
		3.0 m (10.0 ft)		5.0 m (15.0 ft)		7.0 m (25.0 ft)		9.0 m (30.0 ft)		11.0 m (35.0 ft)		13.0 m (45.0 ft)		Capacity		Reach
																m (ft)
10.0 m (35.0 ft)	kg													*4210	3970	13.66
	lb													*9280	8750	(44.8)
8.0 m (25.0 ft)	kg									*4750	*4750	*2800	*2800	*4140	3270	14.63
	lb									*10470	*10470	*6170	*6170	*9130	7210	(48.0)
6.0 m (20.0 ft)	kg									*5130	*5130	*4310	4110	*4130	2840	15.25
	lb									*11310	*11310	*9500	9060	*9110	6260	(50.0)
4.0 m (15.0 ft)	kg					*8700	*8700	*6790	*6790	*5650	5520	*4910	3900	*4170	2580	15.57
	lb					*19180	*19180	*14970	*14970	*12460	12170	*10820	8600	*9190	5690	(51.1)
2.0 m (5.0 ft)	kg			*16120	*16120	*10440	*10440	*7740	7260	*6190	5110	*5190	3670	*4230	2470	15.60
	lb			*35540	*35540	*23020	*23020	*17060	16010	*13650	11270	*11440	8090	*9330	5450	(51.2)
Ground Line	kg			*16710	16170	*11660	9800	*8490	6670	*6630	4760	*5400	3460	*4290	2490	15.35
	lb			*36840	35650	*25710	21610	*18720	14700	*14620	10490	*11900	7630	*9460	5490	(50.4)
-2.0 m (-5.0 ft)	kg	*11290	*11290	*17600	15570	*12130	9250	*8870	6270	*6840	4500	*5410	3320	*4340	2660	14.80
	lb	*24890	*24890	*38800	34330	*26740	20390	*19550	13820	*15080	9920	*11930	7320	*9570	5860	(48.6)
-4.0 m (-15.0 ft)	kg	*14480	*14480	*16990	15500	*11860	9040	*8750	6090	*6680	4380	*4170	3290	*4330	3030	13.91
	lb	*31920	*31920	*37460	34170	*26150	19930	*19290	13430	*14730	9660	*9190	7250	*9550	6680	(45.6)
-6.0 m (-20.0 ft)	kg	*18200	*18200	*15010	*15010	*10780	9100	*8000	6110	*5900	4430			*4180	3740	12.60
	lb	*40120	*40120	*33090	*33090	*23770	20060	*17640	13470	*13010	9770			*9220	8250	(41.3)
-8.0 m (-25.0 ft)	kg	*16860	*16860	*11770	*11770	*8630	*8630	*6210	*6210					*3610	*3610	10.71
	lb	*37170	*37170	*25950	*25950	*19030	*19030	*13690	*13690					*7960	*7960	(35.1)

6. BUCKET SELECTION GUIDE

1) ROBEX 480LC-9

(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

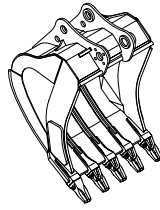
Capacity		Width		Weight	Recommendation					
					7.06 m (23' 2") boom				6.55 m (21' 5") boom	9.0 m (29' 6") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.4 m arm (7' 10")	2.9 m arm (9' 6")	3.38 m arm (11' 1")	4.0 m arm (13' 1")	2.4 m arm (7' 10")	5.85 m arm (19' 2")
1.00 m ³ (1.31 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 m³ SAE
⊙2.43 m³ 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 m³ (2.88 yd³)	1.80 m³ (2.35 yd³)	1840 mm (72.4")	-	2295 kg (5060 lb)					
⊙2.43 m³ (3.18 yd³)	2.10 m³ (2.75 yd³)	1885 mm (74.2")	-	2335 kg (5150 lb)					

⊙ : Rock-heavy duty bucket

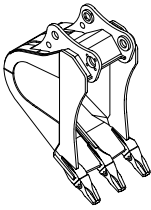
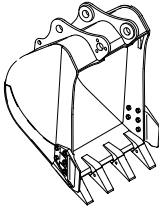
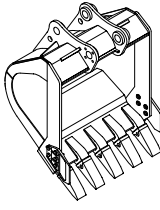
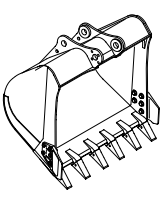
 Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

 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-9

(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)						

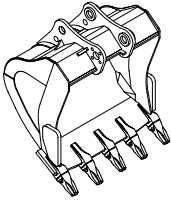
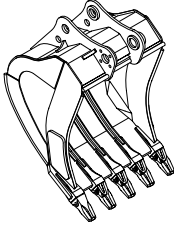
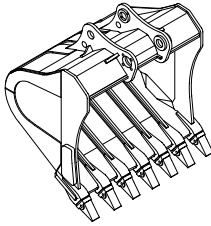
★ : 5.85 m arm only

 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	⊙ 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)					
⊙ 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

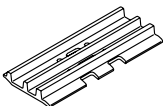
7. UNDERCARRIAGE

1) ROBEX 480LC-9

(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				
							
R480-9	Shoe width	mm (in)	600 (24)	700 (28)	750 (30)	800 (32)	900 (36)
	Operating weight	kg (lb)	46900 (103400)	47440 (104590)	47710 (105180)	47980 (105780)	48520 (106970)
	Ground pressure	kgf/cm ² (psi)	0.89 (12.66)	0.77 (10.95)	0.73 (10.38)	0.68 (9.67)	0.61 (8.67)
	Overall width	mm (ft-in)	3340 (10' 11")	3440 (11' 3")	3490 (11' 5")	3540 (11' 7")	3640 (11' 11")
R480LC-9	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**

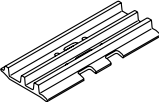
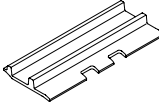
Category	Applications	Applications
A	Rocky ground, river beds, normal soil	• Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	• These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees • Travel 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)	• 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-9

(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-9	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	• Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	• 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)	• 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 QSM 11
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	125 × 147.1 mm (4.92" × 5.79")
Piston displacement	10800 cc (659 cu in)
Compression ratio	16.3 : 1
Rated gross horse power (SAE J1995)	357 hp at 1900 rpm (266 kW at 1900 rpm)
Maximum torque	171 kgf · m (1236 lbf · ft) at 1400 rpm
Engine oil quantity	37.85 l (10 U.S. gal)
Dry weight	942 kg (2077 lb)
Low idling speed	1900 ± 50 rpm
High idling speed	950 + 50 rpm
Rated fuel consumption	161.8 g/Hp · hr at 1900 rpm
Starting motor	Delco Remy 42MT (24V-7.2 kW)
Alternator	Delco Remy 24V-70A
Battery	2 × 12V × 200Ah

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	1800 rpm

[]: Power boost

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15 cc/rev
Maximum pressure	40 kgf/cm ² (570 psi)
Rated oil flow	27 l /min (7.1 U.S. gpm/5.9 U.K. gpm)

4) MAIN CONTROL VALVE

Item		Specification	
		R480/520LC-9	R480/520LC-9 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)	380 kgf/cm ² (5400 psi)
	Arm	380 kgf/cm ² (5400 psi)	280 kgf/cm ² (3980 psi)
	Bucket	380 kgf/cm ² (5400 psi)	280 kgf/cm ² (3980 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	300 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-9) ∅ 160 × ∅ 115 × 1370 mm (R520LC-9)
	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
R480-9	Standard	600 mm (24")	10.89 kgf/cm ² (12.66 psi)	48	3340 mm (10' 11")
	Option	700 mm (28")	0.77 kgf/cm ² (10.95 psi)	48	3440 mm (11' 3")
		750 mm (30")	0.73 kgf/cm ² (10.38 psi)	48	3490 mm (11' 5")
		800 mm (32")	0.68 kgf/cm ² (9.67 psi)	48	3540 mm (11' 7")
		900 mm (36")	0.61 kgf/cm ² (8.67 psi)	48	3640 mm (11' 11")
R480LC-9	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-9	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-9	Standard	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")
	Option	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")
		◎2.20 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-9	Standard	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")
		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")
		2.79 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)	30 (86)	40 (104)
Engine oil pan	Engine oil	38 (10.0)	★SAE 5W-40								
							SAE 30				
			SAE 10W								
			SAE 10W-30								
			SAE 15W-40								
Swing drive	Gear oil	5.0×2 (1.3×2)									
Final drive		Type 1, 2 6.0×2 (1.6×2)	★SAE 75W-90								
		Type 3 12.0×2 (3.2×2)	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	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 soft water★ ¹	50 (13.2)	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

★ : Cold region

Russia, CIS, Mongolia

★1 : Soft water

City water or distilled water