

SERVICEMAN S HANDBOOK

HYDRAULIC EXCAVATORSK60 VSK200 VSK100 VSK200LC VSK120 VSK220 VSK120LC VSK220LC V

Applicable: SK60 V LE-17701~ SK100 V YW-06501~ SK120 V YP-11001~ SK120LC V YP-02301~

SK200 V YN-18001~ SK200LC V YQ-02301~ SK220 V LQ-03301~ SK220LC V LL-02301~

S7L00017E-00

Hydraulic Excavator



KOBELCO

SERVICEMAN HANDBOOK

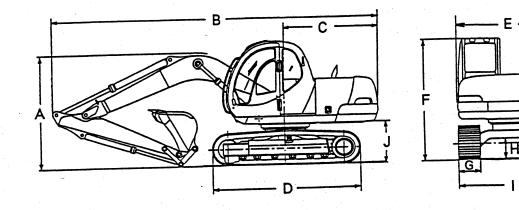
SK60V	LE-17701~
SK100 V	YW-06501~
SK 120 V	LP-11001~
SK 120LCV	YP-02301~
SK200∨	YN-18001~
SK 200LCV	YQ-02301~
SK 220V	LQ-03301~
SK 220LCV	LL-02301~

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SK60V SK120V SK200V SK220V SK100V SK120LCV SK200LCV SK220LCV

GENERAL DIMENSIONS 1.



Unit:mm

H

	•		1	GEN	ERAL	DIMEN						
MODEL	ARM	A	В	С	D	Е	F	G	H		J	
	1,730 (STD)	2,680	6,060					450		2,150		
SK60∨	2,150 (LONG)	3,040	6,045	R1,700	,700 2,785	2,170	2,590	600	380	2,450	770	
	1,730+500 (EXTENTION)	2,890	6,055					000		2,400		
	2,220 (STD)	2,510	7,200					500		2,490		
SK100v	1,900 (SHORT)	2,515	7,215	R2,050	3,320	2,490	2,725	600	455	2,590	905	
	2,700 (LONG)	2,915	7,155					700		2,690		
	2,500 (STD)	2,670	7,560	R2,100		2,490	2,725	500 600	455	2,490 2,590	905	
SK120V SK120LCV	2,100 (SHORT)	2,600	7,550					700 (500)		2,690 (2,490) (2,590)		
	3,000 (LONG)	3,050	7,520		(3,740)	tang tang tang tang tang tang tang tang		(600) (700)		(2,690)		
	2,940 (STD)	2,840	9,380		4,170			600 700		2,800 2,900		
SK200V SK200LCV	2,400 (SHORT)	2,995	9,470	R2,700	R2,700		2,715	5 2,900	800 (600)	465	3,000 (2,990)	1,055
Construction of the second sec	3,300 (LONG)	2,835	9,390	an a	(4,450)		an a	(700) (800)		(3,090) (3,190)		
en e	2,980 (STD)	3,080	9,990	in a sur anna an a	4,350			600 700	480	2,990 3,090		
SK220V	2,500	2.045	10,050	R2,850		2,840	2,930	800		3,190	1,080	
SK220LCV	(SHORT)	3,245	10,050	-			2,000	(600)	(465)	(3,190)		
	3,660 (LONG)	3,065	9,960		(4,650)			(700) (800)	(405)	(3,390)	-	

NOTE : The values in () shows LC type.

SK60V SK120V SK100V SK120LCV

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1

2. MACHINE SPECIFICATION TABLE

			۷.			L OFL	1					
ITEN		MOD	EL		SK60v			SK100v		SK120v/SK120Lcv		
PE	RFOR	MANCE										
STC) bucke	etcapacity	щ		0.25		0.4			0.45		
Buc	ketcap	pacity range	ц	1.14	0.1~0.3			.15~0.45		0.22~0.6		
Tra	vel spe	ed km/	'n	5.5/3.5/2.9	5 (Low spee	d, FC mode)		7.0~1.0		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	7.0~1.0	
Swi	ng spe	ed rp	m		13/6.5			12/4.0			12/4.0	
Gre	deabil	ity °(9	6)	3	5 (70%)		3	5 (70%)		3	5 (70%)	
Tra	velling	t	on		5.2			8.5			9.0	
			on		4.8			7.7			8.0	
-	ging	Arm 1	Ωn	3.7	3.4	3.2	6.5	5.8	5.2	7.0	6.3	5.7
ford	e	Arm length		1,730	2,150	1.730+500	1,900	2,220	2,700	2,100	2,500	3,000
DI	MENS	ONS AND V	VEI		an an Antonio			-				
			on	and shall be a set of the second s	450mm Sh	oes)	10.6 (500mm Sh	oes)	11.8 (500	mm) 12.0)(500mm)
0,00		Arm length		1,730	and the second se	1,730+500	1,900	2,220	2,700	2,100	2,500	3,000
Dim	ensious		10.00	6,060	6,045	6,055	7,215	7,200	7,155	7,550	7,560	7,520
	for	Full width	202	2,170	2,170	2,170	2,490	2,490	2,490	2,490	2,490	2,490
Trans	Transportation	Full height		2,680	3,040	2,890	2,725	2,725	2,915	2,725	2,725	3,050
	Cabha	hight from G.L.		2,000	2,590			2,725			2,725	L
-		eight from G.L.			770			905			905	
Upper		wing redius			1,700			2,050			2,100	
D		ont swing radius	-		1,625				ان او ایک در میکورد. این ا ایک در میکورد این ا در مح در		2,390	
		length of crawlers			2,785						3,740	
		er wheel centers			2,160			2,610		2,865		3,035
					1,700			1,990		1,990		1,990
		gauge width of crawler		2,150		2,490		2,490 2,490				
Lower	Overall	WIGHT OF CREWIER				/0.30	500/0.37		500/0.39 500/0			
د				Grouser	450/0.30 600/0.23		Grouser	600/0.32		Grouser		
	Width			Grouser			Giousei	700/0.28		700/0.29 700,		
	groun	nd pressure mm/kgf/cr	3	Flat	450	/0.31	Flat		10.38	Flat 500/0.39 500/0		A
				Flat	in a second second second second		in the second				a state of the sta	A
		÷		Iriangie	Concession of the local division of the loca	700/0.20	Irlangie	800/0.24 455		Triangle 800/0.25 800/0.24 455		
	and the second data where the second data wh	learance	mm	<u></u>	380		400		400			
	IGINE			10		D1	101	1711 40	<u>D1</u>	191		דור
Mo						B1	ISUZU 4BD1			ISUZU 4BDIT 85/2,100		
	ed power				57/2,200	and the second se	76/2,300			and the second		
distant second	the state of the s	ue kgf•m/r			9.2/1,60	0	24/1,600			30.5/1,600		
and the second second	placen		CC		2,771	- /	3,856			3,856		
		of fuel tank	2		130	and an and and and		250			250	
		ULIC SYSTE	M	Two axia	l-piston, var	able	Two axia	l-piston, vari	eble	Two axis	l-piston, vari	able
	be of p	a part and a state of the state		displacem	ent pumps+	gear pump		nt pumps+		displacem	nt pumps+	gear pump
		of system kgf/	cni		320 (Tra			330		350		
	ing ma	and the second		A	xial pist	pn	in the second	xial pist		i de la contra de la	xial pist	
Tre	vel m	otor		A	xial pist		A	xial pist		Axial piston		
Cor	ntrol v	alves			6-spool		6-spool		and the second	6 -spéol		
Cap	acity of	fHYD. oil tank	1	 The second s second second se second second s	50	Presidente presidentes	the second standing of the second section of	100	1,040,012,		100	
		IG RANGES					and a second	S. 53 & 1.4.	CARLE .			
W	ORKIN	and the second	070	LONG	EXT.	SHORT	STD	LONG	SHORT	STD	LONG	
	ORKIN	and the second	m m	STD		1	1 000	2,220	2,700	2,100	2 500	3,000
م خان دو نه		and the second	am .	1,730	2,150	1,730+500	1,900	E / MH V		2,100	2,500	0,000
Ler	ngth of	f Arm	mm rì	and the second	2,150 0.2	1,730+500	0.45	0.4	0.32	0.5	0.45	0.33
Ler Bud	ngth of cket ca	f Arm pacity	'n	1,730 0.25	0.2	0.2	0.45	0.4				_
Ler Buo Ma	ngth of cket ca x. digg	f Arm pecity ging reach	nn nn	1,730 0.25 6,390	0.2 6,780	0.2 6,840	0.45 7,400	0.4 7,700	0.32 8,160	0.5 7,920	0.45 8,270	0.33
Ler Buo Ma Ma	ngth of cket ca x. digg x. digg	f Arm pacity ging reach ging depth	n nn nn	1,730 0.25 6,390 4,200	0.2 6,780 4,610	0.2 6,840 4,690	0.45 7,400 4,780	0.4 7,700 5,100	0.32 8,160 5,580	0.5 7,920 5,200	0.45 8,270 5,600	0.33 8,730 6,100
Ler Buo Ma Max	ngth of cket ca x. digg x. digg . vertical	f Arm pacity ging reach ging depth wall digging depth	ന് നെ നെ നെ	1,730 0.25 6,390 4,200 3,600	0.2 6,780 4,610 3,960	0.2 6,840 4,690 4,090	0.45 7,400 4,780 4,230	0.4 7,700 5,100 4,560	0.32 8,160 5,580 5,020	0.5 7,920 5,200 4,600	0.45 8,270 5,600 4,980	0.33 8,730 6,100 5,400
Ler Buo Ma Max Max	ngth of cket ca x. digg x. digg vertical x. digg	f Arm pacity ging reach ging depth	n nn nn	1,730 0.25 6,390 4,200	0.2 6,780 4,610	0.2 6,840 4,690	0.45 7,400 4,780	0.4 7,700 5,100	0.32 8,160 5,580	0.5 7,920 5,200	0.45 8,270 5,600	0.33 8,730 6,100

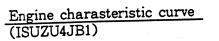
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						00 /01/000			
ITEM	MODEL	SK200 V / SK200LC V SK220 V / SK220 LC				cv			
	ORMANCE								
	ucket capacity m		0.7		0.9				
	capacity range m		0.45~1.1						
Travel			7.0~1.0		7.0~1.0				
Swing	NAME AND ADDRESS OF TAXABLE PARTY.		11/4.0						
Grades			35 (70%)			35 (70%)			
Travel			16.3	(0.0)		18.4 Remove boost	15.0)		
Diggin	Bucket ton		Power boost		and the second	Power boost	9.5		
force	Arm Wi	11.3 (12.3)	9.6 (10.4)	8.8	13.0 (13.7)	11.2 (11.9)	9.5 3,660		
1.1	Arm length mm	2,400	2,940	3,300	2,500	2,980	3,000		
	NSIONS AND WEI		_\ : 401	5 (600mm)	23.0 (600m	m) 226	600mm)		
Operat	ting weight ton	19.0 (600m	and the second se		23.0 (800m	2,980	3,660		
Dimensi	ious Arm length mm	2,400 2,940		3,300	10,050	9,990	9,960		
for	Fulllength mm	9,470	9,380	9,390	2,990	3,330	3,190		
Transport	Fullwidth mm	2,800	0.000	2,990	the second s	3,080	3,190		
	Full height mm	2,995 2,900 2,900		3,245		3,005			
	ab height from G.L. 🛲	an a	2,900			2,930			
	ail height from G.L. 🛲		1,055			1,080			
	ail swing radius 🛛 🛲		2,700			2,850	<u></u>		
Mi	in. front swing radius 📠	3,460			1 050	3,900	4 650		
	verall length of crawlers mm	4,170		4,450	4,350		4,650		
Cr	rawier wheel centers mm	3,370 3,650		and the second se	3,500		3,800		
	reck gauge mm	2,200 2,390		and the second	2,390		2,590		
NO Ve	verall width of crawlers m	2,800 2,990		2,990	3,190				
Lower	and the second secon		600/0.43	600/0.41		600/0.50	600/0.48		
w	idth of shoes	Grouser	700/0.38	700/0.36	Grouser	700/0.44	700/0.42		
gr	round pressure	an an the second se Second second	800/0.33	800/0.32		800/0.39	800/0.37		
	mm/kgf/cm ²	Flat	600/0.44	600/0.42	Flat	600/0.51	600/0.48		
		Triangle	900/0.30	900/0.29	Triangle	<u> </u>	405		
	nd clearance mm		465		4	80	465		
	INE				1		IE T		
Model		MITS	SUBISHI 6D	3 1 – T	MITSUBISHI 6D15-T				
-	ower output PS/rpm		140/2,200	1	165/2,100				
and the second s	torque kgf•m/rpm		47/1,700			60/1,600			
	acement cc		4,948	in information in many con- in- and the state of the	6,919				
	ity of fuel tank 2		315		TALL ALL ALL	315			
	RAULIC SYSTEM				The substance	er in site estat est di			
	of pumps		variable displacement						
Set press	sure of system kgf/cm²	350 (Power boost	the second s		Power boost			
Swing	motor	₽ *	Axial piston		1-17-1921A	Axial piston			
Travel	l motor		Axial piston		a de montre de la marcine de la composition de la composition de la composition de l	Axial piston			
	ol valves		6 -spool	a second a s	6-spool				
	ity of HYD. oil tank L		142		1	160			
WOR	KING RANGES	an a		a series a series de la series d	a n u r g				
Lengt	h of Arm mm	SHORT	STD	LONG	SHORT	STD	LONG		
		2,400	2,940	3,300	2,500	2,980	3,660		
Bucke	t capacity लौ	0.8	0.7	0.6	1.0	0.9	0.7		
Max. d	digging reach mm	9,420	9,900	10,220	9,890	10,310	10,970		
-	digging depth mm	6,190	6,700	7,090	6,530	7,010	7,690		
	rtical wall digging depth am	5,550	6,080	6,460	5,830	6,180	6,790		
	digging height mm	9,400	9,660	9,770	9,630	9,770	10,170		
	dumping clearance mm	6,560	6,830	6,970	6,710	6,870	7,250		
IVIAX. O	Jumping clearance mm	0,000	1 0,000			1 0,070	1		

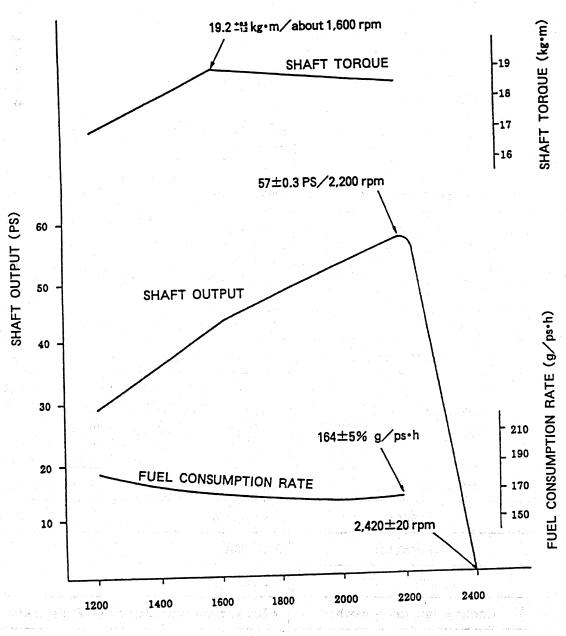
3. MAJOR SPECIFICATIONS

3-1 ENGINE SPECIFICATIONS, CHARACTERISTIC CURVE

Model		ISUZU 4JB1 Diesel engine				
Туре		4cycle, Water-cooled, Direct injection				
No. of cylinder-B	ore×Stroke	4-93mm×102m	ım			
Total displac	ement	2,771cc				
Compression	ratio	18.2				
output ra	ting	57PS/2,200 rpm	n si			
Max. tor	que	19.2kgf•m/1,60)0 rpm			
High idling		2,420±20 rpm				
Low idling		925±20 rpm				
Injection start pressure		185kgf/cm²				
Firing order		1-3-4-2				
Fuel injection	timing	17° before the top dead point				
Compression	pressure	30kgf∕cm²at 200 rpm				
		Valve clearance	Open	Close		
Valve clearance Valve action timing	Suction valve	In cold condition 0.4mm	24.5° before the top dead point	55.5° after the bottom dead point		
	Exhaust valve	In cold condition 0.4mm	54° before the bottom dead point	26° after the top dead point		
Motion of the	ermostat	Bigining of ope	ening at 82°C, Fu	ll open at 95°C		
Starte	r alle alle alle alle alle alle alle all	3.5KW				
Alternator		24V-20A				
Empty w	eight	240 kg				
Cooling fan dri	ve method	\$450 suction type, Belt drive, Pulley ratio1.117				
Turning di	rection	Counterclockw	vise as viewed f	rom flywheel		



1



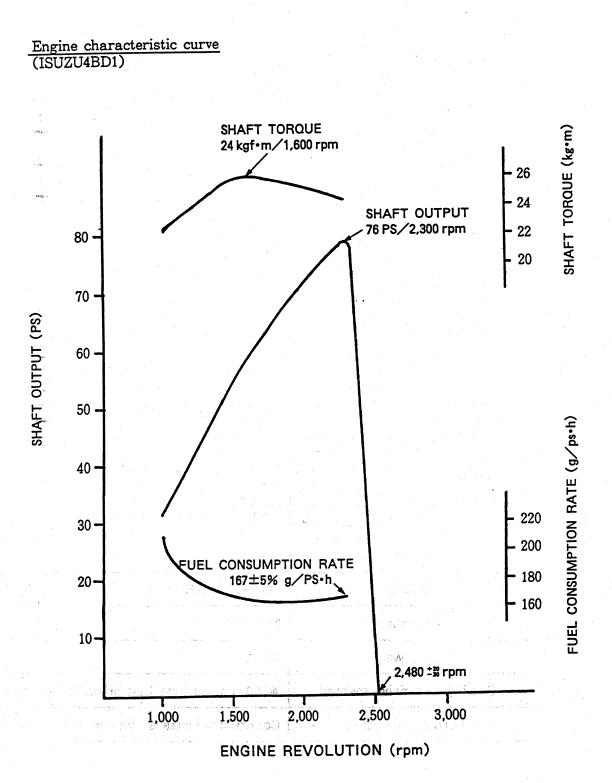
ENGINE REVOLUTION (rpm)

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SK100~

Model		ISUZU 4BD1 Diesel engine				
Туре		4cycle, Water-cooled, Direct injection				
No. of cylinder-Bore×Stroke Total is dis placement		4-102mm×118m	ım			
		3,856cc				
Compressior	ratio	17.5	<u></u>			
output ra	ting	76PS/2,300 rpm		<u>, , , , , , , , , , , , , , , , , , , </u>		
Max. tor	que	24kgf•m/1,600 r	pm			
High idling		2480 ±3 rpm				
Low idling		935±25 rpm	<u> </u>			
Injection start pressure		150kgf/cm²				
Firing order		1-3-4-2				
Fuel injection	timing	18° before the top dead point				
Compression	pressure	31kgf∕cm²at 200 rpm				
		Valve clearance	Open	Close		
Valve clearance Valve action timing	Suction valve	In cold condition 0.4mm	19° before the top dead point	47° after the bottom dead point		
Valve action timing	Exhaust valve	In cold condition 0.4mm	57° before the bottom dead point	15° after the top dead point		
Motion of the	ermostat	Bigining of opening at 82°C, Full open at 95°C				
Starte	F	24V-4.5KW				
Alternator		24V-30A				
Empty we	eight	325 kg				
Cooling fan dri	ve method	φ550 suction ty	ype, Belt drive, P	ulley ratio 0.92		
Turning dir	ection	Counterclockw	ise as viewed fr	om flywheel		

SK100~



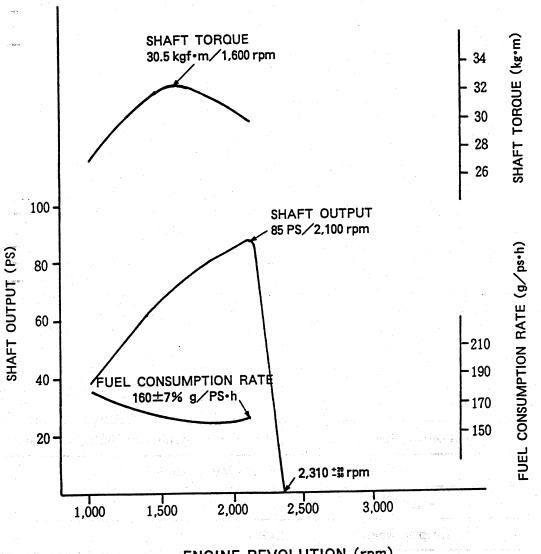
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Mode	I	ISUZU 4BD1T Diesel engine				
Туре		4cycle, Water-cooled, Direct injection, With turbo charger				
No. of cylinder-l	No. of cylinder-Bore×Stroke Total is dis placement		nm	<u></u>		
Total is dis p						
Compression	n ratio	17.5				
output ra	iting	85PS/2,100 rpm	<u> </u>			
Max. torque		30.5kgf•m/1,600) rpm			
High idling		2,310 ±3 rpm				
Low idling Firing order		935±25 rpm 1-3-4-2				
Compression	pressure	31kgf∕cm²at200 rpm				
		Valve clearance	Open	Close		
Valve clearance Valve action timing	Suction valve	In cold condition 0.4mm	19° before the top dead point	47° after the bottom dead point		
Verve bottom timing	Exhaust valve	In cold condition 0.4mm	57° before the bottom dead point	15° after the top dead point		
Motion of the	ermostat	Bigining of opening at 82°C, Full open at 95°C 24V-4.5KW (R/G付) 24V-30A 345 kg				
Starte	r					
Alternat	tor					
Empty we	eight					
Cooling fan dri	ve method	¢ 550 suction ty	ype, Belt drive, P	ulley ratio 1.09		
Turning dir	rection	Counterclockw	ise as viewed fr	om flywheel		
<u> </u>			<u></u>			

SK120V SK120LCV

Engine characteristic curve (ISUZU 4BDIT)



ENGINE REVOLUTION (rpm)



		-					
Mode	1	MITSUBISHI 6D31-T Diesel engine					
Туре	•	4 cycle, Water-cooled, Direct injection, With turbo charger					
No. of cylinder-	Bore×Stroke	6-110mm×105r	nm				
Total is dis p	lacement	4,948 cc					
Compressio	n ratio	16.5					
output ra	ating	140PS/2,200 rpr	'n				
Max. to	rque	47 kgf•m ⁄ 1,700	rpm				
High idling		2,350 ±3 rpm					
Low idling		850±25 rpm					
Injection start pressure		220kgf/cm²					
Firing order		1-5-3-6-2-4					
Lube oil pr	Lube oil pressure		1.5~5 kgf∕cmỉ				
Fuel injection	timing	13° before the top dead point					
Compression	pressure	26 kgf∕cm²at 200 rpm					
		Valve clearance	Open	Close			
Valve clearance Valve action timing	Suction valve	In cold condition 0.4mm	17° before the top dead point	47° after the bottom dead point			
	Exhaust valve	In cold condition 0.4mm	53° before the bottom dead point	11° after the			
Motion of the	ermostat	Bigining of ope	ening at 76.5°C, F				
Starte	r	5KW×24V (with R/G)					
Alternat	or	24V-30A800W					
Empty we	bight	470 kg					
Cooling fan dri	ve method	\$ 600 suction type, Belt drive, Pulley ratio 0.95					
Engine oil v	olume	Engine body 18 £ ((Full), 15.5 £ (Low)+4 l (Oil filter)			
Turning dir	ection	Counterclockw	ise as viewed fr	om flywheel			
		1					

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