KOBELCO

SHOP MANUAL

HYDRAULIC EXCAVATOR

SK115SRDZ-1E
SK135SR-1E
SK135SRLC-1E
SK135SRL-1E

Applicable: SK115SRDZ YY02-03001~ SK115SRDZ-1E YY03-04555~
Applicable: SK135SR YY02-03001~ SK135SR-1E YY03-04555~
Applicable: SK135SRLC YH02-01301~ SK135SRLC-1E YH03-02097~
Applicable: SK135SRL LK02-01041~ SK135SRL-1E LK03-01107~

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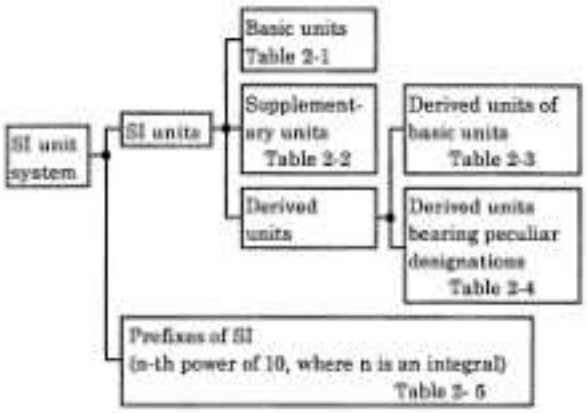
2. INTERNATIONAL UNIT CONVERSION SYSTEM

Introduction

Although this manual uses the JIS unit system. If you need SI unit, refer to following international system of units.

Given hereinunder are an excerpt of the units that are related to this manual :

1. Etymology of SI Units
   French : Le Système International d' Unités
   English: International System of Units
2. Construction of SI Unit System



(1) Basic Units

Table 2-1

QUANTITIES	DESIGNATION	SIGN
Length	Meter	m
Mass	Kilogram	kg
Time	Second	s
Current	Ampere	A
Thermodynamic temperature	Kelvin	K
Gram molecule	Mol	mol
Luminous intensity	Candela	cd

(2) Supplementary Units

Table 2-2

QUANTITIES	DESIGNATION	SIGN
Plane angle	Radian	rad
Solid angle	Steradian	sr

(3) Derived Units of Basic Units

Table 2-3

QUANTITIES	DESIGNATION	SIGN
Area	Square meter	m^2
Volume	Cubic meter	m^3
Velocity	Meter per second	m/s
Acceleration	Meter per second / second	m/s^2
Density	Kilogram per cubic meter	kg/m^3

(4) Derived Units bearing Peculiar Designations

Table 2-4

QUANTITIES	DESIGNATION	SIGN	DERIVED UNIT
Frequency	Hertz	Hz	$1Hz=1s^{-1}$
Force	Newton	N	$1N=1kgf\cdot m/s^2$
Pressure, Stress	Pascal	Pa	$1Pa=1N/m^2$
Energy Work, Quantity of heat	Joule	J	1J=1N-m
Power Motive power, Electric power	Watt	W	1W=1J/s
Charge, Quantity of electricity	Coulomb	C	1C=1A・s
Potential Voltage, Electromotive force	Volt	V	1V=1J/C (1W/A)
Quantity of static electricity Capacitance	Farad	F	1F=1C/V
Electric resistance	Ohm	Ω	1Ω=1V/A
Celcius temperature	Celcius degree or degree	℃	
Illuminance	lux	ℓX	1 ℓX=1 ℓm/m^2

(5) Prefixes of SI

Table 2-5

PREFIX		POWER
DESIGNATION	SIGN	
Giga-	G	10^9
Mega-	M	10^6
Kilo-	k	10^3
Hecto-	h	10^2
Deca-	da	10
Deci-	d	10^{-1}
Centi-	c	10^{-2}
Milli-	m	10^{-3}
Micro-	μ	10^{-6}
Nano-	n	10^{-9}
Pico-	p	10^{-12}

(6) Unit Conversion Table

Table 2-6

QUANTITIES	JIS	SI	REMARKS
Mass	kg	kg	
Force	kgf	10N	9.807N
Torque	kgf·m	10N-m	9.807N-m
Pressure	kgf/cm^2	0.1MPa	0.098MPa
Motive power	PS	0.7355kW	
Revolution	rpm	min^{-1}	r/min ※1

※1 Units that are allowed to use

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YY02

SPECIFICATION

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2. ELECTRIC EQUIPMENT

Note : ● The part numbers and serial numbers of machine may be changed due to modification, so use only the numbers for references.
● Part number in [ ] shows the number before modification of machines.
YY02-03001～, YH02-01301～, LK02-01041～
● Part number marked ※ shows the change and additional parts according to modification of machine.
YY03-04555～, YH03-02097～, LK03-01107～

2.1 LIST OF ELECTRIC EQUIPMENTS

Group	Code	PARTS	Part No.
CONTROLLER	C－1	Mechatro controller	[YY22E00021F1] YY22E00065F1※
	C－2		
	C－3	Gauge cluster (KCMA)	YY59S00003F1
	C－4	Air conditioner controller (A/C Acc.)	YT20M00004S036
DIODE	D－1	Diode	YN02D01001P1
	D－2	Diode	↑
	D－3	Diode	↑
	D－4	Diode	2475R132
	D－5	Diode	YN02D01001P1
	D－6,7,8,9,10	Diode	↑
ELECTRIC FITTINGS	E－1	Fuse box	YY73E00001F2(KCMA)
	E－2	Alternator	[181200-4710]
	E－2	Alternator	181200-5303※
	E－3	Hour meter	YT58S00006P1
	E－4	Horn (Low)	CM53S00002F2
	E－5	Horn (High)	CM53S00002F1
	E－6	Cigarette lighter	2421R180F1
	E－7	Tuner AM & FM (Option)	LB54S00001P1
	E－8	Speaker (Left)	YT54S00006P1
	E－9	Speaker (Right)	↑
	E－10	Receiver drier (A/C Accessory)	YT54S00002P1
	E－11	A/C compressor (A/C Accessory)	YX91V00001F1
	E－14	Resistor (P1, P2 pump proportional valve)	LC22E01001D1
	E－15	Travel alarm	YN53S00002F1
	E－16	DC－DC converter	YT77S00001P1
	E－17	Power socket 12V	YN81S00001P1
	E－25	Battery (95E41R)	2484U171
	E－A	Antenna	YT54S00001P1
LIGHT	L－1, 9	Boom work light (RH, LH)	YW80S00001F1
	L－2	Work light right	YN80S00010F1
	L－3	Room light (Cab)	YT80S00001P1
	L－4,5,6,7	Cab work light	Locally procured
	L－8	E/G room light	4056R4F1
	L－10	Cab work light (Rear)	Locally procured
	L－11,12	Swing flasher (RH, LH)	YY80S00001F1
	L－15	Rotary light	Locally procured
MOTOR	M－1	Starter motor (24V×4.5kW)	[897029－1991]
	M－1	Starter motor (24V×4.5kW)	897029－8637※
	M－2	Governor motor	YN20S00002F1
	M－3	Wiper motor assy	YT53C00011F1
	M－4	Washer motor (tank assy)	YT54C00003F1
	M－9	Fuel pump	YR22P00001P1
	M－11	Fuel supply pump	YT22P00001F6

Group	Code	PARTS	Part No.
RELAY	R－1	Battery relay	YN24S00003F1
	R－3	Glow relay	894258－0140
	R－4	Safety relay	897226－6550
	R－5	Wiper motor relay	EN24S00008P1
	R－6	Washer motor relay	↑
	R－7	Horn relay	↑
	R－8	Work light relay	↑
	R－9	Extra dis-press relay	↑
	R－10	Cab work light relay 1	↑
	R－18	Travel alarm relay	↑
	R－19	Flasher relay	YT24S00001P1
	R－20	Timer relay	YN25S00001P1
	R－22	Clockwise relay	EN24S00008P1
	R－23	Counterclockwise relay	↑
	R－24	Nibbler open relay	↑
	R－25	Nibbler close relay	↑
	R－26	Angle right relay	↑
	R－27	Float relay	↑
	R－28	Lever lock interlock relay	↑
	R－29	Angle left relay	↑
SENSOR	SE－1	Pressure sensor (low pressure) bucket digging	LC52S00011P1
	SE－2	Pressure sensor (low pressure) bucket dump	↑
	SE－3	Pressure sensor (low pressure) boom up	↑
	SE－4	Pressure sensor (low pressure) boom down	↑
	SE－5	Pressure sensor (low pressure) swing	↑
	SE－7	Pressure sensor (low pressure) arm in	LC52S00011P1
	SE－8	Pressure sensor (low pressure) arm out	↑
	SE－9	Pressure sensor (low pressure) travel right	↑
	SE－10	Pressure sensor (low pressure) travel left	↑
	SE－11	Pressure sensor (low pressure) ; P2 option LH	↑
	SE－12	Pressure sensor (low pressure) ; P2 option RH	↑
	SE－13	E/G speed sensor	181510－5130
	SE－14	E/G water temperature sensor	YT52S00001P1
	SE－15	Fuel sensor	YN52S00034F1
	SE－16	Accel potentiometer	YN52S00032P1
	SE－20	Pressure sensor (low pressure) ; P1 option	LC52S00011P1
	SE－22	Pressure sensor (high pressure) ; P1 pump	LC52S00012P1
	SE－23	Pressure sensor (high pressure) ; P2 pump	↑
	SE－24	Pressure sensor (high) ; Extra	↑
	SE－26	Pressure sensor (low) ; Revolution R/L Opt.	LC52S00011P1
	SE－29	Pressure sensor (low) ; Dozer down	↑
	SE－30	Pressure sensor (low) ; Dozer up	↑
SOLENOID	SV－1	Swing parking sol.	YY35V00006F1 (VALVE ASSY)
	SV－3	2-speed travel sol.	
	SV－4	Safety lock lever sol.	
	SV－6	Clockwise sol.	LC35V00004F2

Group	Code	PARTS	Part No.
SOLENOID	SV－7	Counter-clockwise sol.	LC35V00004F2
	SV－9	Nibbler open sol.	↑
	SV－10	Nibbler close sol.	↑
	SV－20	Dozer sol.	↑
	SV－21	Angle left sol.	↑
	SV－22	Angle right sol.	↑
	SV－23	Float sol.	↑
	SV－24	Extra dis-press sol.	LS52S00012P1
SOLENOID PROPORTIONAL VALVE	PSV－A	Arm variable recirculation proportional valve	YY35V00006F1 (VALVE ASSY)
	PSV－B	P2 bypass cut proportional valve	
	PSV－C	Travel straight proportional valve	
	PSV－D	P1 bypass cut proportional valve	
	PSV－P1	P1 pump proportional valve	YY10V00001F4 (PUMP ASSY)
	PSV－P2	P2 pump proportional valve	YE35V00003F1 (VALVE ASSY)
SWITCH	SW－1	Key switch	YN50S00026F1
	SW－3	2-speed travel switch	YN03M01286F1
	SW－4	Swing parking release switch	YT50E00001F1
	SW－5	KPSS release switch	YN50S01003P1
	SW－6	E/G water temperature switch [105℃(221°F)]	897125－6010
	SW－7	E/G oil pressure switch	182410－0082
	SW－8	Air filter clogging switch	LE11P01015S001
	SW－10	Horn switch (LH) (RH)	YN50E01001P1
	SW－10	Horn switch left (Handle Assy)	LF03M01005F3
	SW－11	Safety lock lever switch (Limit SW.)	YN50S01001P1
	SW－13	Air conditioner switch (Panel assy)	YT20M01104F1
	SW－16	Auto accel release switch (Decel)	2479U1190F7
	SW－17	Swing flasher select switch	2479U1190F19
	SW－20	Horn switch right (Handle Assy)	LF03M01005F1
	SW－21	Work light switch	2479U1190F1
	SW－22	Single/Conflux flow select switch	2479U1190F32
	SW－23	Wiper inter lock switch	YT50E00003P1
	SW－36	Rotary light switch	2479U1190F20
	SW－37	Hydraulic oil temp. switch	2479R2348
	SW－38	Warm-up switch	2479U1190F31
	SW－41	Travel alarm switch	2479U1190F16
	SW－42	Engine room light switch	YT50S00005P1
	SW－43	Jib press switch : option	GB50S00049F2
	SW－44	Extra press switch : option	↑
	SW－46	Clockwise switch	LF03M01005F3
	SW－47	Counter-lockwise swith	↑
	SW－48	Nibbler open switch	↑
	SW－49	Nibbler close switch	↑
	SW－50	Dozer switch	2479U1190F15
	SW－51	Angle switch	YM03M01012P1
	SW－52	Float switch	↑
	SW－53	Pressure switch ; Float cancel	YT50S00013P1

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