CRAWLER EXCAVATOR

SERVICE MANUAL

R210, R220LC-7H

HYUNDAI

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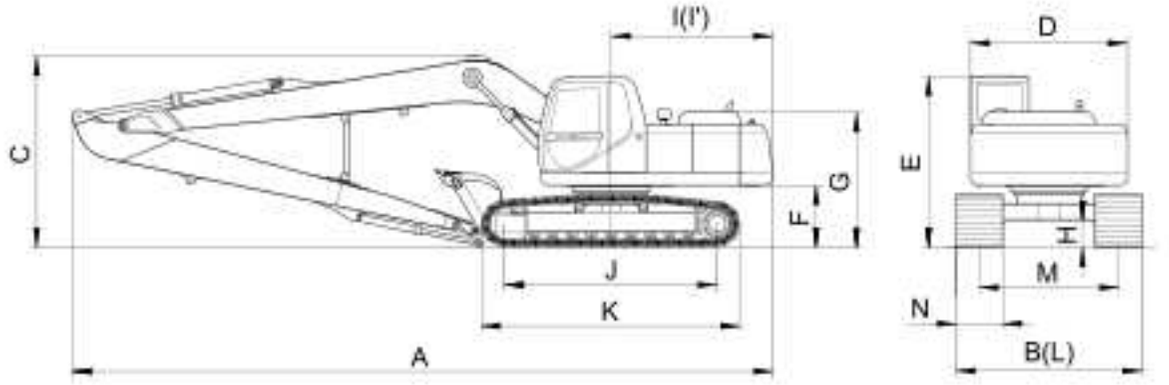
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2) ROBEX 210LC-7H / 220LC-7H LONG REACH



21072SP06

Description		Unit	Specification
Operating weight		kg(lb)	24160(53260)
Bucket capacity(SAE heaped), standard		m^3(yd^3)	0.51(0.67)
Overall length	A	mm(ft-in)	12030(39' 6")
Overall width, with 800mm shoe	B		3190(10' 6")
Overall height	C		3280(10' 9")
Superstructure width	D		2700(8'10")
Overall height of cab	E		2920(9' 7")
Ground clearance of counterweight	F		1060(3' 6")
Engine cover height	G		2320(7' 7")
Minimum ground clearance	H		480(1' 7")
Rear-end distance	I		2770(9' 1")
Rear-end swing radius	I'		2830(9' 3")
Distance between tumblers	J		3650(12' 0")
Undercarriage length	K		4440(14' 7")
Undercarriage width	L		3190(10' 6")
Track gauge	M		2390(7' 10")
Track shoe width, standard	N		800(31' 5")
Travel speed(Low/high)		km/hr(mph)	3.4/5.3(2.1/3.3)
Swing speed		rpm	12.5
Gradeability		Degree(%)	35(70)
Ground pressure(800mm shoe)		kgf/cm^2(psi)	0.42(5.97)

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2) CONTROL VALVE TROUBLE SHOOTING

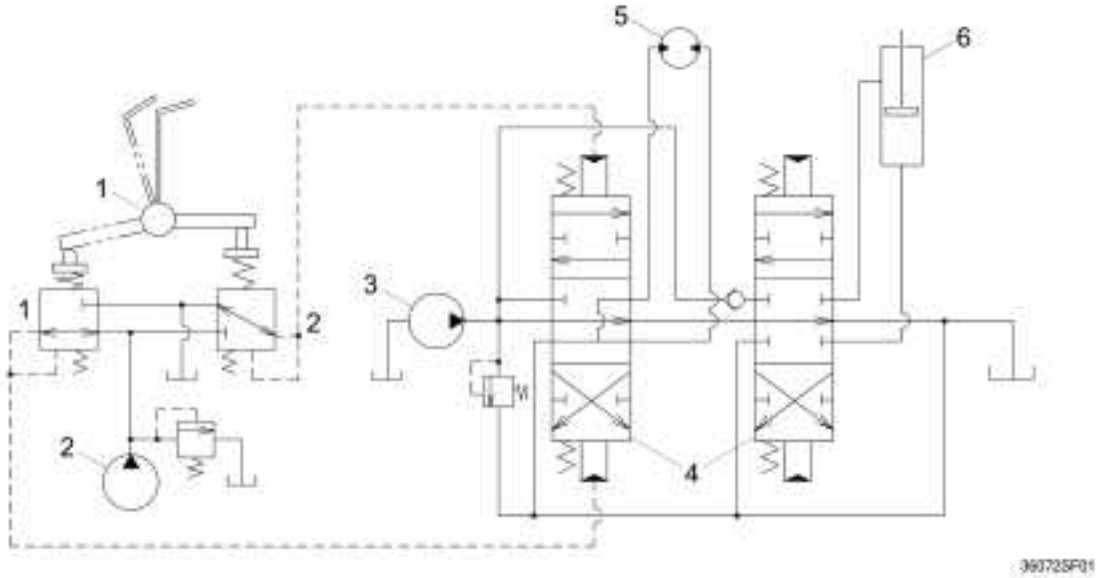
Phenomenon	Possible cause	Remedy
When pilot control lever is operated for cylinder hoisting, the cylinder initially falls.	· Load check valve malfunctions - Dirt is jammed between poppet and casing. - Poppet is stuck. - Spring is broken or fatigued.	 - Disassemble poppet and clean parts - Correct stuck section with oilstone. - Replace spring.
Bucket, boom and arm only do not work. Action is slow(Insufficient force) or response is slow.	· Main spool malfunctions. - Clearance between casing and spool is excessive. - Dirt is jammed between casing and spool. - Spool is stuck. - Return spring is broken or fatigued. - Pilot line is clogged with dirt. · Main relief valve malfunctions. · Port relief valve malfunctions.	· Disassemble poppet and clean parts - Replace spool. - Disassemble valve and clean parts. - Correct stuck section with oilstone. - Replace spring. - Remove dirt. · Measure pressure of main relief valve. · Measure pressure of main relief valve.
Main boom and arm confluence does not function.	· Each confluence valve malfunctions. - Spool is stuck. - Spring is broken or fatigued. - Clearances between casing A and casing B and spool are excessive.	· Measure pilot pressure. - Correct stuck section with oilstone. - Replace spring. - Replace spool.
Negative control does not function and minimum flow cannot be obtained when lever is in neutral.	· Low pressure relief valve malfunctions. - Dirt is jammed between poppet and casing. - Spring is broken or fatigued. - Restriction in poppet is clogged.	· Measure pressure of low pressure relief valve. - Disassemble valve and clean parts. Replace assembly, if damaged severely. - Replace spring. - Disassemble valve and clean parts. Remove dirt.

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3) OPERATION

The operation of the pilot valve will be described on the basis of the hydraulic circuit diagram shown below ant the attached operation explanation drawing.

The diagram shown below is the typical application example of the pilot valve.



1	Pilot valve	3	Main pump	5	Hydraulic motor
2	Pilot pump	4	Main control valve	6	Hydraulic cylinder

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■ **Disassemble cylinder sub.**

9) Disassemble cylinder block assembly, piston assembly(9) and seat plate(M).





10) Disassemble ball guide(16), ring and pin(15) from cylinder block, respectively.

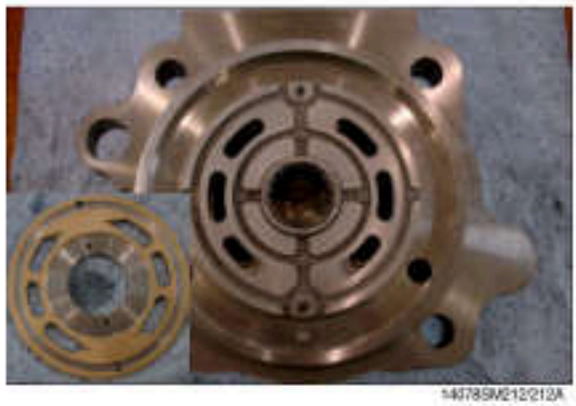




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(3) Disassemble rear cover assy sub

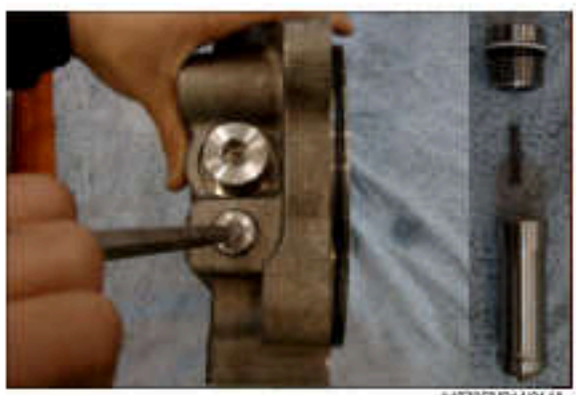
① Disassemble pin(8, 23), valve plate(24) from rear cover(21).



② Using a torque wrench, disassemble relief valve assy(33) 2 set from rear cover(21).



③ After disassembling plug with a L-wrench from rear cover(21), disassemble respectively back up ring, O-ring, O-ring, spring, anti-inversion valve assy(34)



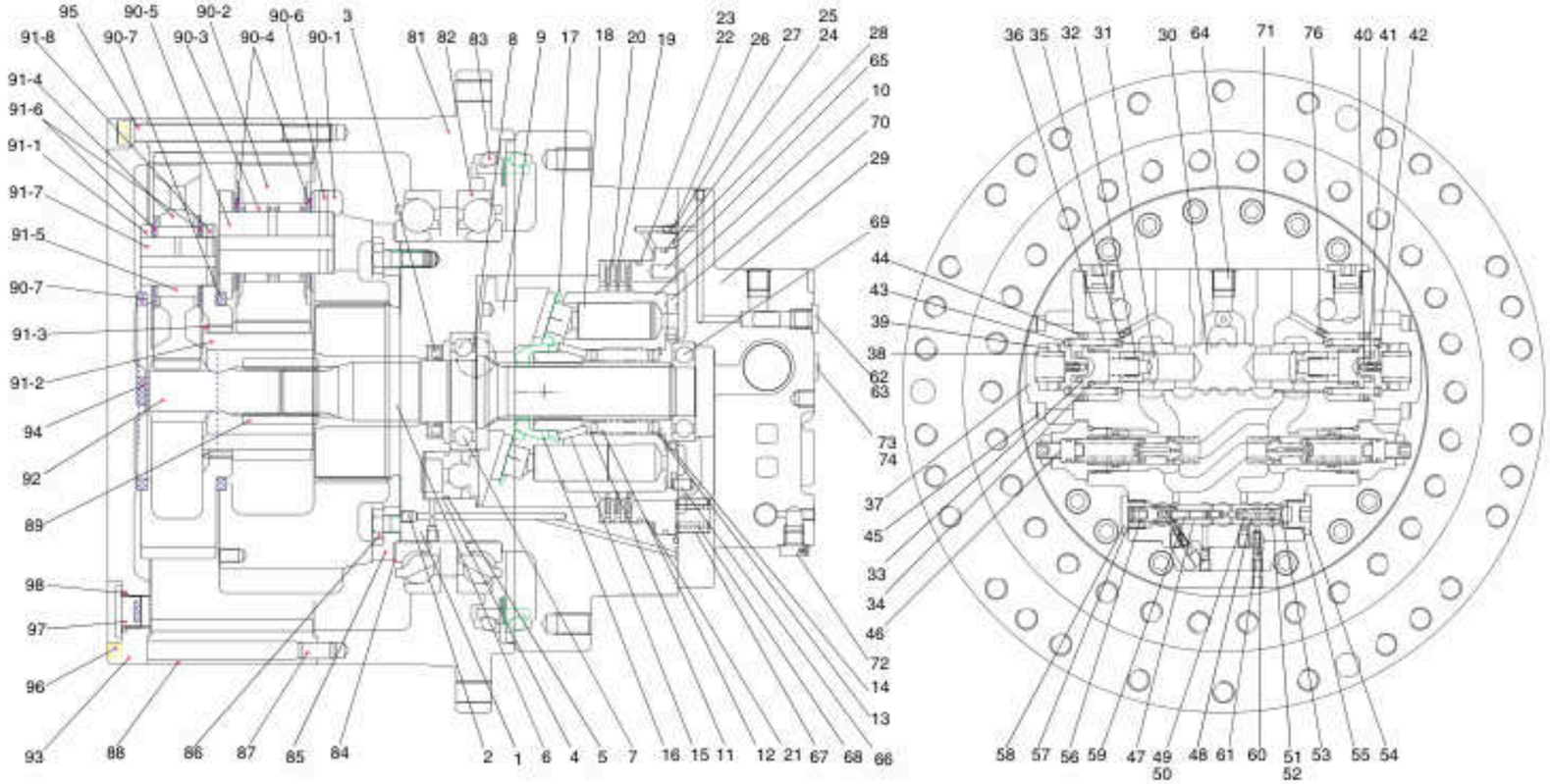
④ Disassemble make up check valve assy with a torque wrench from rear cover(21).



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2. TRAVEL MOTOR

1) STRUCTURE



1	Shaft casing	20	Plate	39	Spool	57	Spring seat	75	Seal kit	90-7	Thrust ring
2	Plug	21	Packing piston	40	Steel ball	58	Plug	76	Orifice	91	Carrier assy No.1
3	Oil seal	22	O-ring	41	Spring	59	Spool	81	Housing	91-1	Carrier No.1
4	Swash piston	23	Back up ring	42	Plug	60	Orifice	82	Main bearing	91-2	Sun-gear No.2
5	Piston ring	24	O-ring	43	Spring seat	61	Orifice	83	Floating seal	91-3	Retaining ring
6	Shaft	25	Back up ring	44	O-ring	62	Plug	84	Shim	91-4	Planetary gear No.1
7	Bearing	26	Orifice	45	Wrench bolt	63	O-ring	85	Retainer	91-5	Needle bearing No.1
8	Steel ball	27	O-ring	46	Relief valve assy	64	Plug	86	Hex head bolt	91-6	Thrust washer
9	Swash plate	28	O-ring	47	Spool	65	Pin	87	Parallel pin	91-7	Pin No.1
10	Cylinder block	29	Rear cover	48	Guide	66	Pin	88	Ring gear	91-8	Spring pin
11	Spring seat	30	Spool	49	O-ring	67	Spring	89	Coupling	92	Sun gear No.1
12	Spring	31	Check	50	Back up ring	68	Spring	90	Carrier assy No.2	93	Cover
13	End plate	32	Spring	51	O-ring	69	Bearing	90-1	Carrier No.2	94	Pad
14	Snap ring	33	Plug	52	Back up ring	70	Valve plate	90-2	Planetary gear No.2	95	Hex socket head bolt
15	Pin	34	O-ring	53	Snap ring	71	Wrench bolt	90-3	Needle bearing No.2	96	Hex socket Screw
16	Ball guide	35	Spring seat	54	plug	72	Plug	90-4	Thrsut washer	97	Hydraulic plug
17	Set plate	36	Spring	55	O-ring	73	Name plate	90-5	Pin No.2	98	O-ring
18	Piston assy	37	Cover	56	Spring	74	Rivet	90-6	Spring pin	99	Name plate
19	Friction plate	38	Spring								

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