24.1.2.2.2 HYDRAULIC CIRCUIT DIAGRAM

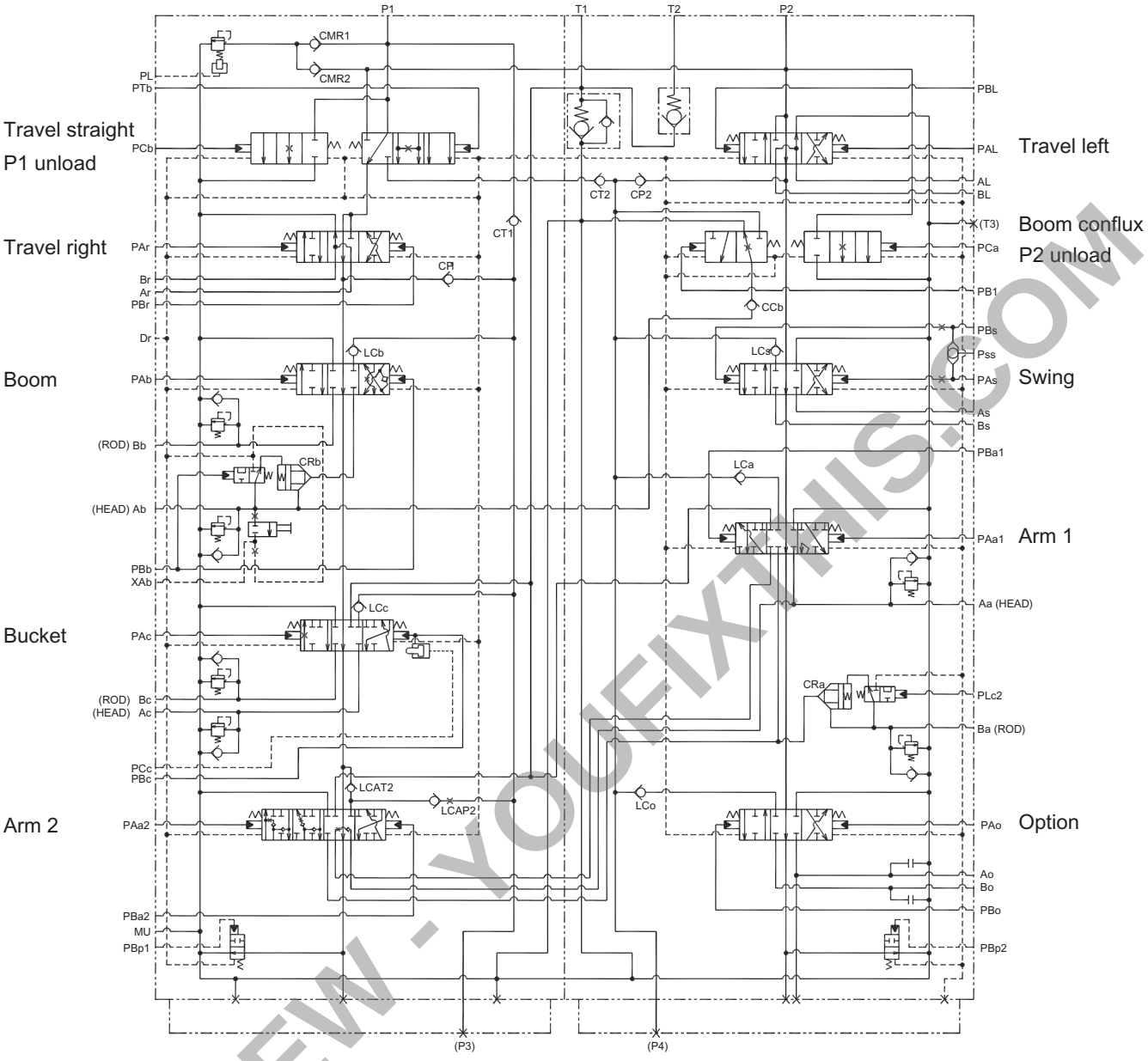


Fig. 24-30 Hydraulic circuit diagram

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25.7 ELECTRIC CIRCUIT

25.7.1 WIRING DIAGRAM AND CONNECTORS

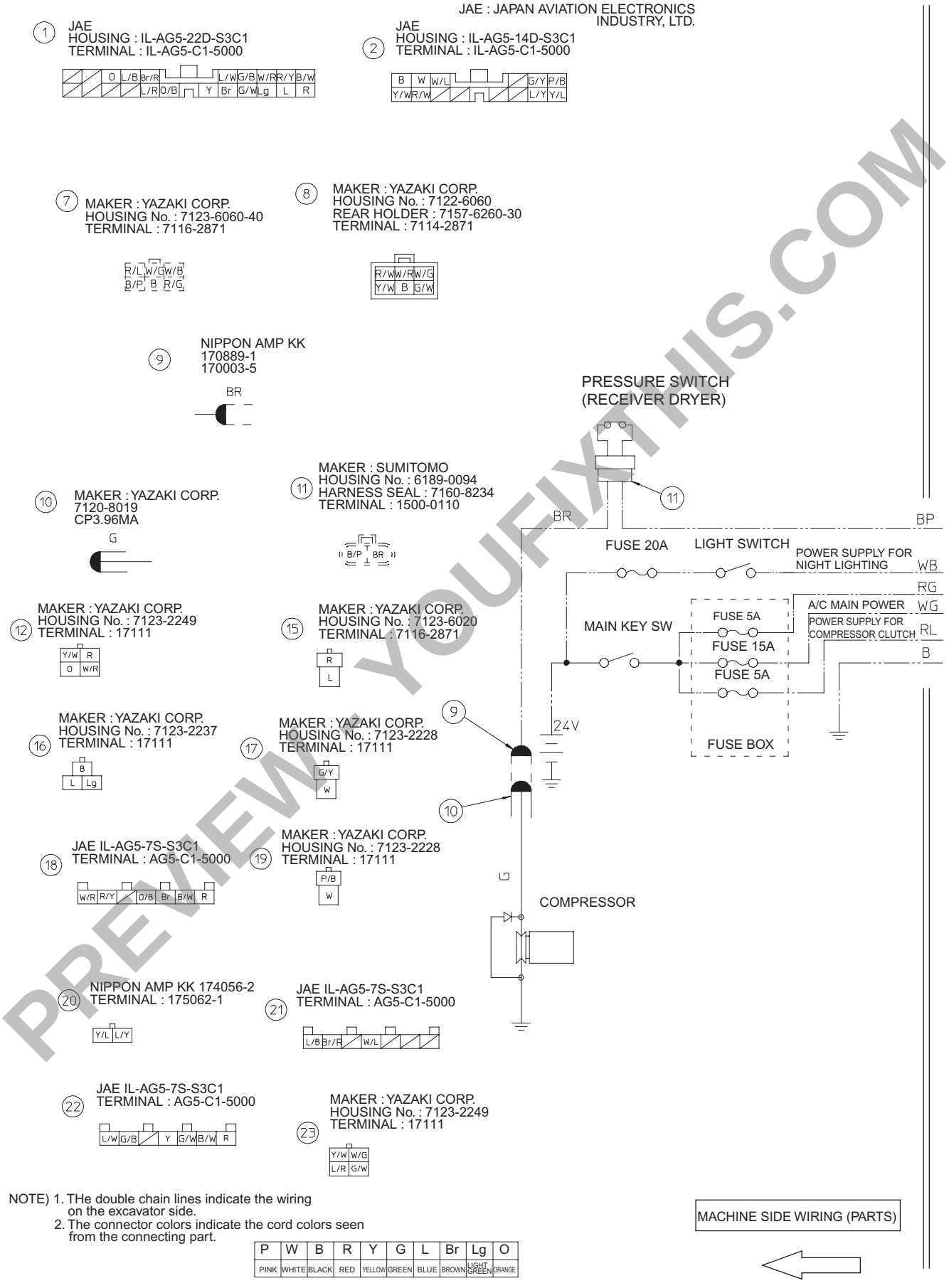


Fig. 25-33 Electric diagram (1/2)

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13.2 PERFORMANCE INSPECTION STANDARD TABLE

Note

Unless otherwise specified, measure it on "H" mode.

Table13-1

Inspection Item					Measuring Position			Standard value	Tolerance		Unit	Adjusting Point	Measuring condition
					Position	Size	Port		Hi	Lo			
Standard Measuring condition	Cleanliness of hydraulic oil				Hydraulic oil in tank			NAS 9 or less	—	—	Class	—	Sampling
	Hydraulic oil temperature				Tank surface			50 (122)	+ 5 (41)	- 5 (23)	°C (°F)	—	Atmospheric temp 50°C~-10°C (122°F~14°F)
	Water temperature				Radiator surface			75 (167)	+ 15 (59)	- 15 (5)		—	
	Engine speed	H mode Lo idle			Measure the engine speed at multi display on the gauge cluster, or measure with diesel speed meter.			1000	+ 30	- 30	min^{-1}	Adjustment not required	LOW throttle
		H mode Hi idle						2000	+ 30	- 30			Full throttle (HI idle)
		B mode Hi idle						2000	+ 30	- 30			Perform all measurement with the air-conditioner "OFF".
		A mode Hi idle						2000	+ 30	- 30			
		Decel						1050	+ 30	- 30			
		S mode Hi idle						1800	+ 30	- 30			
Pilot primary pressure circuit					G pump	PF1/4	a4	5.0 (725)	+ 0.5 (+73)	0	MPa (psi)	PR1	HI idle
High pressure circuit	Main relief valve pressure	ATT	P1		Main pump		a1	34.3 (4970)	+ 0.7 (+100)	- 0.5 (-73)		MR1	Boom up
			P2				a2						
		Boost	P1				a1	37.8 (5480)	+ 1.0 (+145)	- 0.5 (-73)		MR1	↑
			P2				a2						
	Over load relief valve pressure	Boom	R				a1	37.8 (5480)	0	- 4.0 (-580)		OR4	Boom down
			H					39.7 (5760)	0	- 5.9 (-855)		OR3	Boom up
		Arm	R				a2	39.7 (5760)	0	- 5.9 (-855)		OR8	Arm out
			H					37.8 (5480)	0	- 4.0 (-580)		OR7	Arm in
		Bucket	R				a1	37.8 (5480)	0	- 4.5 (-640)		OR2	Bucket dump
			H					39.7 (5760)	0	- 5.9 (-855)		OR1	Bucket digging
		Swing	RH				a2	28.5 (4050)	+ 6.0 (+870)	0		OR6	Swing RH
			LH					28.5 (4050)	+ 6.0 (+870)	0		OR5	Swing LH
		Travel	RH	FW			a1	34.3 (4970)	+ 1.7 (+240)	- 0.5 (-73)		—	Simultaneous operation of travel RH and LH
				RV								—	
			LH	FW			a2	34.3 (4970)	+ 1.7 (+240)	- 0.5 (-73)		—	
				RV								—	

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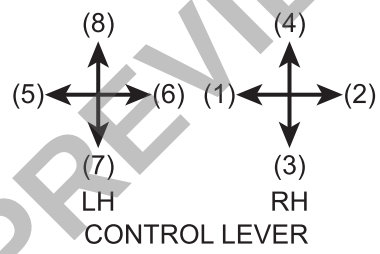
	Inspection item			Standard value	Unit	
Operating speed	Sprocket revolution (RH,LH)	1st speed		27.5 ~ 30.5	min^{-1}	(At no load)
		2nd speed		45.6 ~ 50.4		
	Operating time of cylinder	Boom	Up	3.1 ~ 3.7	sec	
			Down	2.5 ~ 3.1		
		Arm	In	3.0 ~ 3.6		
			Out	2.2 ~ 2.8		
		Bucket	Digging	2.4 ~ 3.0		
			Dumping	1.9 ~ 2.5		
	Swing speed	RH		4.1 ~ 5.3	sec / 1 rev	
		LH				
	Travel speed	1st speed	Iron shoe	19.5 ~ 21.5	sec / 20 m	
		2nd speed	Iron shoe	11.8 ~ 13.2		
Performance	Amount of travel deviation	2nd speed		0 ~ 240	mm / 20 m	
	Parking brake drift	15 degree gradient		0	mm / 5 min	
	Performance of Swing brake	Neutral position after 180° full speed swing		65 ~ 85	degree	
	Performance of Swing parking brake	15 degree gradient		0	mm	
	ATT amount of drift	Tip of the bucket tooth		190	mm / 10min	(At no load)
		Boom cylinder		14		
		Arm cylinder		11		
	Amount of horizontal play at the bucket tooth			30 ~ 50	mm	

Note

The port relief valves No.OR1~OR8 on the control section are adjusted to the following operation numbers in advance.

(1) Bucket digging, (2) Bucket dump, (3) Boom up, (4) Boom down

(5) Swing left, (6) Swing right, (7) Arm in, (8) Arm out



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2.3 WEIGHT OF COMPONENTS

Unit ; kg (lb)

Item \ Model	E225BSR	E225BSRLC
Fully equipped weight	22,300 (49,200)	22,700 (50,100)
1. Upper frame assy (Assembly of following :)	11,900 (26,240)	←
1.1 Upper frame	2,200 (4,850)	←
1.2 Counterweight	6,240 (13,760)	←
Counterweight (Semi-weighted)	—	—
Counterweight (weighted)	—	—
1.3 Cab	270 (595)	←
1.4 Engine	*560 (1,235)	←
1.5 Hydraulic oil tank	*150 (330)	←
1.6 Fuel tank	*140 (310)	←
1.7 Slewing motor (including reduction unit)	*210 (460)	←
1.8 Control valve	*250 (550)	←
1.9 Boom cylinder	*170 (375)×2	←
1.10 Pin (for mounting boom)	100 (220)	←
1.11 Pump	*140 (310)	←
1.12 Radiator (including intercooler)	*130 (287)	←
2. Lower frame assy (Assembly of following :)	6,730 (14,840)	7,150 (15,770)
2.1 Lower frame	2,260 (4,985)	2,440 (5,830)
2.2 Slewing bearing	260 (575)	←
2.3 Travel motor (including reduction unit)	260 (575)× 2	←
2.4 Upper roller	20 (44) × 4	←
2.5 Lower roller	30 (66) × 14	30 (66) × 16
2.6 Front idler	110 (240) × 2	←
2.7 Idler adjuster	100 (220) × 2	←
2.8 Sprocket	50 (110) × 2	←
2.9 Swivel joint	*30 (66)	←
2.10 Track link with 600mm (23.6in) shoes assy	1,250 (2,760) × 2	1,330 (2,930) × 2
Track link with 700mm (27.6in) shoes assy	1,450 (3,200) × 2	1,550 (3,420) × 2
Track link with 800mm (31.5in) shoes assy	1,580 (3,485) × 2	1,690 (3,725) × 2
Track link with 600mm (23.6in) flat shoes assy	1,500 (3,310) × 2	1,600 (3,530) × 2
2.10.1 Track link assy	510 (1,125) × 2	540 (1,190) × 2
3. Attachment (Assembly of following / STD :) {5.62m (18ft-5in) Boom + 2.87m (9ft-5in) Arm + 0.80m³ (1cu•yd) Bucket}	3,190 (7,030)	←
3.1 Bucket assy (STD)	640 (1,410)	←
3.2 STD Arm assy (Assembly of following :)	950 (2,090)	←
3.2.1 STD Arm	600 (1,320)	←
3.2.2 Bucket cylinder	*140 (310)	←
3.2.3 Idler link	20 (44)×2	←
3.2.4 Bucket link	70 (150)	←
3.2.5 Pin (2pcs. for mounting bucket cylinder / 2pcs. for mounting bucket)	70 (150)	←
3.3 Boom assy (Assembly of following :)	1,600 (3,530)	←
3.3.1 Boom	1,320 (2,910)	←
3.3.2 Arm cylinder	*220 (485)	←
3.3.3 Pin (Mounting arm • Mounting arm cylinder)	30 (66)	←

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2.5 SPECIFICATIONS AND PERFORMANCE

2.5.1 SPEED AND CLIMBING CAPABILITY

Item \ Model		E225BSR	E225BSRLC
Swing speed	min^{-1} {rpm}	13.3 {13.3}	
Travel speed (1-speed/2-speed)	km/h (mile/h)	3.6 / 6.0 (2.2 / 3.7)	
Gradeability	% (degree)	70 (35)	

2.5.2 ENGINE

Engine model	HINO J05E-TA
Type	Water-cooled, 4 cycle 4 cylinder direct injection type diesel engine with inter cooler turbo-charger
Number of cylinders—Bore×Stroke	4 -ø112 mm × 130 mm (4.41 in × 5.12 in)
Total displacement	5.123 L (312.61 cu•in)
Rated output / Engine speed	114 kW (155 PS) / 2,000 min^{-1}
Maximum torque / Engine speed	572 N•m (422 lbf•ft)/ 1,600 min^{-1}
Starter	24 V / 5.0kW
Alternator	24 V / 1.2kW

2.5.3 HYDRAULIC COMPONENTS

Hydraulic pump	Variable displacement axial piston pump × 2 + gear pump × 1
Hydraulic motor (swing)	Axial piston motor × 1
Hydraulic motor (travel)	Variable displacement axial piston motor × 2 (with counterbalance valve)
Control valve	8-spool control valve × 1
Cylinder (Boom, Arm, Bucket)	Double action cylinder
Oil cooler	Air-cooled type

2.5.4 WEIGHT

Unit : kg (lbs)

Fully equipped weight	22,300 (49,200)	22,700 (50,100)
Upper structure	11,900 (26,240)	←
Lower machinery (600mm grouser shoe)	6,730 (14,840)	7,150 (15,770)
Attachment 5.65m (18 ft-6in) Boom+2.94m (9ft-8in) Arm +0.80m^3 (1.05cu•yd) Bucket	3,190 (7,030)	←

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