KOBELCO

SERVICE MANUAL

HYDRAULIC EXCAVATOR

SK16

SK17

S5PF0004E

APPLICABLE:
SK16 : PF03-03001~
SK17 : PF03-03001~

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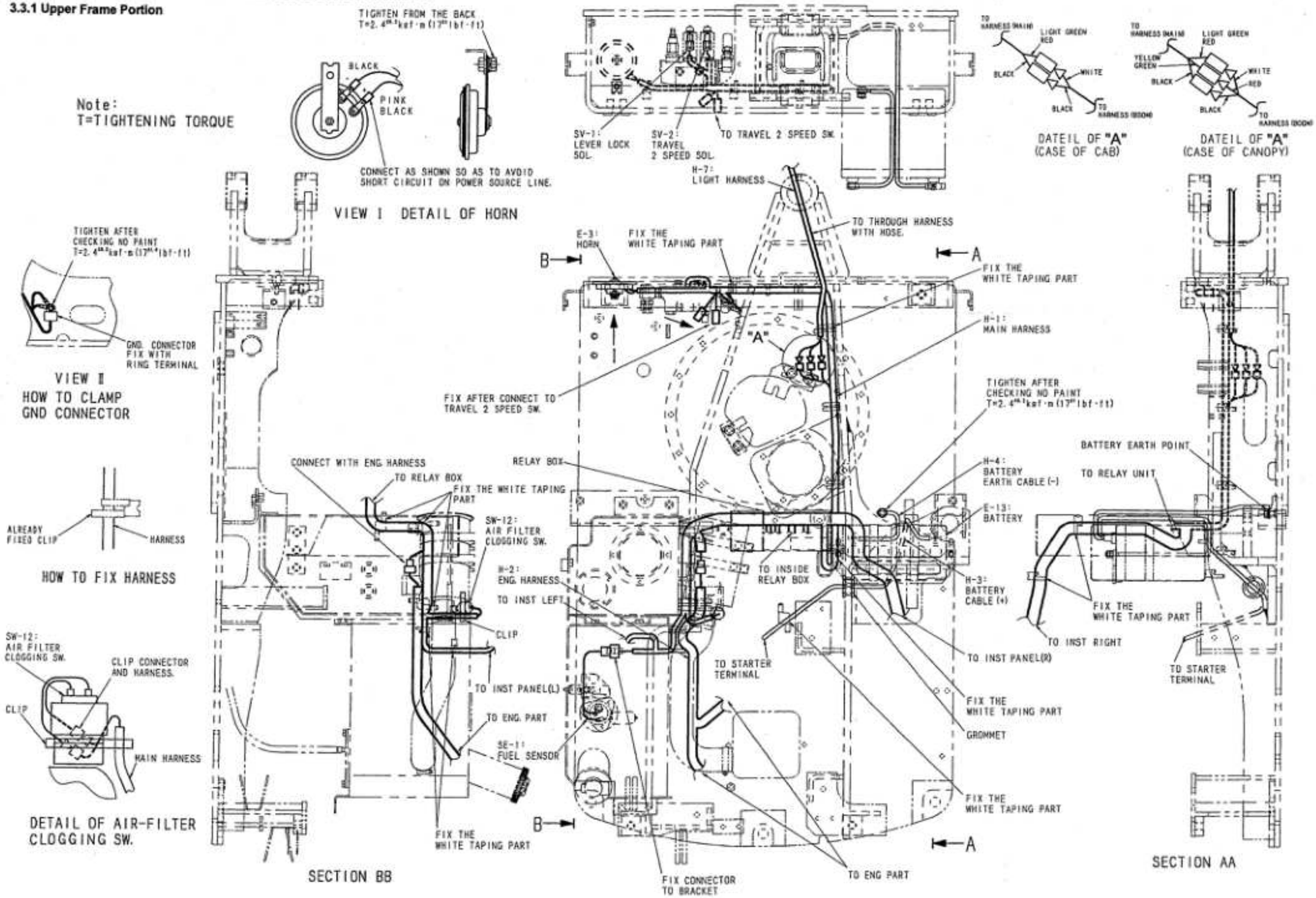
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3.3 COMPONENTS & HARNESS ARRANGEMENT

3.3.1 Upper Frame Portion



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5.4 TROUBLESHOOTING

Troubles	Possible Causes	Remedy
External Oil Leakage	●O-ring is defective.	●Replace all the seal parts.
Internal Oil Leakage	●Thrust ring is defective. ●Excessive wear on sliding surfaces.	●Replace all the seal parts. ●Replace the assembly.
Shaft Sticks	●Shaft and body are stuck together.	●Carry out grinding and honing. If excessive looseness cause oil leakage, replace the assembly.
Flange Looseness	●Capscrew tightening is insufficient.	●Retighten with the specified torque.

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1-5 3TNE82A

* **Output conditions:** Intake back pressure ≤ 250 mmAq, Exhaust back pressure ≤ 550 mmAq, other conditions complying with JIS D 1005–1986. After minimum 30 hour's run-in.

Item			Model / Unit	3TNE82A							
SPECIFICATIONS	Application		—	CL		VM					
	Type		—	Vertical, 4-cycle water-cooled diesel engine							
	Combustion system		—	Direct injection system							
	No. of cylinders – Bore × Stroke		mm	3 – 82 × 84							
	Displacement		ℓ	1.330							
	Firing order		—	1 – 3 – 2 – 1							
	Revolution speed		rpm	1500	1800	2000	2200	2400	2600	2800	3000
	Output*	Continuous rating	kW(HP)	9.9 (13.3)	12.0 (16.1)	—	—	—	—	—	—
		Max. rating	kW(HP)	11.0 (14.8)	13.2 (17.7)	14.6 (19.6)	16.0 (21.5)	17.5 (23.5)	19.0 (25.5)	20.5 (27.5)	21.9 (29.4)
	Max. revolution speed at no load		rpm	1575^{+50}_{0}	1870^{+50}_{0}	2180^{+50}_{0}	2375^{+50}_{0}	2570^{+50}_{0}	2780^{+50}_{0}	2970^{+50}_{0}	3180^{+50}_{0}
	Min. revolution speed at no load			≤1200		≤800					
	Direction of rotation		—	Counterclockwise (viewed from flywheel)							
	Power take off		—	Flywheel							
	Compression ratio		—	18.0							
	Fuel injection timing (FID, b.T.D.C.)		deg	10±1		12±1		14±1		16±1	
	Compression pressure		MPa (kgf/cm²)	3.04±0.1 (31±1), at 250 rpm							
	Fuel injection pressure		MPa (kgf/cm²)	$19.6^{+1.0}_{0}$ (200^{+10}_{0})							
	Recommended diesel gas oil		—	ISO 8217 DMA, BS 2869 A1 or A2 (Cetane No. 45 min.)							
	Lubrication system		—	Forced lubrication with trochoid pump							
	Lubricating oil capacity Max/Effective		ℓ	3.6/1.3		5.0/1.7					
	Recommended lubricating oil		—	API grade CC class or higher							
	Cooling system		—	Liquid cooling/Radiator							
	Cooling water capacity		ℓ	1.8 (for engine only)							
	Cooling fan No. of blade × dia.		mm	Pusher type, 6 × ϕ335							
	Crank V-pulley dia./ Fan V-pulley dia.		mm	ϕ120/ϕ90		ϕ110/ϕ110					
	Governor		—	Mechanical centrifugal governor (All speed type)							
	Starting system		—	Electrical							
	*1 Dimensions L × W × H		mm	553 × 489 × 565		520.5 × 489 × 565 / 528 × 489 × 565					
	*1 Dry weight		kg	138		112/128					
PERFORMANCE	Governing perform-ance (full speed range)	Transient speed difference	%	≤10	≤8	≤12					
		Steady state speed band	%	≤5	≤4	≤9	≤8	≤7		≤6	
		Recovery time	sec	≤5		≤8					
		Fluctuation of revolution	rpm	≤15		≤25					
	L.O. press.	Rated operation	MPa (kgf/cm²)	0.25 ± 0.05 (2.5 ± 0.5)		0.29±0.05 (3.0±0.5)					
		Idling		≥0.06 (≥0.6)							

*1. Designation of engine dimension and dry weight in numerals.
CL/CH application: engine with flywheel housing
VM/VH application: engine with back plate/with flywheel hausing

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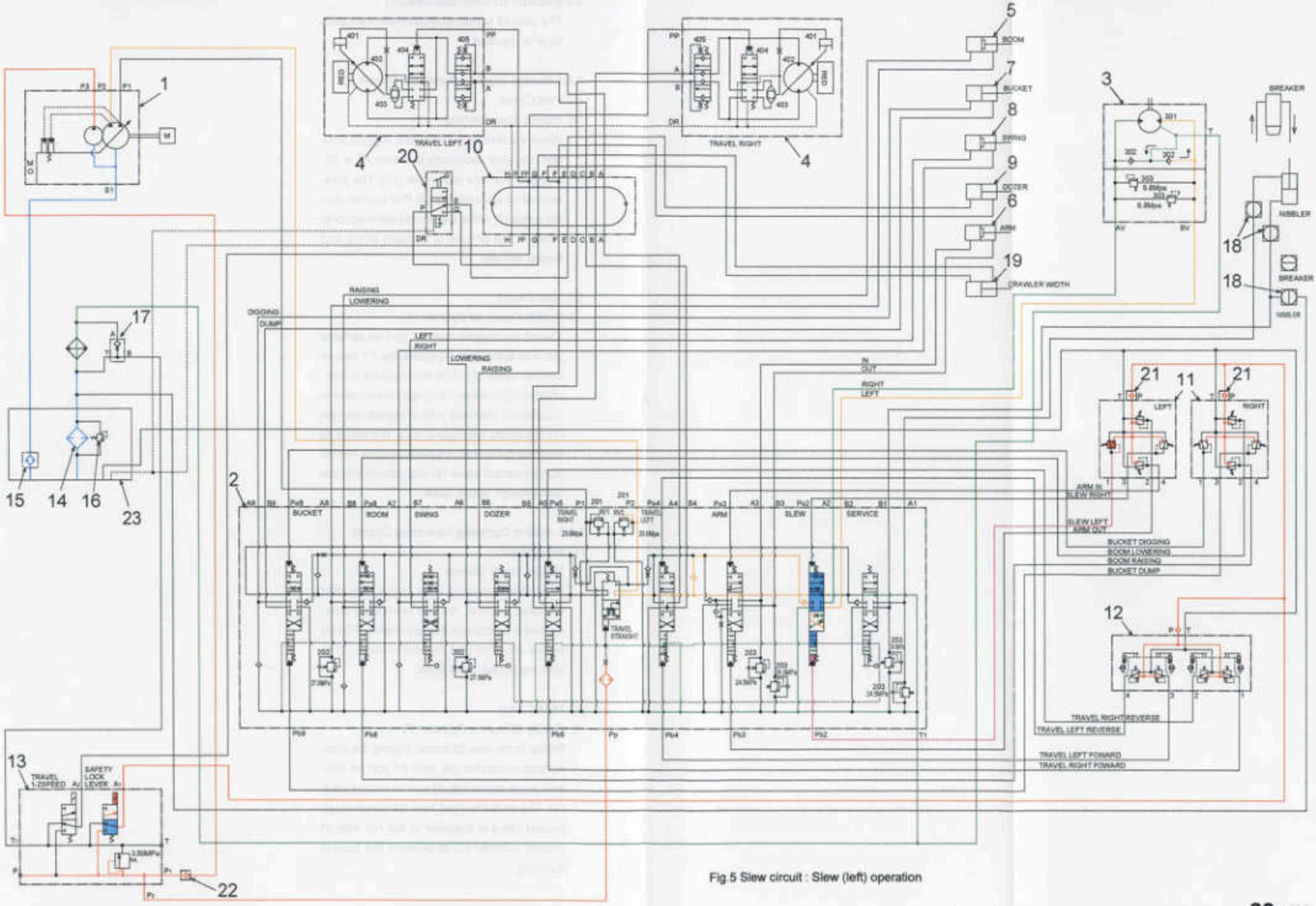


Fig.5 Slew circuit : Slew (left) operation

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