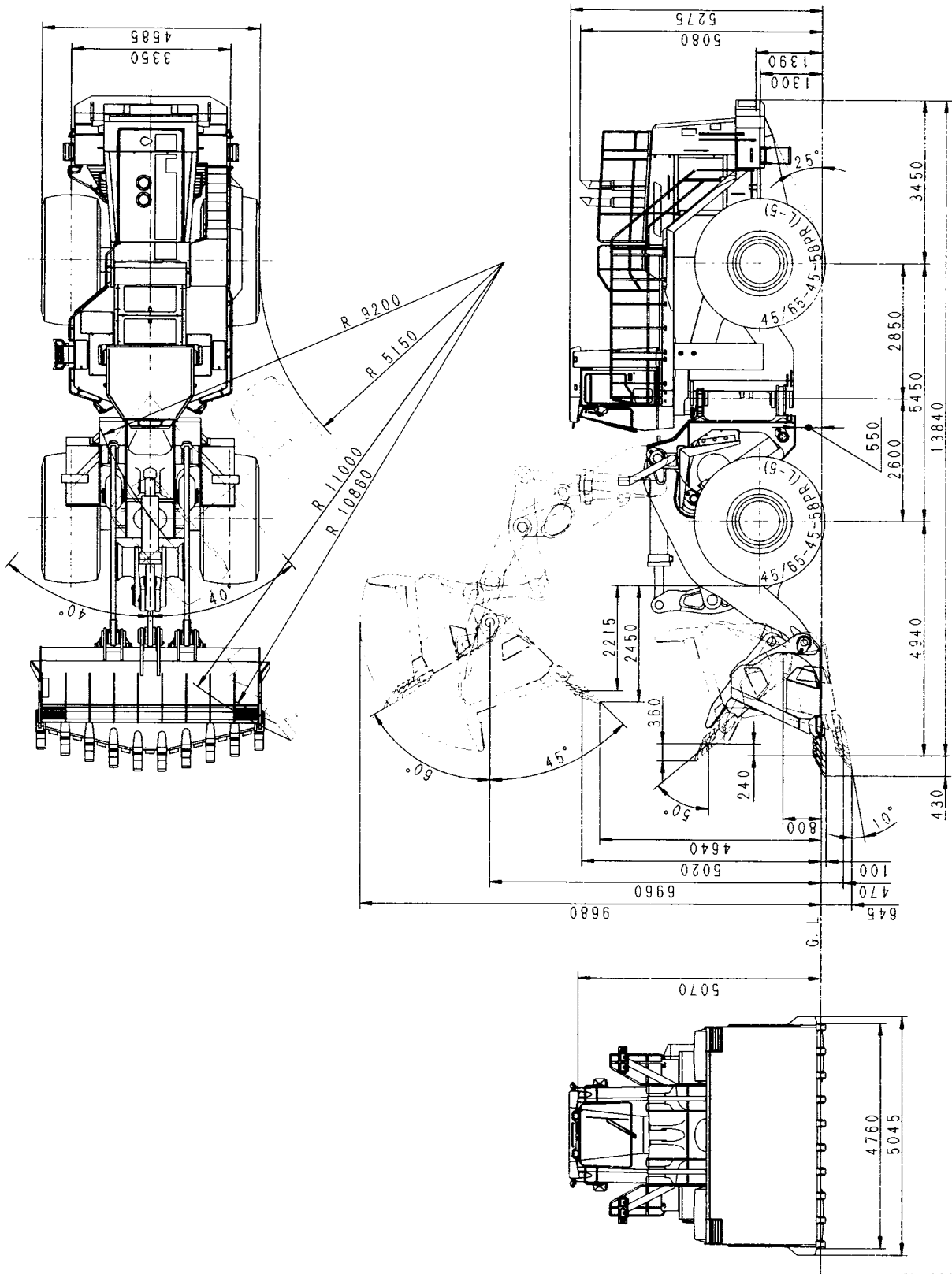

01 GENERAL

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GENERAL ASSEMBLY DRAWING



SWW03876

SPECIFICATIONS

Machine model			WA900-3		
Serial No.			50001 – 50026	50027 and up	
Weight	Operating weight		kg	101,550	
	Distribution (front)		kg	55,750	
	Distribution (rear)		kg	45,800	
Performance	Bucket capacity (piled)		m ³	13.0	
	Rated load		kg	23,400	
	Travel speed	FORWARD 1st		km/h	7.0
		FORWARD 2nd		km/h	12.3
		FORWARD 3rd		km/h	28.0
		REVERSE 1st		km/h	7.1
		REVERSE 2nd		km/h	12.4
		REVERSE 3rd		km/h	28.3
	Max. rimpull		kN {kg}	588.4 {60,000}	
	Gradeability		deg	25	
Min. turning radius	Center of outside wheel		mm	9,200	
	Outside portion of chassis		mm	11,000	
Dimensions	Overall length		mm	14,270 (with tooth)	
	Overall width (chassis)		mm	4,585	
	Bucket width		mm	4,760 (Cutting edge) 5,045 (Tire guard)	
	Overall height	(top of ROPS cab)		mm	5,275
		(Bucket raised)		mm	9,680
	Wheelbase		mm	5,450	
	Tread		mm	3,350	
	Min. ground clearance		mm	550	
	Height of bucket hinge pin		mm	6,960	
	Dumping clearance (tip of edge)		mm	5,020	
	Dumping reach (tip of edge)		mm	2,215	
	Bucket dump angle		deg	47 (Max. height)	
Bucket tilt angle (SAE carrying position)		deg	50		
Digging depth (10° dump) (tip of edge)		mm	470		

Machine model		WA900-3		
Serial No.		50001 – 50026	50027 and up	
Engine	Model		SA12V140	
	Type		4-cycle, water-cooled, V type, 12-cylinder direct injection, with 2-turbocharger, after-cooler	
	No. of cylinders – bore × stroke	mm	12 – 140 × 165	
	Piston displacement	ℓ {cc}	30.48 {30,480}	
	Performance	Flywheel horsepower	kW/rpm {HP/rpm}	637/2,000 {853/2,000}
		Maximum torque	Nm/rpm {kgm/rpm}	4,090/1,300 {417/1,300}
		Fuel consumption ratio	g/kW-h {g/HP-h}	200 {145}
		High idling speed	rpm	2,260
		Low idling speed	rpm	650/850
	Starting motor		24 V 7.5 kW × 2	
Alternator		24 V 75 A		
Battery		12 V 200 Ah × 4		
Power train	Torque converter		3-element, 1-stage, single-phase (TCA51-1A)	
	Transmission		Planetary gear, multiple-disc, hydraulically actuated, modulation type	
	Reduction gear		Spiral bevel gear	
	Differential		Straight bevel gear	
	Final drive		Planetary gear, single reduction, oil bath	
Axle, wheel	Drive type		Front/rear-wheel drive	
	Front axle		Fixed-frame, full-floating	
	Rear axle		Center pin support type, full-floating	
	Tire		45/65-45-58PR(L-5)	
	Wheel rim		36.00 × 45WTB	
	Inflation pressure	kPa {kg/cm ² }	667 {6.80}	
Brakes	Main brake		Front/rear wheel braking, separate front/rear wheel, wet disc, hydraulically actuated	
	Parking brake		Mounted on front axle input shaft, dry disc, hydraulically release spring apply	

Machine model				WA900-3	
Serial No.				50001 – 50026	50027 and up
Steering system	Type			Articulated type	
	Structure			Fully hydraulically power steering	
Hydraulic system	Hydraulic pump Delivery	Torque converter, transmission pump	ℓ/min	421 (Gear type: SAR(4)112+SAR(3)100)	421 (Gear type: SAR(4)112+SAR(3)100)
		Steering pump	ℓ/min	307 (Fixed capacity piston pump: HPF76+71)	307 (Fixed capacity piston pump: HPF76+71)
		Switch pump	ℓ/min	405 (Variable capacity piston pump: HPV90+90)	405 (Variable capacity piston pump: HPV95+95)
		PPC pump	ℓ/min	68 (Gear type: SAR(1)032)	68 (Gear type: SAR(1)032)
		Brake pump	ℓ/min	29 (Gear type: SAR(1)014)	29 (Gear type: SAR(1)014)
		Work equipment pump	ℓ/min	405 (Variable capacity piston pump: HPV90+90)	405 (Variable capacity piston pump: HPV95+95)
	Control valve Set pressure	Transmission valve	MPa {kg/cm ² }	2.5 {25} (Spool type, electric control)	
		Steering demand valve	MPa {kg/cm ² }	31.4 {320} (Fully hydraulic type)	
		PPC valve	MPa {kg/cm ² }	3.7 {38} (2-lever type)	
		Main control valve	MPa {kg/cm ² }	34.3 {350} (2-spool type)	
Cylinder	Steering cylinder No. – bore × stroke	mm	Reciprocating piston 2 – 160 × 503		
	Boom cylinder No. – bore × stroke	mm	Reciprocating piston 2 – 260 × 1,368		
	Bucket cylinder No. – bore × stroke	mm	Reciprocating piston 1 – 300 × 906		
Work equipment	Link type		Single Z bar link		
	Bucket edge type		Spade nose bucket with teeth		

WEIGHT TABLE

⚠ This weight table is a guide for use when transporting or handling components.

Unit: kg

Machine model	WA900-3		
	Serial No.	50001 – 50026	50027 and up
Engine		3,200	3,200
Radiator		1,200	1,200
Torque converter		590	590
Transmission		2,300	2,300
Damper		178	178
Upper drive shaft		58	58
Center drive shaft		184	184
Front drive shaft		171	171
Rear drive shaft		184	184
Center support		165	165
Front axle		8,190	8,190
Rear axle		7,700	7,700
Front differential assembly		1,226	1,226
Rear differential assembly		1,256	1,256
Planetary carrier assembly (each)		238	238
Planetary hub assembly (each)		600	600
Axle pivot (Rear axle)		286	286
Wheel (each)		874	874
Tire (each)		2,720	2,720
Steering demand valve		66	66
Steering cylinder (each)		206	206
Hydraulic tank		824	824
Work equipment pump		150	150
Parking brake assembly		185	185
Torque converter charging + PPC + brake pump		49	49
Switch pump		150	157
Steering pump		145	145
Fender and guard assembly		1,393	1,393
PPC valve		4	4

Unit: kg

Machine model	WA900-3	
	50001 – 50026	50027 and up
Serial No.		
Main control valve (each)	95	95
Boom cylinder (each)	998	998
Bucket cylinder	1,210	1,210
Engine hood	88 (Top) 28 (Side)	88 (Top) 28 (Side)
Front frame	7,845	7,845
Rear frame	9,319	9,319
Bucket link (including bushing)	566	566
Bellcrank (including bushing)	1,850	1,850
Boom (including bushing)	8,690	8,690
Bucket (with teeth)	12,320	12,320
Counterweight + weight	2,900 + 2,600	2,900 + 2,600
Fuel tank	780	780
Battery (each)	59	59
Cab	430	430
Air conditioner unit	55	55
Operator's seat	48	48
Floor plate	348	348
ROPS support assembly	1,387	1,387

LIST OF LUBRICANT AND WATER

RESERVOIR	KIND OF FLUID	AMBIENT TEMPERATURE										CAPACITY	
		-22 -30	-4 -20	14 -10	32 0	50 10	68 20	86 30	104 40	122°F 50°C	Specified	Refill	
Engine oil pan	Engine oil	SAE 30										140 ℓ	132 ℓ
		SAE 10W											
		SAE 10W-30											
		SAE 15W-40											
Transmission case	Engine oil	SAE 30										164 ℓ	140 ℓ
		SAE 10W											
Hydraulic system		SAE 10W										1,065 ℓ	725 ℓ
Brake		SAE 10W										42 ℓ	31 ℓ
Axle (Front and rear) (each)		See Note 1										360 ℓ	360 ℓ
Pins	Grease	NLGI No.2 [※1, 2]										-	-
Fuel tank	Diesel fuel	ASTM D975 No.2										1,425 ℓ	-
		※											
Cooling system	Water	Add antifreeze										301 ℓ	-

※ ASTM D975 No.1

Note 1:

For axle oil, use only recommended oil as follows.

- SHELL: DONAX TD
- MOBILE: MOBILFLUID 424
- ESSO: TORQUE FLUID 56

It is possible to substitute engine oil CLASS-CD SAE30 for axle oil.

If noise comes from the brake, it is no problem of durability.

★ In cold areas when the hydraulic oil temperature is low, if the steering wheel is turned and the machine is stopped in that position, there may be a time lag before the machine turns and stops.

If this happens, turn the steering wheel slowly to the left and right (repeat for about 10 minutes) and the oil inside the steering valve will be warmed up.

[※1]: When working in particularly severe conditions, use a multi-purpose grease containing 3 – 5% molybdenum.

[※2]: For machines equipped with an auto-grease system, if the machine is operated in temperatures below -20°C, use lithium-based grease No. 0 for the grease.

REMARK

- When fuel sulphur content is less than 0.5%, change oil in the oil pan every periodic maintenance hours described in this manual. Change oil according to the following table if fuel sulphur content is above 0.5%.

Fuel sulphur content	Change interval of oil in engine oil pan
0.5 to 1.0%	1/2 of regular interval
Above 1.0%	1/4 of regular interval

- When starting the engine in an atmospheric temperature of lower than 0°C, be sure to use engine oil of SAE10W, SAE10W-30 and SAE15W-40, even though an atmospheric temperature goes up to 10°C more or less in the day time.
- Use API classification CD as engine oil and if API classification CC, reduce the engine oil change interval to half.
- There is no problem if single grade oil is mixed with multigrade oil (SAE10W-30, 15W-40), but be sure to add single grade oil that matches the temperature in the table.
- We recommend Komatsu genuine oil which has been specifically formulated and approved for use in engine and hydraulic work equipment applications.

Specified capacity: Total amount of oil including oil for components and oil in piping.

Refill capacity: Amount of oil needed to refill system during normal inspection and maintenance.

ASTM: American Society of Testing and Material

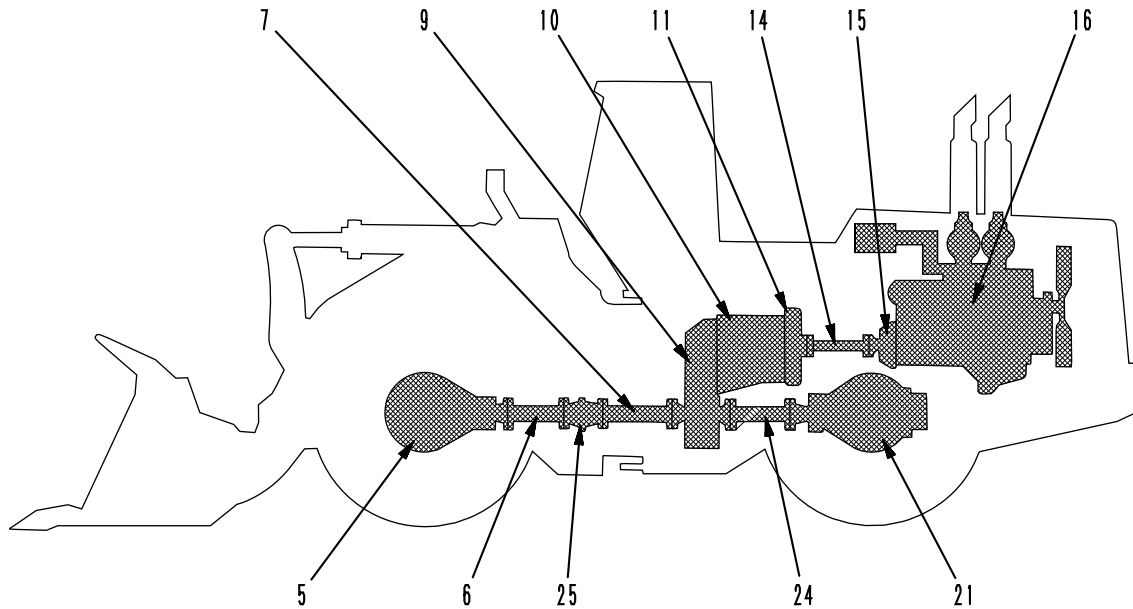
SAE: Society of Automotive Engineers

API: American Petroleum Institute

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POWER TRAIN

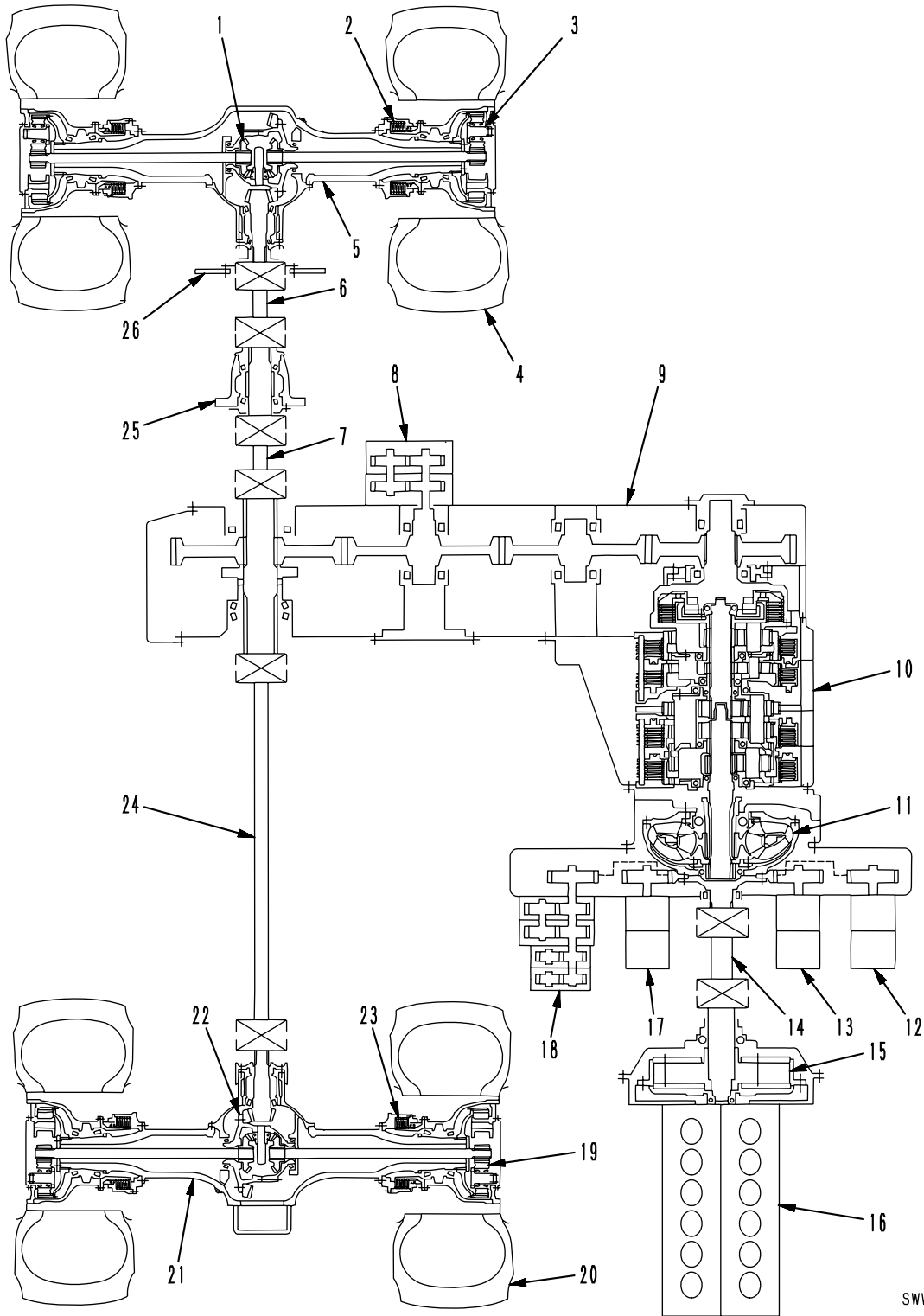


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OUTLINE

- The power from engine (16) is transmitted from the flywheel to damper (15) through the ring gear. The damper alleviates the torsional vibration caused by the variation of the engine torque and transmits the power to torque converter (11) through upper drive shaft (14). The torque converter converts the delivered torque according to the variation in load on the oil used as the medium, and transmits the power to the input shaft of transmission (10). Then, the engine power is transmitted to steering pump (12), main pump (13), switch pump (17), and torque converter charging pump + PPC pump + brake pump (18) through the pump driving gear in torque converter (11), thereby driving the pumps.
- In transmission (10), the five hydraulically-operated clutches are operated by the forward-reverse spool and the speed change spools in the transmission valves, which are themselves activated by solenoid valves. Thus, the desired travel speed can be selected from among the 3 forward and 3 reverse gear speeds.
- The output shaft of transmission (10) transmits the power to the output shaft of transfer (9) through the gear. The power from the output shaft of the transfer is transmitted to both the front axle (5) and the rear axle (21).
In the front section of the chassis, the power is transmitted to front axle (5) through center drive shaft (7) and front drive shaft (6).
In the rear section, the power is transmitted to rear axle (21) through rear drive shaft (24).
- The power transmitted to front axle (5) and rear axle (21) is reduced through pinion and ring gears in differential (22) and (1), and is transmitted to the axle shafts.
- The power from the axle shafts is reduced through final drive (19) and (3) and transmitted to wheel (20) and (4) through the planetary carrier.

POWER TRAIN SYSTEM



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- | | | |
|----------------------------|---|-----------------------|
| 1. Front differential | 11. Torque converter | 20. Rear wheel |
| 2. Front brake | 12. Steering pump | 21. Rear axle |
| 3. Front final drive | 13. Main pump | 22. Rear differential |
| 4. Front wheel | 14. Upper drive shaft | 23. Rear brake |
| 5. Front axle | 15. Damper | 24. Rear drive shaft |
| 6. Front drive shaft | 16. Engine | 25. Center support |
| 7. Center drive shaft | 17. Switch pump | 26. Parking brake |
| 8. Emergency steering pump | 18. Torque converter charging pump (x 2)
+ PPC pump + brake pump | |
| 9. Transfer | | |
| 10. Transmission | 19. Rear final drive | |