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FOREWORD

This MANUAL is published for the information and guidance of shop personnel charged with the task of servicing the KOMATSU D55S-3 Dozer Shovel, and provides instructions to be adhered to in disassembling and re-assembling machines of this model in the shop. The instructions are given mainly in the form of procedures, and, in each section of the MANUAL, are preceeded by an outline description of each major component in respect to mechanical construction, function and other pertinent items.

TERMINOLOGY

Effort has been made in the preparation of this MANUAL to use the most common shop terms in order to avoid ambiguity and equivocation. Some key terms used, however, require precise agreement in advance between the writer and the reader as to their meanings, as the clarity of what are aimed at in shop work depends largely on these terms. Throughout this MANUAL, the major key terms are used with following meanings.

(1) Clockwise (C.W.) and Counterclockwise (C.C.W.)

A circular direction, C.W. or C.C.W., is in the mind of the viewer standing in front and ahead of the machine, except when a driven component is discussed.

Such a component as the oil pump, the component is considered singly and as viewed from its driving side.

(2) Terms of Servicing Criteria

BASIC SIZE: This term is universally defined as the theoretical or nominal standard size (diameter, length, thickness, etc.) from which variations are made, and is used in this sense throughout.

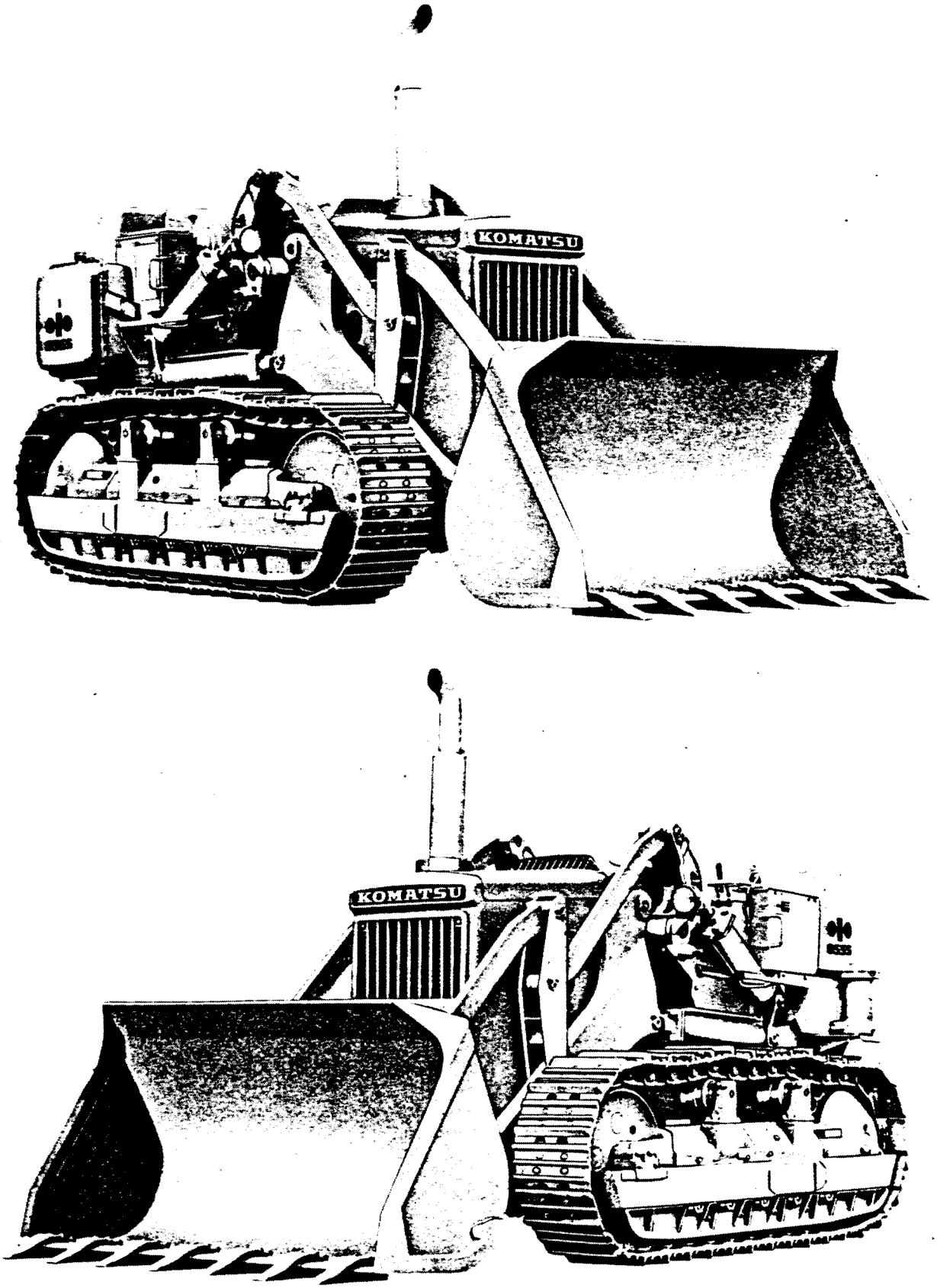
ASSEMBLY STANDARD: This is a dimensional value or a range of dimensional values to be adhered to in assembling components. An assemblage is required to satisfy the assembly standard specified for it.

STANDARD CLEARANCE: This refers to a clearance range, within which a distance of separation occurring in a full assembly or sub-assembly of replacement parts must take its value.

Such an assembly or sub-assembly is permitted to be installed or mounted in place only when this requirement is satisfied.

CLEARANCE LIMIT (maximum allowable clearance): A running clearance between a shaft and its hole, for instance, will increase as the shaft or hole wears progressively. A clearance limit is provided for each critical or important clearance and, if such a clearance is found to have increased upon disassembling beyond the clearance limit specified for it, the parts associated with that clearance must be corrected to take a value within the limit.

SERVICE LIMIT: An extra stock is provided in some parts subject to wear, so that these parts may be repaired upon disassembling. There are many such parts that can be re-used repeatedly until their extra stock is used up by grinding, cutting, etc. A service limit is the minimum or the maximum dimension (thickness, diameter, etc.) specified for such a part. Any part found to have exceeded its service limit is not repairable: its serviceability has ended and a replacement part must be used in reassembling.



D55S-3 DOZER SHOVEL

SPECIFICATIONS

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SPECIFICATIONS

MACHINE MODEL				D55S-3 DOZER SHOVEL (TORQFLOW)
Operating weight				13300 kg (29,320 lb)
DIMENSIONS	Overall length			5165 mm (203.3 in)
	Overall width, w/o bucket			2050 mm (80.7 in)
	Bucket width			2060 mm (81.1 in)
	Overall height (Top of exhaust pipe) (Shovel link)			 2970 mm (116.9 in) 2210 mm (87.0 in)
	Shoe width			400 mm (15.7 in)
	Track gauge			1600 mm (63.0 in)
	Length of track on ground			2200 mm (86.6 in)
	Ground pressure			0.76 kg/cm^2 (10.81 PSI)
	Ground contact area.			17600 mm^2(2730 sq.in)
	Ground clearance			350 mm (13.8 in)
	Height of drawbar above ground			655 mm (25.8 in)
PERFORMANCE	Travelling speed	Forward Low	1st	0 - 3.3 km/h (0 - 2.1 MPH)
			2nd	0 - 6.1 km/h (0 - 3.8 MPH)
		Forward High	1st	0 - 4.8 km/h (0 - 3.0 MPH)
			2nd	0 - 8.8 km/h (0 - 5.5 MPH)
		Reverse Low	1st	0 - 4.2 km/h (0 - 2.6 MPH)
			2nd	0 - 4.8 km/h (0 - 4.8 MPH)
		Reverse High	1st	0 - 6.0 km/h (0 - 3.7 MPH)
			2nd	0 - 11.0 km/h (0 - 6.8 MPH)
	Max. rated drawbar pull			16100 kg (35,490 lb)
	Turning radius			2.7 m (8.9 ft)
	Grade ability			30°
ENGINE	Model			KOMATSU S4D120-11
	Type			Water cooled, 4 cycle, vertical pre-conbustion chamber type, turbocharged diesel with air compressor
	No. of cylinders - bore x stroke			4 - 120 mm x 160 mm (4.72 in x 6.30 in)
	Piston displacement			7240 cc (442 cu.in)
	Rated RPM			1900
	Flywheel horsepower			125 HP
	Max. torque			55.5 kg.m (401 ft.lb)/1200 RPM
	Fuel consumption ratio			180 g (0.40 lb)/HP.h

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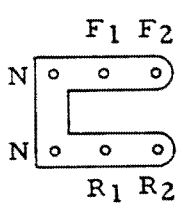
ENGINE	Fuel specification		Diesel gas oil (ASTM D975-60T No. 2D) Cetan No. over 45
	Governor		Mechanical, all speed control
	Lubrication system	Lubrication method	Gear pump, forced lubrication
		Filter	Full-flow type
		Oil cooler	Water cooled
	Cooling system		Forced circulation by centrifugal water pump
	Air cleaner		Dry, centrifugal type
	Elec. system	Generator	24V, 0.3 KW
		Battery	24V (12V x 2) - 150 Ah
	Starting method		By electric starting motor 24V, 7.4 KW
TRANSMITTING SYSTEM	Torque converter	Type	TCS36-1A 4-element, single-stage, 3-phase
		Oil specification	Engine oil (SAE No. 10W)
		Cooling method	Water cooled
	Torqflow transmission	Type	Hydraulically actuated, planetary-gear multi-disc type
		Shift speeds	2 speeds forward, 2 speeds reverse
		Shift lever pattern	
		Lubrication	Pressure feed type
	Range transmission	Range transmission type	Spur-gear sliding shift type, high-low shift
		Type	Spiral bevel type, single reduction
		Lubrication	Splash type
	Steering clutch		Wet, multiple disc, foot operated, full hydraulic actuated
	Final drive gear	Type	Spur gear, double reduction
		Lubrication	Splash type

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UNDERCARRIAGE	Suspension		Semi-rigid equalizer bar type
	No. of carrier rollers		2, each side
	No. of track rollers		5, each side
	Shoe	Type	Assembled, semi-double grouser
		Grouser height	48 mm (1.9 in)
		No. of shoes	36, each side
		Width	400 mm (15.7 in)
		Pitch	190 mm (7.5 in)
BUCKET ATTACHMENT	Max. loading capacity		2800 kg (6,170 lb)
	Bucket capacity		1.4 m^3 (1.8 cu.yd)
	Max. lift		3420 mm (134.6 in)
	Max. dumping height		2665 mm (104.9 in)
	Max. digging depth		275 mm (10.8 in)
	Reach		1020 mm (40.2 in)
	Max. tilt back angle		44°
HYDRAULIC SYSTEM	Max. oil pressure		140 kg/cm^2 (2,000 PSI)
	Hyd. cyl.	No. of lift cylinder-bore	2 - 140 mm (5.51 in)
		No. of dump cylinder-bore	2 - 130 mm (5.12 in)
	Hydraulic oil pump		Gear pump
	Control valve	Location	Within hydraulic oil tank
		Type	Double spool type
		Operating control position	Lift valve: RAISE, HOLD, LOWER, FLOAT Dump valve: DUMP, HOLD, TILT
	Hydraulic tank	Type	Equipped with built-in control valve
		Capacity	92 liters (24.3 U.S.Gal)
		Location	Right side of operator's seat
		Oil specification	Engine oil (SAE 10W)
	Filter		Full-flow type
DRAWBAR	Location		Rear-end center
	Height of drawbar above ground		655 mm (25.8 in)
	Type		Pin fixed type

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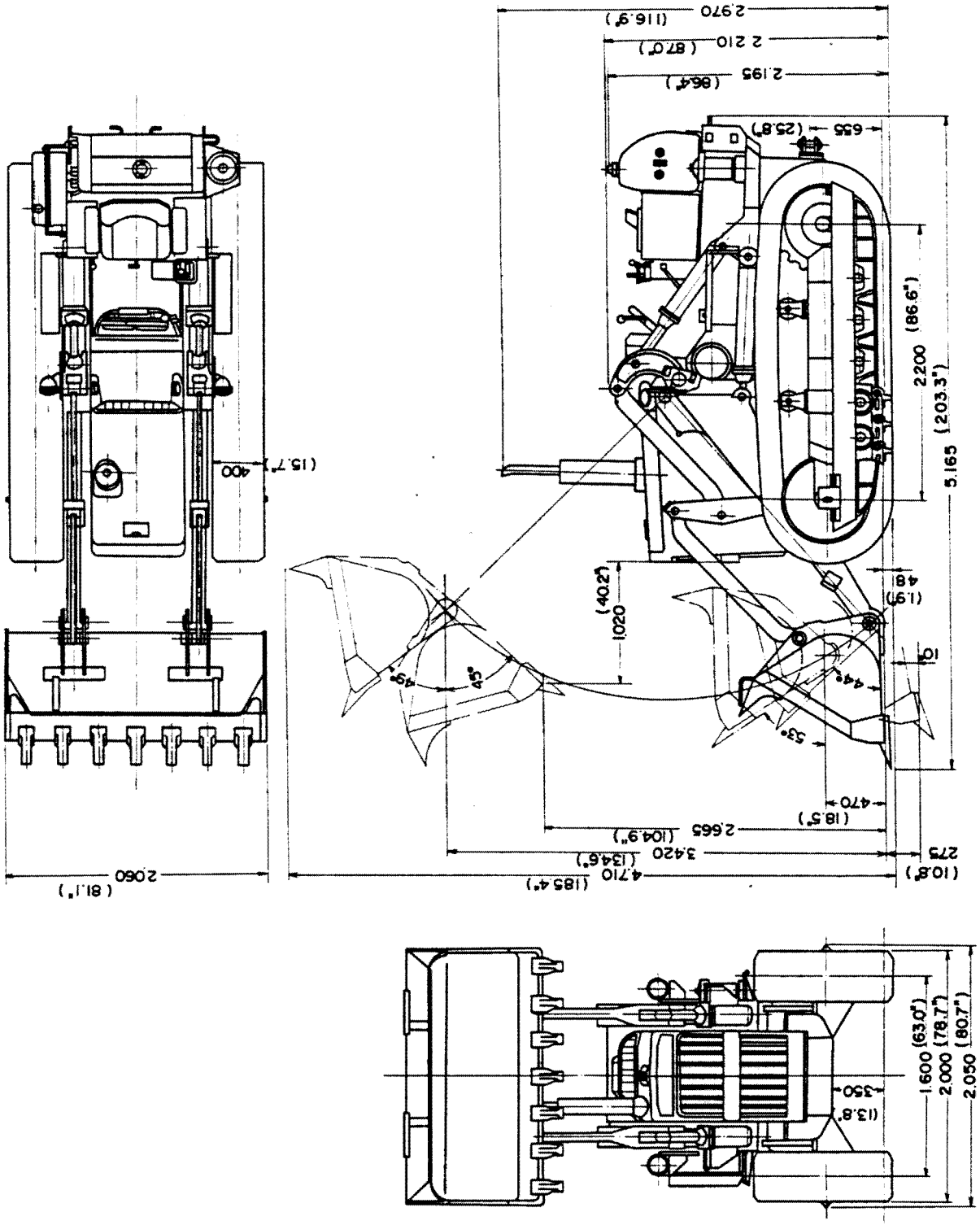
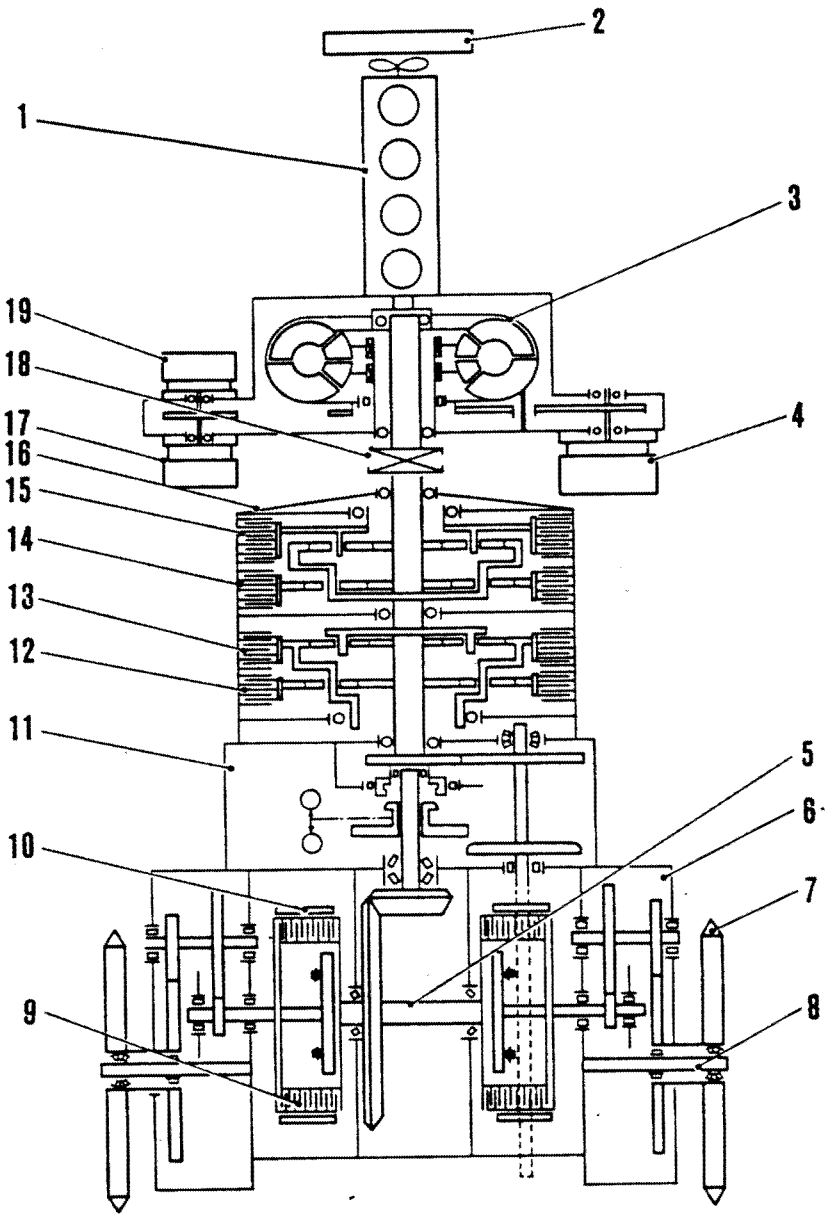
CAPACITIES	Cooling water	53 liters (14 U.S.Gal)
	Fuel tank	240 liters (63 U.S.Gal)
	Engine	18 liters (4.8 U.S.Gal)
	Torque converter Transmission	38 liters (10 U.S.Gal)
	Bevel gear drive Steering case	65 liters (17 U.S.Gal)
	Final drive case (each)	12 liters (3.2 U.S.Gal)
	Hydraulic oil	92 liters (24.3 U.S.Gal)

Specifications are subject to change without notice.



D55S-3 DOZER SHOVEL

POWER TRAIN



1. Engine
2. Radiator
3. Torque converter
4. Pump
5. Bevel gear shaft
6. Final drive
7. Sprocket
8. Sprocket shaft
9. Steering clutch
10. Steering brake
11. Range transmission
12. No. 4 clutch pack
13. No. 3 clutch pack
14. No. 2 clutch pack
15. No. 1 clutch pack
16. Torqflow transmission
17. Transmission and torque converter pump
18. Universal joint
19. Steering clutch pump

Direction	Speed		Clutch pack blocked
Forward	Low	1st	No. 2→No. 4
		2nd	No. 2→No. 3
	High	1st	No. 2→No. 4
		2nd	No. 2→No. 3
Reverse	Low	1st	No. 1→No. 4
		2nd	No. 1→No. 3
	High	1st	No. 1→No. 4
		2nd	No. 1→No. 3

Power developed by the engine (1) is transmitted to the right and left sprockets through the drive line consisting of torque converter (3), universal joint (18), torqflow transmission (16), range transmission (11), bevel gear shaft (5), steering clutches (9), and final drive (6), in that order. The power-shift transmission provides four speeds, two for forward and two for reverse,and the range transmission modifies the gearshift selection by transmitting drive according as the high-low lever is in HIGH or LOW.

Drive divides crosswise into two paths at the spiral bevel pinion and gear, and passes onto the right and left steering clutches. Each steering clutch is followed by the final drive gearing in which the drive is slowed down further through two stages of reduction before actuating the sprocket. The engine mounts are bolted to the main frame, which is welded to the bevel gear shaft case to form a rigid chassis construction. The steering clutches, range transmission and bevel gear drive are housed in the bevel gear shaft case, to the ends of which are bolted the final drive cases.