

TEREX 72-31 LOADER



146 Flywheel Horsepower



3961 First P. Nov. 75-645

TEREX 72-31 LOADER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ENGINE

Detroit Diesel 4-71N, 2 Cycle Diesel

Gross Vehicle HP @ 2300 RPM151
Flywheel HP @ 2300 RPM146

Note: Above ratings at sea level and 60°F. (15,5°C). Gross Vehicle Horsepower rating includes standard engine equipment such as water pump, fuel pump and lubricating oil pump. Flywheel Horsepower is the net horsepower after deductions from gross vehicle horsepower for fan, alternator and air compressor requirements.

Number of Cylinders4
Bore and Stroke4.25" x 5" (108 mm x 127 mm)
Piston Displacement284 cu. in. (4,65 liters)
Maximum Torque @ 1200 RPM403 ft. lbs. (56 kg m)
Oil-MIL-L-2104BSAE 30
FuelNo. 2D recommended
Maximum RPM2300
Idle Speed RPM700
Governor typeLimiting speed
Air Cleaner(1) TEREX/Donaldson Dry Type (FWG-14)

TRANSMISSION—Allison TT-2221

2 speeds forward and 1 reverse. Single lever full powershift control. Shift from first turbine to second turbine is automatic upon demand. Soft-shift feature for full powershift between forward and reverse.

VEHICLE SPEEDS

	MPH	(km/h)
Forward 1: Low Turbine	2.7	(4,34)
High Turbine	5.4	(8,69)
Forward 2: Low Turbine	10.8	(17,38)
High Turbine	20.6	(33,15)
Reverse 1: Low Turbine	3.7	(5,95)
High Turbine	7.4	(11,91)

TORQUE CONVERTER

Mounted integral with transmission.
Stall Ratio4.8:1

AXLES

Front and rear axle shafts are the heavy duty, full floating type with outboard mounted planetary final drive. Four wheel drive. Axles may be removed independently of wheels and planetaries. Optional rear axle disconnect available.

Rear Axle Oscillation:

Degree (either side of center)±11°
Wheel Lift (total)15" (381 mm)

DIFFERENTIALS

Spiral bevel pinion and ring gear.
Ratio6.17:1
NoSPIN optional for rear axle.

STEERING — Pivot Steer

60° pivot steer, 42° bucket swing. Full power steering from accumulator through steering gear and valve to steer cylinders. Mechanical follow-up link connection to axle for positive control. An accumulator is included in the circuit to provide steering assistance in both low RPM and emergency situations.

STEERING HYDRAULIC SYSTEM

Two double acting steering cylinders,
bore and stroke4" x 12.3" (101,6 mm x 312,4 mm)
Accumulator — Free piston type precharged with nitrogen at 600 psi (42,2 kg/cm²)

Hydraulic capacity: 2.5 gals. (9,5 liters). Automatic bleed-off of hydraulic pressure when engine is not in operation.

Pump — Gear type:24 GPM (90,8 liters/min.) @ 2300 RPM
System relief pressure1400 psi (98,5 kg/cm²)
Hydraulic tankpressurized tank
The steering hydraulic system is completely separated from the bucket hydraulic system.

BRAKES

Service - Air boosted hydraulic brakes with independent circuits for front and rear axles. Horn sounds in event of failure in either circuit. Automatic transmission declutch with brake pedal depression. Declutch application controlled through selector switch in the operator's compartment.

Brake linings:

Diameter16" (406 mm)
Shoe width5" (127 mm)
Total lining area676 sq. in. (4360 cm²)

Parking - Mechanically expanding shoe off transmission output shaft. Pedal actuated.

Optional Emergency Brakes — Air boosted hydraulic brakes with separate circuits to front and rear axle. Failure in either circuit sounds audible alarm. Brakes may be manually applied or will apply automatically. (Meets SAE J237).

TIRES AND RIMS

Rims are bolted directly to the wheels for positive non-slip retention.

Tire Size	Rim Width
Standard - 20.5 x 25 - 12 PR, L-2.....	17" (432 mm)
Optional - 16.00 x 24 - 12 PR, G-2, G-3.....	10" (254 mm)
Optional - 17.5 x 25 - 12 PR, L-2, L-3.....	14" (356 mm)
Optional - 18.00 x 25 - 12 PR, E-2, E-3.....	13" (330 mm)
Optional - 20.5 x 25 - 12 PR, L-3.....	17" (432 mm)
Optional - 20.5 x 25 - 12 PR, L-2, L-3 tires w/steel tread plies and shredded wire in the sidewall, tread, and under-tread	17" (432 mm)

ELECTRICAL

Direct electrical starting, 24 volt, negative ground. Two 12 volt 8D 205 amp-hr batteries. Master disconnect switch positively disconnects batteries from all circuits. Delco-Remy model 25 SI sealed alternator, rated output 14 amps at 700 rpm, 49 amps at 2100 rpm. Transistorized voltage regulator integral with alternator. Key operated electrical on-off ignition with neutral start safety feature. All dash gauges illuminated. Two front lights, two rear working lights, one stop/tail light.

BUCKET HYDRAULIC SYSTEM

Two double acting lift cylinders,
bore and stroke6" x 33.75" (152,4 mm x 857,3 mm)
Two double acting bucket cylinders,
bore and stroke4" x 35" (101,6 mm x 889 mm)
Pump — Gear Type66 GPM (250 liter/min.) @ 2300 RPM
System relief pressure2000 psi (141 kg/cm²)
Hydraulic Tank—pressurized tank, filter and sump screen serviceable without draining tank.

Control Valve—Three spool hydraulic control
Lift Arm Control Positions—Raise, hold, lower, float
Lift Arm kick out control valve—Adjustable
Bucket control positions—Rollback, hold, dump
Bucket leveling valve positions bucket for loading

SERVICE DATA

Water Cooling System	8.75 gals. (33,1 liters)
Fuel Tank	50 gals. (189,3 liters)
Crankcase	3.25 gals. (12,3 liters)
Transmission: Dry Fill	9.75 gals. (36,9 liters)
Refill	7.75 gals. (29,3 liters)
Hydraulic Tank	23 gals. (87 liters)
Hydraulic System incl. Tank	37 gals. (140 liters)
Steering System Tank	6 gals. (22,7 liters)
Axles (differential & planetary)	2.2 gals. (8,3 liters)
Recommended Fluids & Lubricants	
Axles	Multipurpose type gear lube
Cooling system	Permanent type ethylene glycol base
Transmission	Type C-2 transmission fluid

OPERATING DATA—2½ yd³ G.P. BUCKET

Lifting Capacity @ 2' (610 mm) Bucket	
Hinge Pin Height (SAE)	22,500 lbs. (10206 kg)
Hydraulic Speeds At Wide-Open Throttle	
Raise Lift Arms	6.0 sec.
Lower Lift Arms	3.7 sec.
Dump Bucket	2.2 sec.

STANDARD EQUIPMENT

Instruments: Engine Water Temperature Gauge, Ammeter, Engine Oil Pressure Gauge, Fuel Tank Gauge, Transmission Clutch Pressure Gauge, Torque Converter Oil Temperature Gauge, Two Air Pressure Gauges, Hourmeter, Air Cleaner Restriction Gauge.

Filters: Engine Oil Filters, Transmission Oil Filters, Hydraulic Oil Filters, Steering Oil Filters, Engine Air Cleaner.

Additional Standard Accessories: Air Horn, Neutral Start Key Actuated Ignition Switch, Adjustable Bucket Seat, Hydraulic Oil Cooler, Fenders, Right and Left Side Access Steps, Fan Guard, Hoodsides, Security Locks, Dual Brakes, Transmission De-clutch Control, Automatic Bucket Leveling Valve, Automatic Adjustable Lift Arm Kick-Out, Muffler, Blower Fan, Audible Low Brake Pressure Warning, Front and Rear Working Lights, Sealed Alternator, Drawbar, Electrical Master Disconnect Switch, Emergency and Parking Brake System (SAE J237), Seat Belt (SAE J386).

Note: Standard equipment conforms to SAE J185, Access, Egress.

OPTIONAL EQUIPMENT

OPTIONS TO HELP USER TO COMPLY WITH OCCUPATIONAL SAFETY & HEALTH ACT: ROPS Cab or Canopy (SAE J394), Reverse Alarm, Audible (SAE J994).

Other Options: Heater, Defroster, Fan, Floodlights (2) Mounted On Top of Cab, NoSPIN Differential (Rear Axle), Rear Axle Disconnect, Soundpac, Rotating Beacon Light, Heavy Duty Hydraulic Oil Cooler, Bottom Guard, Screened Hoodsides, Rear Screen for Radiator, Turn Signals.

ATTACHMENTS

General Purpose Buckets, Drott 4-in-1 Bucket, Rock Bucket Kit (Spade Nose), Fork Lift, Bucket Spillboards, Weld-On Bucket Teeth, Bolt-On Bucket Teeth, Hydraulic Controls for Front Attachments, Counterweights, Side Dump Bucket, Backhoe, "V" Snow Plow, Blade Snow Plows, Log Grapples, Log-Lumber Grapples, Cepeco Wheels, Railroad Car Coupler, Automatic Fire Suppression System, Tire Chains, Quick Coupler System.

OPERATING DATA — OPERATING WEIGHTS

NOTE: All dimensions, specifications and ratings conform to or exceed SAE (Society of Automotive Engineers) Specifications J732 (Specification definitions) & J742B (Bucket Rating) where applicable.

	*2½ yd³ (1,91 m³) G.P.	*2¾ yd³ (2,10 m³) G.P.	*3 yd³ (2,29 m³) G.P.	*3¼ yd³ (2,48 m³) G.P.	*5 yd³ (3,82 m³) Matl. Hdlg.	2½ yd³ (1,91 m³) Drott 4-in-1
Heaped Capacity (S.A.E.)						
Bucket Type						
Struck Capacity	2.12 yd³ (1,62 m³)	2.38 yd³ (1,82 m³)	2.50 yd³ (1,91 m³)	2.75 yd³ (2,10 m³)	4.38 yd³ (3,35 m³)	2.12 yd³ (1,62 m³)
Bucket Width	108" (2743 mm)	108" (2743 mm)	115" (2921 mm)	115" (2921 mm)	115" (2921 mm)	106" (2692 mm)
Bucket Weight	1640 lbs. (744 kg)	1720 lbs. (780 kg)	1800 lbs. (817 kg)	1810 lbs. (820 kg)	2460 lbs. (1116 kg)	2540 lbs. (1152 kg)
At Maximum Lift						
Dump Clearance	10'-0" (3048 mm)	9'- 9" (2972 mm)	9'- 9" (2972 mm)	9'- 7½" (2934 mm)	8'-11" (2718 mm)	9'- 7" (2921 mm)
@ 45°						
Reach to Tires	2'-3" (686 mm)	2'- 6" (762 mm)	2'- 6" (762 mm)	2'- 7½" (800 mm)	3'- 4" (1016 mm)	3'- 0" (914 mm)
@ 45°						
Spillboard Clearance	16'-0" (4877 mm)	16'- 0" (4877 mm)	16'- 0" (4877 mm)	16'- 4" (4978 mm)	17'- 3" (5258 mm)	16'- 6" (5029 mm)
Overall Length	20'-7" (6274 mm)	20'-10" (6350 mm)	20'-10" (6350 mm)	21'- 0" (6401 mm)	21'- 8" (6604 mm)	21'- 4" (6502 mm)
Carry						
Overall Length on Ground	20'-4" (6198 mm)	20'- 8" (6299 mm)	20'- 8" (6299 mm)	20'-10" (6350 mm)	21'-10" (6655 mm)	21'- 1" (6425 mm)
Turning Radius	21'-3½" (6490 mm)	21'- 4" (6502 mm)	21'- 7" (6579 mm)	21'- 8" (6604 mm)	21'-10" (6655 mm)	21'- 5" (6528 mm)
Outside Bucket Corner						
Breakout Force @ 4" From Cutting Edge	26,900 lbs. (12202 kg)	23,500 lbs. (10660 kg)	23,500 lbs. (10660 kg)	22,100 lbs. (10025 kg)	17,000 lbs. (7711 kg)	20,400 lbs. (9253 kg)
Static Tipping Load						
Straight Ahead	19,800 lbs. (8981 kg)	19,720 lbs. (8945 kg)	19,640 lbs. (8909 kg)	19,630 lbs. (8904 kg)	18,980 lbs. (8609 kg)	18,900 lbs. (8573 kg)
Full Turn	18,000 lbs. (8165 kg)	17,920 lbs. (8129 kg)	17,840 lbs. (8092 kg)	17,830 lbs. (8088 kg)	17,180 lbs. (7793 kg)	17,100 lbs. (7757 kg)
Operating Weight						
Front	11,292 lbs. (5122 kg)	11,422 lbs. (5181 kg)	11,551 lbs. (5240 kg)	11,567 lbs. (5247 kg)	12,622 lbs. (5725 kg)	12,752 lbs. (5784 kg)
Rear	16,808 lbs. (7624 kg)	16,758 lbs. (7601 kg)	16,709 lbs. (7579 kg)	16,703 lbs. (7576 kg)	16,298 lbs. (7393 kg)	16,248 lbs. (7370 kg)
Total	28,100 lbs. (12746 kg)	28,180 lbs. (12782 kg)	28,260 lbs. (12819 kg)	28,270 lbs. (12823 kg)	28,920 lbs. (13118 kg)	29,000 lbs. (13154 kg)

NOTE: For a bucket equipped with teeth reduce dump clearance by 5" (127 mm)
Other Special Buckets Available.

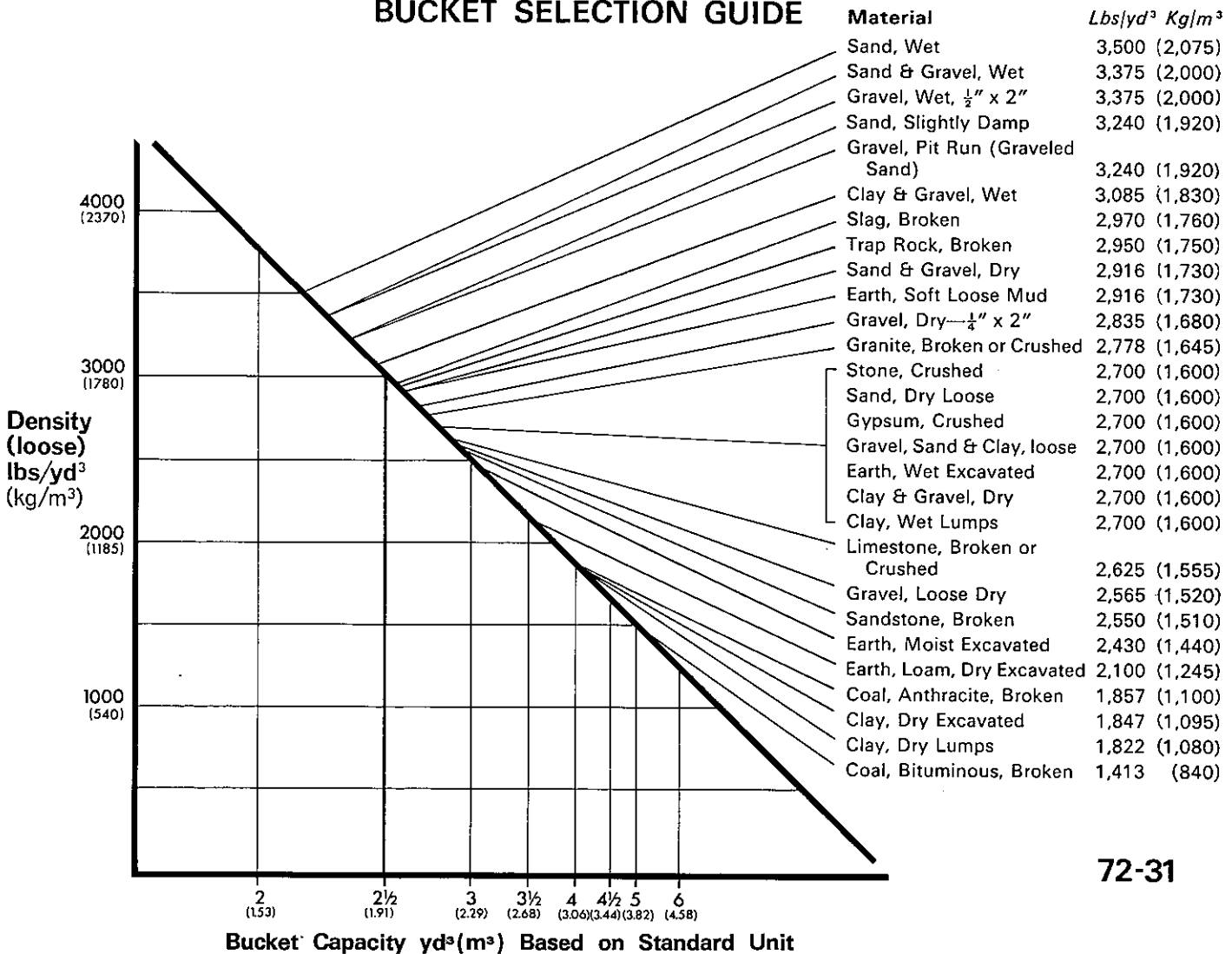
*Predrilled Cutting Edge

ADDITIONAL STABILITY INFORMATION

Item	Operating Weight Change		Full Turn Tipping Load Change	
Counterweight	+ 780 lbs.	(+354 kg)	+1125 lbs.	(+510 kg)
ROPS Cab	+1280 lbs.	(+581 kg)	+ 980 lbs.	(+445 kg)
Tires	Operating Weight Change		Full Turn Tipping Load Change	
	Tires Only	With Hydroinflation	Tires Only	With Hydroinflation
14.00 x 24 - 12 PR, G-2	-1812 lbs. (-822 kg)	-830 lbs. (-376 kg)	-985 lbs. (-447 kg)	+85 lbs. (+39 kg)
16.00 x 24 - 12 PR, G-2	-1208 lbs. (-548 kg)	+96 lbs. (+44 kg)	-656 lbs. (-298 kg)	+764 lbs. (+347 kg)
16.00 x 24 - 12 PR, G-3	-908 lbs. (-412 kg)	+396 lbs. (+180 kg)	-493 lbs. (-224 kg)	+927 lbs. (+420 kg)
17.5 x 25 - 12 PR, L-2	-1468 lbs. (-666 kg)	-274 lbs. (-124 kg)	-797 lbs. (-362 kg)	+503 lbs. (+228 kg)
17.5 x 25 - 12 PR, L-3	-1332 lbs. (-604 kg)	-138 lbs. (-63 kg)	-724 lbs. (-328 kg)	+576 lbs. (+261 kg)
18.00 x 25 - 12 PR, E-2	+364 lbs. (+165 kg)	+2144 lbs. (+973 kg)	+197 lbs. (+89 kg)	+2133 lbs. (+968 kg)
18.00 x 25 - 12 PR, E-3	+744 lbs. (+337 kg)	+2524 lbs. (+1145 kg)	+407 lbs. (+185 kg)	+2343 lbs. (+1063 kg)
20.5 x 25 - 12 PR, L-2	- 0 -	+1970 lbs. (+894 kg)	- 0 -	+2120 lbs. (+962 kg)
20.5 x 25 - 12 PR, L-3	+344 lbs. (+156 kg)	+2314 lbs. (+1050 kg)	+187 lbs. (+85 kg)	+2307 lbs. (+1046 kg)

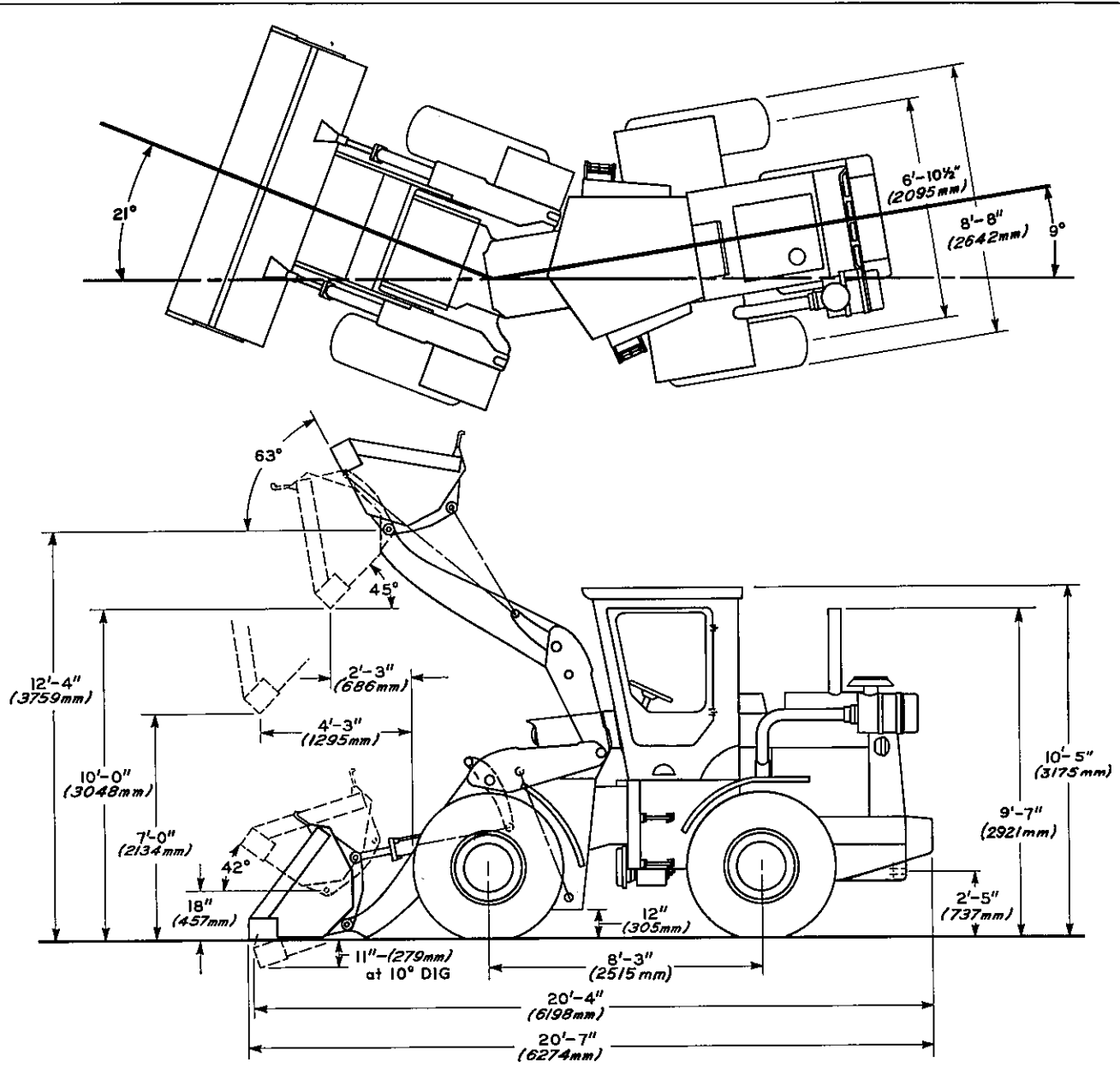
NOTE: Hydroinflation (75% fill CaCl₂ solution) in rear tires only.
Changes based upon unit equipped with standard 20.5 x 25 - 12 PR, L-2 tires.

BUCKET SELECTION GUIDE



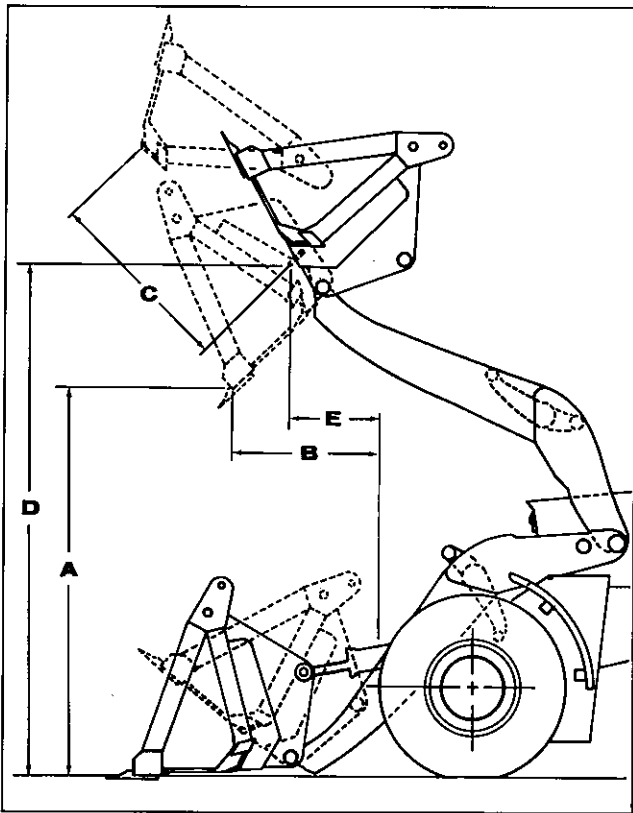
●ADDITIONAL DIMENSIONAL INFORMATION

Tire Size and Type	Vertical Dimensions Change	Turning Radius Outside Rear Tires	Reach at Max. Height Change	Machine Width	Vehicle Track
20.5 x 25, L-2 (Std.)	— 0 —	19'- 2" (5842 mm)	— 0 —	8'- 9" (2667 mm)	6'-10½" (2095 mm)
16.00 x 24, G-2	— .75" (— 19 mm)	18'- 7" (5664 mm)	+1.2" (+ 30 mm)	7'-10½" (2400 mm)	6'- 5½" (1969 mm)
16.00 x 24, G-3	— .25" (— 6,4 mm)	18'- 7" (5664 mm)	+ .9" (+22,9 mm)	7'-10½" (2400 mm)	6'- 5½" (1969 mm)
17.5 x 25, L-2	—2.50" (—63,5 mm)	18'-10" (5740 mm)	+2.8" (+71,1 mm)	8'- 2" (2489 mm)	6'- 6" (1981 mm)
17.5 x 25, L-3	— 2.0" (—50,8 mm)	18'-10" (5740 mm)	+2.8" (+71,1 mm)	8'- 2" (2489 mm)	6'- 6" (1981 mm)
18.00 x 25, E-2	+2.50" (+63,5 mm)	18'- 7" (5664 mm)	—1.8" (— 46 mm)	8'- 8½" (2654 mm)	6'- 9¾" (2076 mm)
18.00 x 25, E-3	+ 3.2" (+ 81 mm)	18'- 7" (5664 mm)	+2.2" (+55,9 mm)	8'- 8½" (2654 mm)	6'- 9¾" (2076 mm)
20.5 x 25, L-3	+ .7" (+17,8 mm)	19'- 2" (5842 mm)	+ .4" (+10,2 mm)	8'- 9" (2667 mm)	6'-10½" (2096 mm)



NOTE: Unit shown with 2½ yd. G.P. bucket, 20.5 x 25 - 12 PR, L-2 tires, and TEREX ROPS cab.

4-in-1 BUCKET



Bucket		(mm)
S.A.E. Rated Capacity	2½ yd ³	(1,91 m ³)
Overall Width.....	106"	(2692)
Max. Tiltback at Ground	41°	
At Max. Lift:		
A. Dump Clearance @ 45° Dump.....	9'-7"	(2921)
B. Reach @ 45° Dump	3'-0"	(914)
Max. Dump Angle.....	60°	
Max. Tiltback.....	64°	
Overall Operating Height.....	16'-6"	(5029)
Clam-Dozer		
C. Max. Clam Opening.....	4'-5"	(1346)
At Max. Lift with Clam Open and Cutting Edge @ 45°:		
D. Dump Clearance.....	12'-2"	(3708)
E. Reach.....	2'-0"	(610)
Height of Moldboard.....	4'-2"	(1270)

EXPORT SHIPPING INFORMATION (Approximate)

Machine —including lift arms, rims, and standard tires	
Length	17'-9" (5410 mm)
Height	7'-9" (2362 mm)
Width	8'-8" (2642 mm)
Volume	1192 cu. ft. (33,76 m ³)
Weight	26,000 lbs. (11794 kg)

ROPS Cab —when not included on vehicle	
Length	4'-5" (1346 mm)
Height	5'-6" (1676 mm)
Width	4'-7" (1397 mm)
Volume	111.3 cu. ft. (3,15 m ³)
Weight	1280 lbs. (581 kg)

Bucket —General Purpose 2½ yd ³	
Length	9'- 0" (2743 mm)
Height	3'-10" (1168 mm)
Width	3'-½" (927 mm)
Volume	105 cu. ft. (3,0 m ³)
Weight	1640 lbs. (743.9 kg)

CONVERSION CHART		
1 mile	=1.609 kilometers	1 U.S. Gal.
1 foot	=30.48 centimeters	coolant
1 inch	=2.54 centimeters	=8.3 lbs. (approx.)
1 U.S. Gal.	=3.785 liters	1 lb.
1 U.S. Gal.	=0.833 imp. gals.	=0.4536 kilograms
1 U.S. Gal.	=7.3 lbs. (approx.)	1 sq. in.
		=6.452 sq. centimeters
		1 sq. ft.
		=929 sq. centimeters
		1 sq. yd.
		=0.836 sq. meters
		1 cu. yd.
		=0.7646 cu. meters

• Revisions this printing.



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