MONTANA
Department of Transportation

MDT-BRG-015 04/23

Montana Department of Transportation
Bridge Bureau
Approved Construction Equipment List

Make:	*Komatsu*
Model:	*WA500-8*
Equipment Type:	*Wheel loader*
Contractor Modifications:	*None*

Interstate Approval Conditions

Approval Type	***Crossing only***
Speed:	***No restriction***
Weight:	***77,856 lb or less***
Traffic:	***Approved with regular traffic***
Location Restrictions:	***No restriction***

Non-Interstate Approval Conditions

Approval Type	***Denied***
Speed:	***Denied***
Weight:	***Denied***
Traffic:	***Denied***
Location Restrictions:	***Denied***

Comments:

Equipment configuration, weights, and specifications on following pages. Approval does not apply to posted bridges. Other construction equipment is not allowed to operate on or cross bridge at the same time this equipment is on the bridge. Equipment must be empty while crossing.

SPECIFICATIONS

WA4

ENGINE

Model ..... Komatsu SAA6D140E-7*
Type ..... Water-cooled, 4-cycle
Aspiration ..... Variable geometry turbo-charged, after-cooled, cooled EGR
Number of cylinders 6
Bore ..... 140 mm **5.51"**
Stroke ..... 165 mm **6.50"**
Piston displacement ..... 15.24 ltr **930 in³**
Governor ..... All-speed, electronic
Horsepower:
SAE J1995 ..... Gross 266 kW **357 HP**
ISO 9249 / SAE J1349 ..... Net 263 kW **353 HP**
Rated rpm ..... 1900 rpm
Fan drive method for radiator cooling ..... Hydraulic
Fuel system ..... Direct injection
Lubrication system:
Method ..... Gear pump, force-lubrication
Filter ..... Full-flow type
Air cleaner ..... Dry type with double elements and dust evacuator, plus dust indicator

*EPA Tier 4 Final emissions certified

TRANSMISSION

Torque converter ..... three-elements, one-stage, two-phase
Transmission ..... Full-powershift, planetary type

Travel speed	Forward*	Reverse*
1st	7.5 km/h **4.7 mph**	8.5 km/h **5.3 mph**
2nd	12.9 km/h **8.0 mph** (13.1 km/h **8.1 mph**)	12.9 km/h **8.0 mph** (13.0 km/h **8.1 mph**)
3rd	22.2 km/h **13.8 mph** (23.7 km/h **14.7 mph**)	24.7 km/h **15.3 mph** (26.6 km/h **16.5 mph**)
4th	35.5 km/h **22.1 mph** (37.3 km/h **23.2 mph**)	38.0 km/h **23.6 mph** (38.0 km/h **23.6 mph**)

*P-mode Measured with 29.5-25 tires ( ): Lock-up clutch ON

AXLES AND FINAL DRIVES

Drive system ..... Four-wheel drive
Front ..... Fixed, full-floating
Rear ..... Center-pin support, full-floating, 20° total oscillation
Reduction gear ..... Spiral bevel gear
Differential gear ..... Conventional type
Final reduction gear ..... Planetary gear, single reduction

BRAKES

Service brakes ..... Hydraulically actuated, wet disc brakes actuate on four wheels
Parking brake ..... Wet disc brake
Emergency brake ..... Parking brake is commonly used

STEERING SYSTEM

Type ..... Articulated type, fully-hydraulic power steering
Steering angle ..... 36° (40° to max end stop)
Minimum turning radius at the center of outside tire ..... 7050 mm **23' 2"**

HYDRAULIC SYSTEM

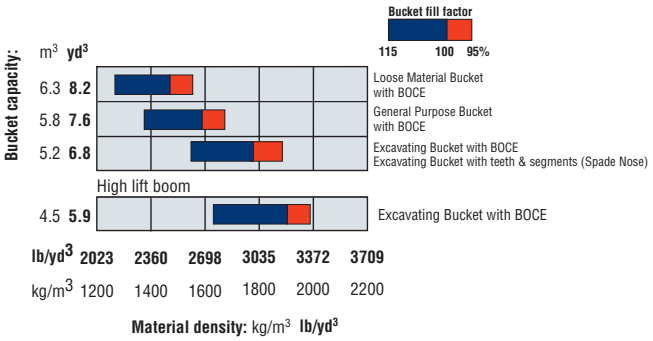
Steering system:
Hydraulic pump ..... Piston type
Capacity ..... 120 ltr/min **31.7 U.S. gal/min** at rated rpm
Relief valve setting ..... 24.5 MPa 250 kgf/cm² **3,555 psi**
Hydraulic cylinders:
Type ..... Double-acting, piston type
Number of cylinders 2
Bore x stroke ..... 100 mm x 486 mm **3.9" x 19.1"**

Loader control:
Hydraulic pump ..... Piston pump
Capacity ..... 320 ltr/min **84.8 U.S gal/min** at rated rpm
Relief valve setting ..... 34.3 MPa 350 kgf/cm² **4,980 psi**
Hydraulic cylinders:
Type ..... Double-acting, piston type
Number of cylinders—bore x stroke:
Boom cylinder ..... 2- 160 mm x 898 mm **6.3" x 35.4"**
Bucket cylinder ..... 1- 185 mm x 675 mm **7.3" x 26.6"**
Control valve ..... 2-spool type
Control positions:
Boom ..... Raise, hold, lower, and float
Bucket ..... Tilt-back, hold, and dump
Hydraulic cycle time (rated load in bucket)
Raise ..... 7.2 s
Dump ..... 1.7 s
Lower (Empty) ..... 4.2 s

SERVICE REFILL CAPACITIES

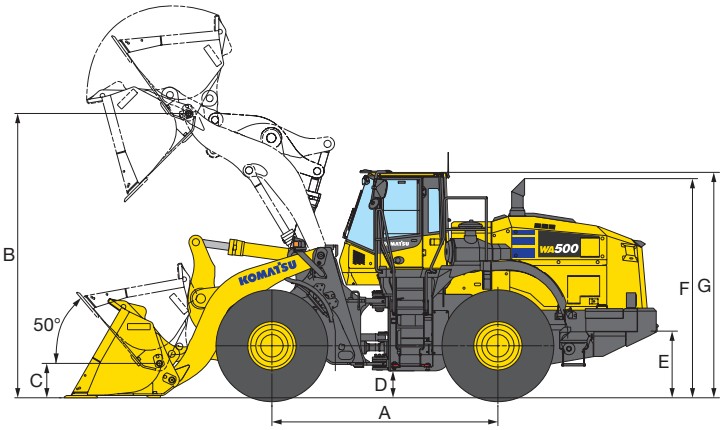
Cooling system	110 ltr	**29.1 U.S. gal**
Fuel tank	473 ltr	**124.9 U.S. gal**
Engine	37 ltr	**9.8 U.S. gal**
Hydraulic system	337 ltr	**89.0 U.S. gal**
Axle (each front and rear)	95 ltr	**25.1 U.S. gal**
Torque converter and transmission	71 ltr	**18.8 U.S. gal**
DEF tank	36 ltr	**9.5 U.S. gal**

BUCKET SELECTION GUIDE



DIMENSIONS

Measured with 29.5-25-22PR (L3) tires



	Tread width (center of tread to center of tread)		2400 mm	**7'10"**
	Width over tires		3190 mm	**10'6"**
A	Wheelbase		3780 mm	**12'5"**
B	Hinge pin height, max. height	Standard Boom	4755 mm	**15'7"**
		High Lift Boom	5165 mm	**16'11"**
C	Hinge pin height, carry position	Standard Boom	575 mm	**1'11"**
		High Lift Boom	700 mm	**2'4"**
D	Ground clearance		450 mm	**1'6"**
E	Hitch height		1115 mm	**3'8"**
F	Overall height, top of the stack		3665 mm	**12'0"**
G	Overall height, ROPS cab		3785 mm	**12'5"**

	Standard Boom			High Lift Boom
	General Purpose Bucket	Excavating Bucket	Loose Material Bucket	Excavating Bucket
	Straight Edge Bolt-on Cutting Edge	Straight Edge Bolt-on Cutting Edge	Straight Edge Bolt-on Cutting Edge	Straight Edge Bolt-on Cutting Edge
Bucket capacity: heaped	5.8 m^3 **7.6 yd^3**	5.2 m^3 **6.8 yd^3**	6.3 m^3 **8.2 yd^3**	4.5 m^3 **5.9 yd^3**
struck	4.9 m^3 **6.4 yd^3**	4.2 m^3 **5.5 yd^3**	5.3 m^3 **6.9 yd^3**	3.7 m^3 **4.8 yd^3**
Bucket width	3400 mm **11'2"**	3400 mm **11'2"**	3400 mm **11'2"**	3400 mm **11'2"**
Bucket weight	3210 kg **7,077 lb**	3055 kg **6,735 lb**	3485 kg **7,683 lb**	2885 kg **6,360 lb**
Dumping clearance, max. height and 45° dump angle* (H)	3275 mm **10'9"**	3395 mm **11'2"**	3210 mm **10'6"**	3890 mm **12'9"**
Reach at max. height and 45° dump angle*	1525 mm **5'0"**	1400 mm **4'7"**	1585 mm **5'2"**	1435 mm **4'8"**
Reach at 2130 mm **7'** clearance and 45° dump angle	2315 mm **7'7"**	2215 mm **7'3"**	2350 mm **7'8"**	2585 mm **8'6"**
Reach with arm horizontal and bucket level	3295 mm **10'10"**	3120 mm **10'3"**	3385 mm **11'11"**	3385 mm **11'1"**
Operating height (fully raised)	6470 mm **21'3"**	6415 mm **21'1"**	6540 mm **21'5"**	6715 mm **22'2"**
Overall length (bucket on ground)	9945 mm **32'8"**	9770 mm **32'1"**	10035 mm **32'11"**	10130 mm **33'3"**
Loader clearance circle (bucket at carry, outside corner of bucket)	16450 mm **54'0"**	16360 mm **53'8"**	16550 mm **54'4"**	16630 mm **54'7"**
Digging depth: 0°	135 mm **5"**	135 mm **5"**	135 mm **5"**	210 mm **8"**
10°	440 mm **1'5"**	410 mm **1'4"**	455 mm **1'6"**	470 mm **1'7"**
Static tipping load: straight	27280 kg **60,142 lb**	27380 kg **60,363 lb**	27050 kg **59,635 lb**	23070 kg **50,861 lb**
40° full turn	24740 kg **54,542 lb**	24840 kg **54,763 lb**	24510 kg **54,035 lb**	20820 kg **45,900 lb**
Breakout force	240 kN 24470 kgf **53,947 lb**	268 kN 27300 kgf **60,185 lb**	227 kN 23200 kgf **51,150 lb**	286 kN 29140 kgf **64,245 lb**
Operating weight	35040 kg **77,250 lb**	34885 kg **76,908 lb**	35315 kg **77,856 lb**	34880 kg **76,897 lb**

* At the end of tooth or B.O.C.E.
All dimensions, weights, and performance values based on SAE J732c and J742b standards.
Static tipping load and operating weight shown include lubricant, coolant, full fuel tank, ROPS cab, and operator.
Machine stability and operating weight affected by counterweight, tire size, and other attachments.
Apply the following weight changes to operating weight and static tipping load.