

# 450

**SERIES 3 SKID STEER  
TIER III CERTIFIED**

## ENGINE

Model	Case 445T/M3 diesel, Tier III certified	
Type	4-stroke, turbocharged	
Cylinders	4	
Bore/Stroke	4.1 in x 5.2 in (104 mm x 132 mm)	
Displacement	274 in <sup>3</sup> (4.5 L)	
Fuel injection	Direct	
Fuel	#2 Diesel	
Fuel filter	In-line strainer	
Air intake	Cross-flow	
Cooling	Liquid	
Engine speeds (rpm)		
High idle - no load	2415±60	
Rated - full load	2300	
Low idle	1075±75	
Horsepower per SAE J1349		
Gross	90 (67 kW) @ 2300 rpm	
Net	83 (62 kW) @ 2300 rpm	
Peak torque		
@ 1300 rpm	288 lb-ft (390 N·m)	

## ENGINE COOLING

Radiator		
Core type	Square wave serpentine	
Core size area	377 in <sup>2</sup> (.243 m <sup>2</sup> )	
Rows of tubes	4	
Cap pressure	14 psi (97 kPa)	
Fan		
Diameter	20.4 in (518 mm)	
Ratio	1.1:1	
Water pump		
Style	Centrifugal	
Flow	29 gpm (110 L/min)	
Engine lubrication		
Pump	Deep sump with plate cooler and pressurized under-piston nozzles	
Pump operating angle ratings		
Side-to-side	Rated 35°	
Fore and aft	Rated 35°	
Oil filtration	Replaceable, full-flow cartridge	

## POWERTRAIN

Drive pump	Tandem, axial piston hydrostatic transmission with integral charge pump driven directly off engine flywheel	
Pump to engine ratio	1:1	
Displacement	0 to 2.81 in <sup>3</sup> (46 cc)	
Pump flow @ high idle engine rpm	29.4 gpm (111 L/min)	
Flow	Bi-directional	
Charge pressure	360 psi (24 bar)	
System relief	5,220 psi (360 bar)	
Controls	Servo	
Drive motors	Fixed displacement radial piston	
Maximum displacement	40.3 in <sup>3</sup> (660 cc)	
Speed @ rated engine rpm		
@ max displacement	168 rpm	
High speed	309 rpm	
Torque @ max displacement and relief pressure	2,789 lb-ft (3,781 N·m)	
Travel speed – mph (km/h)		
Low range	6.2 (10.0)	
High range	11.3 (18.1)	
Final drive	Single-reduction chain drive	
Drive chain		
Size	ASA #120HS	
Tensile strength	41,000 lb (182,384 N)	
Axles		
One-piece, forged induction-hardened high carbon steel		
Max torque @ max displacement and relief pressure	6,012 lb-ft (8152 N·m)	
Diameter	2.5 in (63.5 mm)	
Length	14.92 in (379 mm)	
Parking brakes	Spring-applied, hydraulic release	
Engagement	Depress on/off brake button on handle or instrument panel, raise seat bar, get off seat, or stop engine	

## HYDRAULIC SYSTEM

Standard equipment pump		
Type	Gear pump	
Displacement	2.2 in <sup>3</sup> /rev (36 cc)	
Pump flow @ rated engine rpm		
Total	21.9 gpm (83 L/min)	
Optional high flow @ rated engine rpm		
Total	41.8 gpm (158 L/min)	
Loader control valve	3-spool open-center series with power beyond port	
Relief pressure	3050 psi (210 bar)	
Port relief pressures		
#1B Raise	3800 psi (260 bar)	
#2A Rollback	3800 psi (260 bar)	
#2B Dump	3350 psi (230 bar)	
Hydraulic lines		
Tubing	37° JIC Flare	
Loop hoses	SAE 100 R12	
Hydraulic oil cooler		
Core type	Four row in-line	
Hydraulic filter	6-micron spin-on replaceable element on the return line with warning indicator	

## INSTRUMENTATION

Indicators	
Digital Hourmeter	
Fuel level LCD bar graph with alarm	
Warning lights with alarms	
Engine coolant temperature	
Engine oil pressure	
Engine Malfunction	
Hydraulic charge pressure	
Hydraulic filter restriction	
Hydraulic oil temperature	
Warning alarms	
Battery voltage (plus display)	
Indicator light	
Engine preheat	
Parking brake	
Seat bar reminder	

## ELECTRICAL SYSTEM

Alternator	95 amp
Starter	2.7 kW
Battery	
12-volt low-maintenance 1125 cold-cranking amps @ 0° F (-18 C)	

## OPERATOR ENVIRONMENT

ROPS/FOPS level 1 canopy w/side screens
Tilt ROPS/FOPS
Rear window w/emergency escape feature
Instrument panels
Suspension vinyl seat
2 in (51 mm) retractable seat belt
Hand & foot throttles
Alarm package
Headliner
Top window
Cup holder
Power plug socket
Foot rest
Storage tray
Low effort ergonomic hand controls
Padded seat bar w/integral arm rests
Loader control lockout system
Electric parking brake control
Floor cleanout panel

## CYLINDERS

Lift cylinder	
Bore diameter	2.25 in (57.2 mm)
Rod diameter	1.75 in (44.4 mm)
Stroke	38.2 in (970 mm)
Closed length	52.0 in (1320 mm)
Bucket cylinder	
Bore diameter	2.5 in (63.5 mm)
Rod diameter	1.5 in (38.1 mm)
Stroke	23.2 in (590 mm)
Closed length	47.4 in (1204 mm)

## OPERATING WEIGHTS

Unit equipped with 12 x 16.5 Galaxy Beefy Baby II tires, 73 in (1.85 m) long lip dirt bucket, mechanical attachment coupler, 165 lb (75 kg) operator and full fuel tank	
	8,630 lb (3915 kg)
Shipping weight	7,780 lb (3529 kg)
Add-on weights	
Side cab glass	+70 lb (32 kg)
Lexan® door	+70 lb (32 kg)
Glass door w/wiper	+77 lb (35 kg)
Heater	+60 lb (27 kg)
Suspension seat	+10 lb (4.5 kg)
High flow auxiliary hydraulics	269 lb (122 kg)
Hydraulic attachment coupler	+38 lb (17 kg)
Counterweight	+850 lb (385 kg)

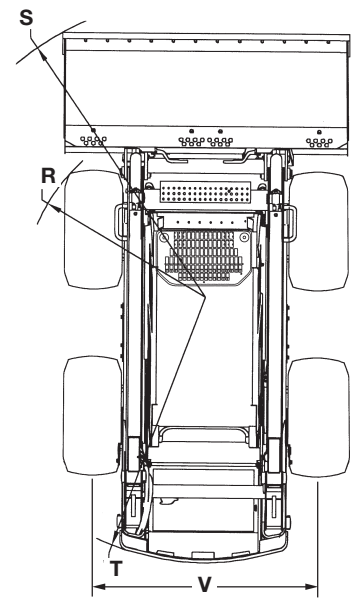
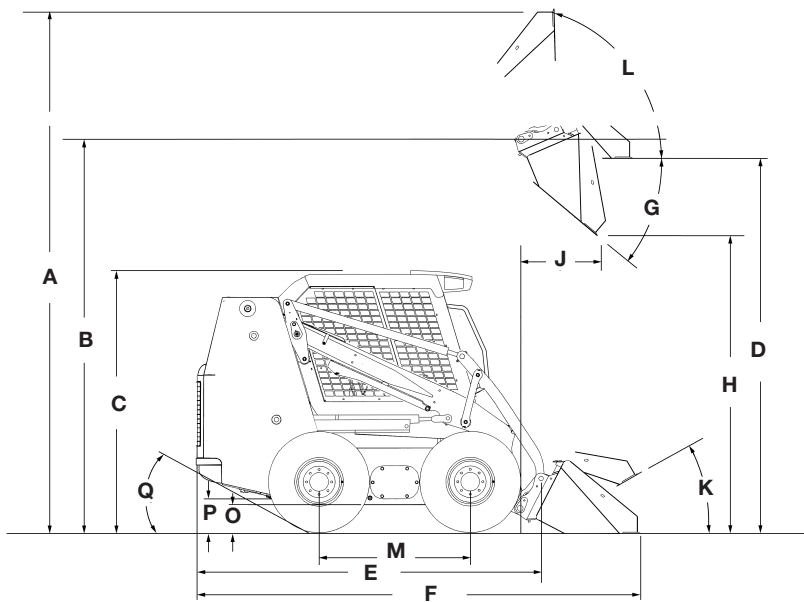
## SERVICE CAPACITIES

Fuel tank	20.7 gal (78.3 L)
Engine oil w/filter	12.7 qt gal (12 L)
Engine cooling system	12 qt (11.4 L)
Hydraulic system	
Reservoir	6.5 gal (24.5 L)
Total	17 gal (64.3 L)
Chain tanks (per side)	8 qt (7.6 L)

## TIRE SELECTION

	Size	Ply Rating	Tread Depth	Tire Width	Width Over Tires	Tire Weight*
Galaxy XD 2002	12.00 x 16.5	10	0.69 in (17 mm)	12.4 in (315 mm)	72 in (1.83 m)	72 lb (32.7 kg)
Galaxy Beefy Baby II	12.00 x 16.5	10	0.81 in (21 mm)	12.4 in (315 mm)	72 in (1.83 m)	82 lb (37.2 kg)
Galaxy Hippo	33/15.50 x 16.5	12	0.81 in (21 mm)	15.2 in (386 mm)	72 in (1.83 m)	94 lb (42.6 kg)
Galaxy King Kong	12.00 x 16.5	12	1.25 in (32 mm)	11.6 in (295 mm)	72 in (1.83 m)	97 lb (44 kg)
Galaxy Bulky Hulk	33/15.50 x 16.5	14	1.37 in (35 mm)	15.1 in (384 mm)	80 in (2.03 m)	117 lb (53.1 kg)
Galaxy Hulk	12.00 x 16.5	12	1.37 in (35 mm)	12.0 in (305 mm)	72 in (1.83 m)	96 lb (43.5 kg)
Galaxy Solid Flex	12.00 x 16.5	n/a	0.8 in (20 mm)	11 in (279 mm)	71 in (1.80 m)	280 lb (127 kg)
Galaxy Solid Flex (offset wheel)	12.00 x 16.5	n/a	0.8 in (20 mm)	11 in (279 mm)	77 in (1.95 m)	280 lb (127 kg)

NOTE: \*Tire weight does not include wheel weight. †Equals grouser depth. ØEquals track width.



### DIMENSIONS\*

<b>A.</b>	Overall operating height	
	Dirt bucket	151.9 in (3.86 m)
	Light material bucket	158.9 in (4.04 m)
	Height to	
<b>B.</b>	Bucket hinge pin	124.5 in (3.16 m)
<b>C.</b>	Top of rollover protective structure	83.2 in (2.11 m)
<b>D.</b>	Bottom of level bucket, loader arm fully raised	116.4 in (2.96 m)
	Overall length	
<b>E.</b>	w/o attachment w/coupler	109.9 in (2.79 m)
<b>F.</b>	w/dirt bucket on ground	140.7 in (3.57 m)
<b>F.</b>	w/light material bucket on ground	148.5 in (3.79 m)
<b>G.</b>	Dump angle at maximum height	
	Dirt bucket	40°
	Light material bucket	31°
<b>H.</b>	Dump height – loader arm fully raised	
	Dirt bucket	94.4 in (2.40 m)
	Light material bucket	93.0 in (2.36 m)
<b>J.</b>	Dump reach – loader arm fully raised	
	Dirt bucket	26.4 in (671 mm)
	Light material bucket	35.3 in (896 mm)
	Maximum attachment rollback	
<b>K.</b>	Bucket on ground	30°
<b>L.</b>	Bucket at full height	55°
<b>M.</b>	Wheelbase	46.9 in (1.19 m)
	Ground clearance	
<b>O.</b>	Bottom of chain case	9.2 in (234 mm)
<b>P.</b>	Bottom of belly pan	11.2 in (284 mm)
<b>P.</b>	Bottom of optional counterweight	9.2 in (234 mm)
<b>Q.</b>	Angle of departure	26°
	Clearance circle front	
<b>R.</b>	less bucket	53.3 in (1.35 m)
<b>S.</b>	w/73 in (1.85 m) dirt bucket in carry position	84.8 in (2.15 m)
<b>S.</b>	w/84 in (2.1 m) dirt bucket on ground	86.3 in (2.19 m)
<b>S.</b>	w/82 in (2.08 m) light material bucket on ground	93.3 in (2.37 m)
<b>T.</b>	Clearance circle rear	65.4 in (1.66 m)
<b>V.</b>	Tread width, centerline to centerline	58.5 in (1.49 m)

NOTE: \*Equipped with 12 x 16.5 tires.

### PERFORMANCE SPECS

Operating load	2,450 lb (1111 kg)
with counterweight	2,650 lb (1202 kg)
Tipping load	4,900 lb (2223 kg)
with counterweight	5,300 lb (2404 kg)
Breakout force	
Lift cylinder	5,689 lbf (25 306 N)
Bucket cylinder	7,213 lbf (32 085 N)
Dig depth	
w/bucket flat	0.1 in (3 mm)
Cycle time	
Raise	3.5 seconds
Lower	2.2 seconds
Dump	2.2 seconds
Rollback	1.6 seconds

NOTE: SAE rated lift capacities.

### OPTIONAL BUCKETS

Type	Width inch (m)	Weight lb (kg)	Heaped Capacity ft <sup>3</sup> (m <sup>3</sup> )
Dirt	73 (1.9)	553 (251)	16.8 (.48)
	84 (2.1)	620 (281)	19.4 (.55)
	73 (1.9)	621 (282)	16.8 (.48)
HD Dirt	84 (2.1)	676 (307)	19.4 (.55)
	73 (1.9)	628 (285)	22.4 (.63)
	84 (2.1)	674 (306)	25.7 (.73)
Utility	73 (1.9)	696 (316)	22.4 (.63)
	84 (2.1)	755 (343)	25.7 (.73)
	82 (2.1)	584 (265)	32.5 (.92)

## STANDARD EQUIPMENT

### OPERATOR'S COMPARTMENT

ROPS/FOPS level 1 canopy w/side screens  
Tilt ROPS/FOPS  
Rear window w/emergency escape feature  
Instrument panels  
Suspension vinyl seat  
2 in (51 mm) retractable seat belt  
Hand & foot throttles  
Alarm package  
Headliner  
Top window  
Cup holder  
Power plug socket  
Foot rest  
Storage tray  
Low effort ergonomic hand controls  
Padded seat bar w/integral arm rests  
Loader control lockout system  
Electric parking brake control  
Floor cleanout panel

## OPTIONAL EQUIPMENT

### OPERATOR'S COMPARTMENT

Deluxe cloth suspension seat w/heater and lumbar support  
3 in (76 mm) retractable seat belt  
Electric auxiliary hydraulic control  
Glass front door w/wiper & washer  
Sliding side windows  
Air conditioning  
Heater (deluxe)  
Demolition door  
Radio

### LOADER

Radial lift linkage  
Mechanical two-way self-leveling linkage  
Power Cycle bucket linkage  
Mechanical attachment coupler

### ENGINE

Case 445T/M3 diesel  
Tier III Certified  
Integral engine oil cooling  
Fuel filter w/water trap  
Automatic belt tensioner  
Grid heater  
Dual element air cleaner  
95 amp alternator  
1125 CCA 12-volt battery  
Battery disconnect and jump start terminals  
Side-by-side radiator and oil cooler

### POWERTRAIN

Hydrostatic four wheel drive  
Servo controls  
ASA #120HS drive chain  
SAHR disc parking brakes

### LOADER

Auxiliary front electric control  
Ride Control  
Hydraulic attachment coupler

### HYDRAULICS

Auxiliary high-flow 3050 psi  
(210 bar) - 41.8 gpm (158 L/min)  
Attachment case drain plumbing  
Electronically controlled auxiliary hydraulics  
Second auxiliary hydraulics

### ENGINE

Coolant block heater

### HYDRAULICS

Auxiliary hydraulics 3050 psi  
(210 bar) - 21.9 gpm (83 L/min),  
Auxiliary interlock system  
Loader arm mounted ISO flat face hydraulic quick connectors  
Loader function lockout system  
Auxiliary function lockout override  
Loader lift lockout override  
3-spool loader control valve  
Heavy-duty oil cooler  
Loader arm float position

### OTHER

Integral bumper counterweight  
Lockable service access hood  
Single-point daily servicing  
Halogen lights, 2-front, 2-side, 1-rear flood (halogen)  
Rear tail lights  
Options harness  
Remote oil drain

### OTHER

2-speed ground drive  
Rotating beacon  
850 lb (385 kg) counterweight  
Lift hooks  
Drawbar  
Heavy-duty rear door  
Special paint  
Language decals  
Factory-installed tires - see page 2  
Buckets - see page 3  
Bolt-on spill guards  
Bolt-on cutting edges  
42 in (1.07 m)/48 in (1.22 m) pallet forks  
Steel tracks  
Deluxe instrument panel  
Road lights

NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

NOTE: All engines meet current EPA emissions requirements.

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