

645-B



645-B
3.0 cu. yd. (2,3 m³) Wheel Loader

Illustration includes
optional equipment.

CAPACITY

- Full turn tipping load — 16,533 lbs. (7498 kg)
- Breakout force — 27,210 lbs. (12343 kg)
- Operating weight — 26,955 lbs. (12226 kg)

STABILITY

- Long wheelbase, 116" (2950 mm)
- Wide tread, 79" (2000 mm)

SPEED

- SOF-SHIFT transmission, smooth, fast directional changes
- Twin-turbine torque converter, automatic crowd
- Single lever transmission control

POWER

- Allis-Chalmers 3500 Mark II diesel engine
- Flywheel horsepower — 151
- Kilowatts — 113

LOADING ABILITY

- Ground level loading and carry
- Powerful responsive hydraulics
- Torque proportioning differentials
- Automatic bucket positioner and lift kickout*

*Optional equipment

SERVICEABILITY

- Easy ground level access
- Convenient spin-on engine filters

DEPENDABILITY

- In-line straddle mounted linkage
- Rugged self-aligning pivot bearings
- Pin-connected axles
- Total Quality Assurance reliability

MANEUVERABILITY

- 90° articulation, 15'11" (4847 mm) turning radius
- Demand steering, quick response at all engine speeds
- Wheels track

645-B SPECIFICATIONS



ENGINE

MakeAllis-Chalmers
 Model3500 Mark II turbo-charged diesel
 *Flywheel horsepower151
 **Kilowatts113
 Governed rpm2200
 Maximum torque
 ft.-lbs. @ rpm443 ft.-lbs. @ 1600 rpm
 kg-m @ rpm61.3 kgm @ 1600 rpm
 Bore & stroke4.25" x 5.0" (108 x 127 mm)
 Number of cylinders6
 Displacement426 cu.in. (7.0 lit)

*Net flywheel horsepower available at the flywheel of the vehicle engine under SAE J816b standard conditions of 85°F (29°C) and 29.38" (746 mm) hg. after deductions have been made for Fan, Alternator, Compressor, Lube Oil Pump, Water Pump, Air Cleaner, Muffler and Fuel Pump; Engine will maintain specified flywheel horsepower up to 10,000 ft. (3050 m) altitude.

**The International System of Units for power, one (1) horsepower equals 0.746 kilowatts in U.S.A. units.



TORQUE CONVERTER

TypeTwin-turbine
 Torque multiplication5.05 to 1



TRANSMISSION

TypePower shift planetary

	standard		optional	
Forward Speeds	mph	km/hr	mph	km/hr
1	3.0	4.8	3.7	6.0
2	6.5	10.5	8.5	13.7
3	11.7	18.8	9.9	15.9
4	23.0	37.0	22.7	36.5
Reverse speeds				
1	2.9	4.7	3.8	6.1
2	8.8	14.2	8.7	14.0
3	—	—	10.0	16.1
4	—	—	23.5	37.8

SOF-SHIFT transmission permits full power directional shift changes in low ranges for fast cycle time. Shift from 1st to 2nd and 3rd to 4th is automatic.



AXLES

Planetary reduction at wheel end. Axle shafts removable independent of wheel and planetary. Torque proportioning differentials. Axle housings pin connected to loader frame. Rear axle oscillation22°
 Inches vertical travel15" (381 mm)



BRAKE SYSTEMS

Service — 4 wheel, air over hydraulic, dual system.
 Emergency—dash mounted lever actuates service brakes.
 Parking—mechanically actuated drum brake on drive line.



TIRES

TypeTubeless
 Standard20.5-25 (12 PR) L3
 Optional17.5-25 (12 PR) L2, L3
 20.5-25 (12 PR) L2
 20.5-25 (16 PR) L2, L3



ELECTRICAL SYSTEM

Voltage24V
 Standard alternator30 amp
 Battery amp/hour rating180
 System protected by circuit breakers



LOADER HYDRAULIC SYSTEM

TypeClosed with pressure & vacuum relief
 CylindersDouble acting
 Lift (2)6.0" x 32.5" (152 x 826 mm)
 Dump (2)5.5" x 37.25" (140 x 946 mm)
 PumpGear type tandem-mounted
 Capacity @ governed rpm71.0 gpm (268.7 lit/min)
 Control valveTwo spool
 Relief valve pressure1825 psi (130 kg/cm²)
 Lift time6.5 sec.
 Lower time4.8 sec.
 Dump time3.0 sec.



STEERING SYSTEM

TypeHydraulic power*
 CylindersTwo, double acting
 Bore & stroke3.0" x 19.19" (76 x 487 mm)
 PumpGear type
 Capacity @ governed rpm18.0 gpm (68.1 lit/min)
 *With demand valve interconnection to loader hydraulic system, and mechanical follow-up linkage.



FILTRATION SYSTEMS

ENGINE
 Lube oilFull flow 25 micron
 FuelFull flow 5 micron
 Air cleanerDry type w/safety element
 CoolantFilter conditioner
 TRANSMISSION-TORQUE CONVERTER
 OilFull flow 25 micron
 HYDRAULIC
 OilFull flow 25 micron
 Full flow magnetic
 Full flow wire mesh
 Pressure-vacuum relief40 micron element



CAPACITIES

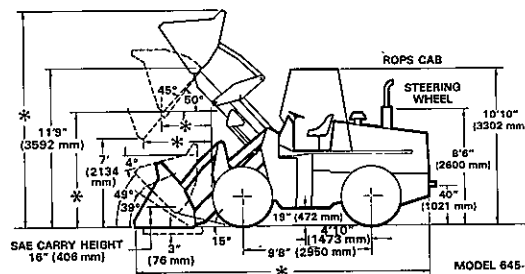
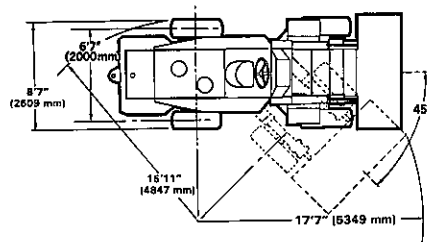
ENGINE
 Lube oil4.75 U.S. gal (18.0 lit)
 Coolant10.5 U.S. gal. (39.7 lit)
 Fuel tank55.0 U.S. gal. (208.2 lit)
 TRANSMISSION8.75 U.S. gal. (33.1 lit)
 HYDRAULIC47.0 U.S. gal. (177.9 lit)
 AXLES16.5 U.S. gal. (62.5 lit)



STANDARD EQUIPMENT

● Air filter service ● Air horn ● Anti-freeze ● Back-up alarm ● Bucket level indicator ● ROPS cab with tinted safety glass, front windshield wiper, sliding side windows, and headliner ● Pusher fan ● Fan finger guard ● Front and rear fenders ● Engine intake air heater ● Transmission neutralizer ● Muffler ● Adjustable bucket seat ● Seat belt.
 ● Gauges — air pressure, low air pressure warning light and buzzer, ammeter, converter oil temperature, engine oil pressure, engine coolant temperature, fuel level dipstick, hourmeter, hydraulic oil level sight gauge, transmission oil pressure.
 ● Lighting — headlights, rear floodlights, rear stop and taillights, dashlights.

DIMENSIONS



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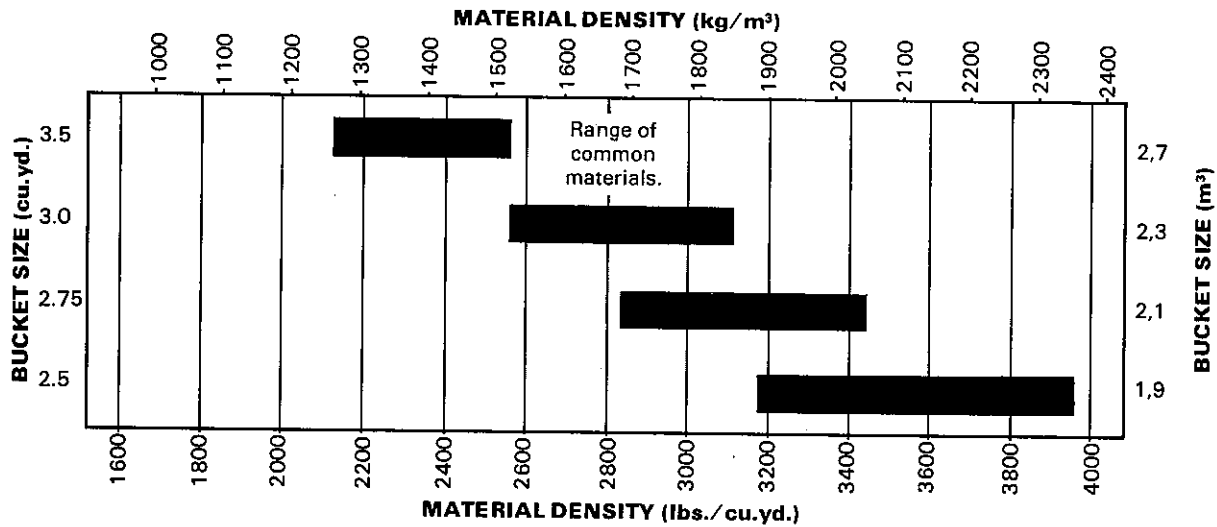
PERFORMANCE DATA

	General Purpose	4 in 1
BUCKET CAPACITY RATED	2.5 cu.yd. 1,9 m ³	2.5 cu.yd. 1,9 m ³
STRUCK CAPACITY	2.07 cu.yd. 1,58 m ³	1.99 cu.yd. 1,52 m ³
BUCKET WEIGHT	1,748 lbs. 793 kg	2,800 lbs. 1,270 kg
BUCKET WIDTH	105" 2667 mm	106" 2692 mm
DUMP HEIGHT @ 45°	9'4" 2845 mm	8'6" 2591 mm
REACH @ 45°	33" 844 mm	32" 813 mm
REACH@ 45° 7 Ft. (2134 mm)	59" 1504 mm	66" 1681 mm
OVERALL LENGTH (BUCKET ON GROUND)	20'9" 6315 mm	22'6" 6864 mm
OVERALL HEIGHT (BUCKET RAISED)	15'2" 4635 mm	14'9" 4483 mm
CLEARANCE CIRCLE (BUCKET @ CARRY)	34'11" 10638 mm	35'5" 10790 mm
BREAKOUT FORCE	30,790 lbs. 13966 kg	28,340 lbs. 12855 kg
TIPPING LOAD		
0°	20,678 lbs. 9379 kg	17,854 lbs. 8098 kg
35°	18,433 lbs. 8361 kg	15,820 lbs. 7176 kg
40°	17,782 lbs. 8065 kg	15,229 lbs. 6907 kg
45°	17,060 lbs. 7738 kg	14,575 lbs. 6611 kg
OPERATING WEIGHT	26,715 lbs. 12117 kg	27,670 lbs. 12549 kg

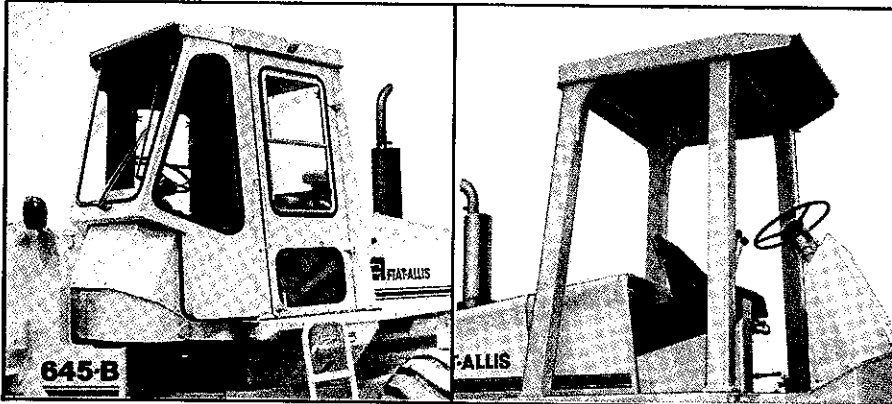
OPTIONAL EQUIPMENT PERFORMANCE DATA	WEIGHT	TIPPING LOAD			
		0°	35°	40°	45°
20.5 - 25 Tires with 75% CaCl ₂ in rear	+1820 lbs. +825 kg	+2677 lbs. +1214 kg	+2364 lbs. +1072 kg	+2275 lbs. +1032 kg	+2178 lbs. +988 kg
17.5 - 25 Tires with 75% CaCl ₂ in rear	-520 lbs. -236 kg	+331 lbs. +150 kg	+182 lbs. +83 kg	+144 lbs. +65 kg	+105 lbs. +47 kg
17.5 - 25 Tires	-1740 lbs. -789 kg	-1445 lbs. -655 kg	-1372 lbs. -622 kg	-1347 lbs. -611 kg	-1318 lbs. -598 kg
COUNTERWEIGHT (not to be used with CaCl ₂)	+1250 lbs. +566 kg	+2739 lbs. +1242 kg	+2327 lbs. +1055 kg	+2209 lbs. +1002 kg	+2080 lbs. +943 kg
ROPS CANOPY (in lieu of ROPS cab)	-400 lbs. -181 kg	-323 lbs. -146 kg	-303 lbs. -138 kg	-297 lbs. -135 kg	-291 lbs. -132 kg
LESS ROPS CAB	-1055 lbs. -478 kg	-954 lbs. -432 kg	-878 lbs. -398 kg	-856 lbs. -388 kg	-832 lbs. -377 kg

NOTE: All performance data and specifications are based on the standard unit equipped with 20.5-25 (12 PR) L3 tires, ROPS cab and bucket as indicated. All data is obtained in compliance with the latest applicable SAE Recommended Practices including J732c and J742b.

645-B BUCKET SELECTION CHART



Bucket recommendations shown above are based on a full SAE heaped load at the material density indicated. When selecting the proper bucket for a specific application, other factors must also be considered. These include loadability and heaping characteristics of the material, terrain and other pertinent job conditions.



FIAT-ALLIS ROPS

Complies with SAE and OSHA ROPS requirements. Pin-connected for easier removal and installation. Rubber isolation mounted for reduced vibration and noise.

Standard cab equipment includes tinted safety glass, front windshield wiper, two full doors which can be latched back for ventilation, sliding side windows and headliner.

Optional cab accessories include rear windshield wiper, heater, front and rear defroster fans, turn signals and sound suppression.

OPTIONAL AND ALLIED EQUIPMENT

Air conditioner
Alternator 50 amp.
Alternator enclosed, 20 amp.
Automatic bucket positioner
Automatic lift kickout
Brake system moisture ejector
Brake system alcohol injector
Buckets — special purpose, light material, rock, multipurpose, side dump, ejector, tine, etc.

Bucket teeth
ROPS canopy
Counterweight
Differential, no-spin
Drawbar
Engine oil by-pass filter
Ether starting aid
Hood side panels
Ladder, right side dual access
Lift eyes
Lights, additional front flood

Logging counterweight
Logging and landfill guards
Log and lumber forks
Single lever hydraulic control
Snow plows and wings
Steering knob
Supplemental steering system
Tires, special purpose
Tool kit
Vandalism protection



The information contained herein is general in nature and is not intended for specific application purposes. Fiat-Allis reserves the right to make changes in specifications shown herein or add improvements at any time without notice or obligation. Illustrations show standard or non-standard items.