

540G-III, 548G-III, 640G-III, 648G-III, 748G-III Skidders (SN.-586336) Diagnostic



JOHN HARE



COLLECTION

OPERATION AND TEST MANUAL

**Cable models 540G-III, 548G-III, 640G-III; Grapple models 648G-III, 748G-III
(SN.-586336)**

TM1870 30 JUN 15 (ENGLISH)

For complete service information also see:

G-III Series Skidders 540GIII, 640GIII, 548GIII, 648GIII, 748GIII (SN. before 586336) Repair	TM1871
JLink (MTG) Technical Manual	TM114519
Alternators and Starting Motors	CTM77
TMIV1200 - 1400 Series Inboard Planetary Axles	CTM442
TeamMate II 1200, 1400, and 1600 Series Inboard Planetary Axles	CTM43
60 and 6000 Winches	CTM41
Super Caddy Oil Cleanup Procedure	CTM310
DF180 Series Powershift Transmission Repair Manual	CTM308
40 and 4000 Winches	CTM25



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Foreword

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

CAUTION:

This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

Thanks very much for your
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Section 9000 - GENERAL INFORMATION

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Group 01 - Safety Information

Handle Starting Fluid Safely



Store Safely

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.

Do not use starting fluid on an engine equipped with glow plugs or an air intake heater.

Clean Trash from Machine



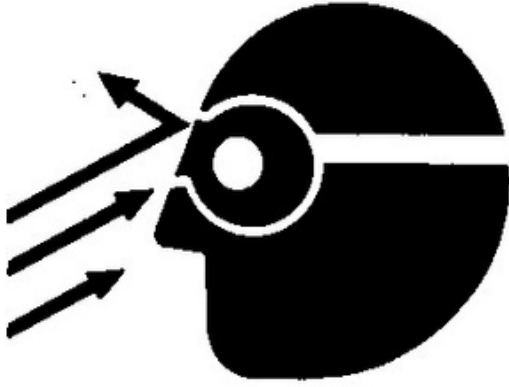
Clean Trash from Machine

Keep engine compartment, radiator, batteries, hydraulic lines, fuel tank, and operator's station clean.

Temperature in engine compartment may go up immediately after engine is stopped. BE ON GUARD FOR FIRES DURING THIS PERIOD.

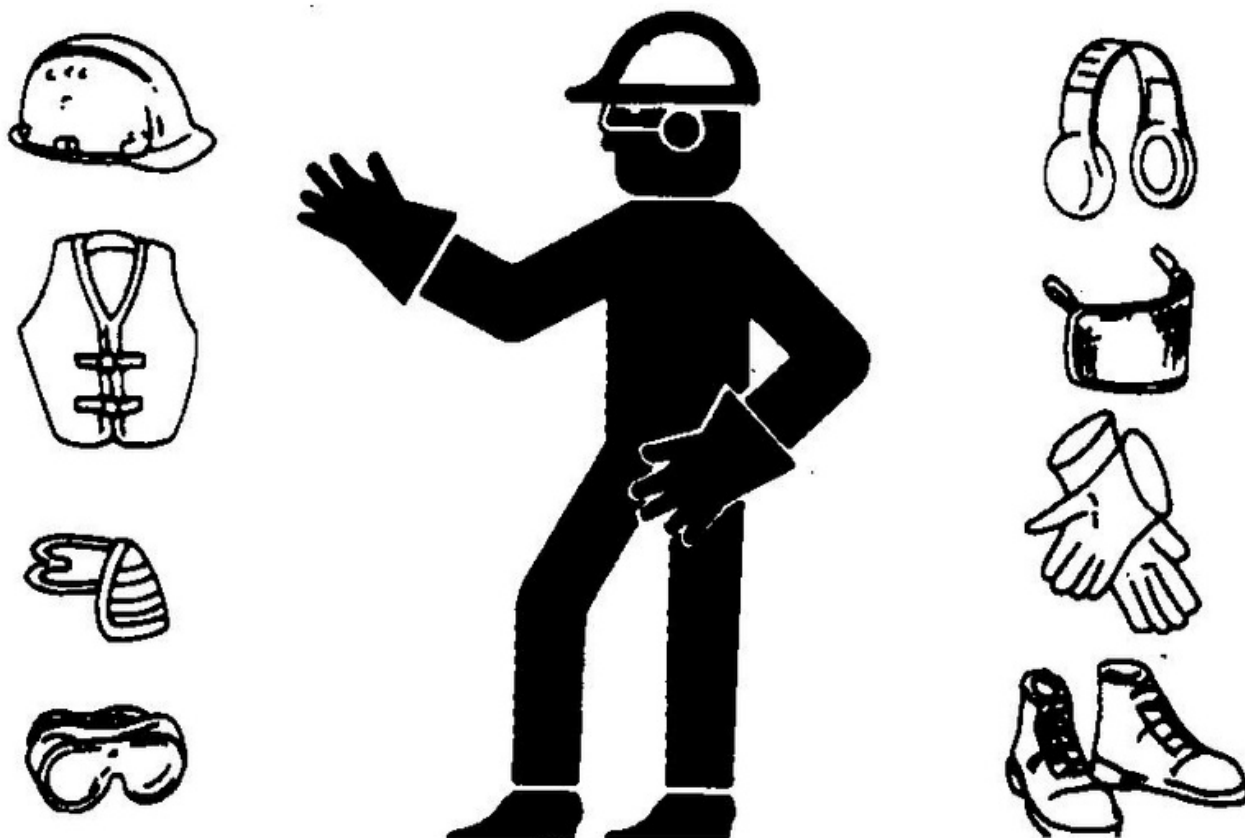
Open access door(s) to cool the engine faster, and clean engine compartment.

Protect Against Flying Debris

***Protect Against Flying Debris***

When you drive connecting pins in or out, guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

Wear Protective Clothing



Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

Protect Against Noise



Noise Exposure

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Handle Chemical Products Safely



Material Safety Data Sheet

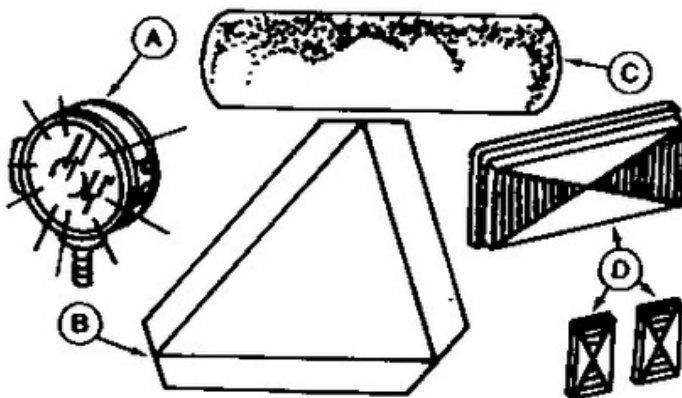
Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)

Use Safety Lights and Devices



LEGEND:

A Lights

B Slow Moving Vehicle Emblem

C Reflector Tape

D Reflectors

Use Safety Lights and Devices

Operators of machines that travel below normal highway speeds should take special precautions to avoid collision with other vehicles.

Before driving on public roads, check state and local laws that may apply to tractors, self-propelled machines, and towed equipment. Additional lights, mirrors, SMV emblems, or reflectors may be required.

Install and use all safety lights and devices necessary to assure safe operation and local compliance. Keep these safety items in good condition. Replace missing or damaged parts immediately.

Keep ROPS Installed Properly

A damaged roll-over protective structure (ROPS) should be replaced, not reused.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting.

If ROPS was loosened or removed for any reason, inspect it carefully before operating the machine again.

To maintain the ROPS:

Replace missing hardware using correct grade hardware.

Check hardware torque.

Check isolation mounts for damage, looseness or wear; replace them if necessary.

- Check ROPS for cracks or physical damage.

Keep the Operator Protective Structure (OPS) in Place

It is important to keep the operator protective structure (OPS) in place (doors, screens, windows, windshield, etc.) to minimize hazards from whipping or intruding objects. To maintain OPS protection, replace damaged parts immediately.

Replace 3-piece hard-coated polycarbonate windshield with only Lexan™ Margard 5000 or equivalent.

The protection offered by OPS will be impaired if OPS is subjected to structural damage, is involved in an overturn incident, or is altered by welding, bending, drilling, or cutting. Damaged OPS components should be replaced, not reused.

Keep all bolts and attaching hardware tight.

Lock Machine Frame



LEGEND:

A Frame Locking Bar

Frame Locking Bar

Connect frame locking bar (A) to both frames before service work is done in the frame pivot area.

Warn Others of Service Work



Warn Others of Service Work

Unexpected machine movement can cause serious injury.

Before performing any work on the machine, attach a "DO NOT OPERATE" tag to the steering wheel.

Practice Safe Maintenance



Keep Area Clean

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Support Machine Properly

**Support Properly**

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.

Remove Paint Before Welding or Heating**Toxic Fumes**

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.

If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.

- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

Avoid Heating Near Pressurized Fluid Lines



Flammable Spray

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

Avoid High-Pressure Fluids



High Pressure

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

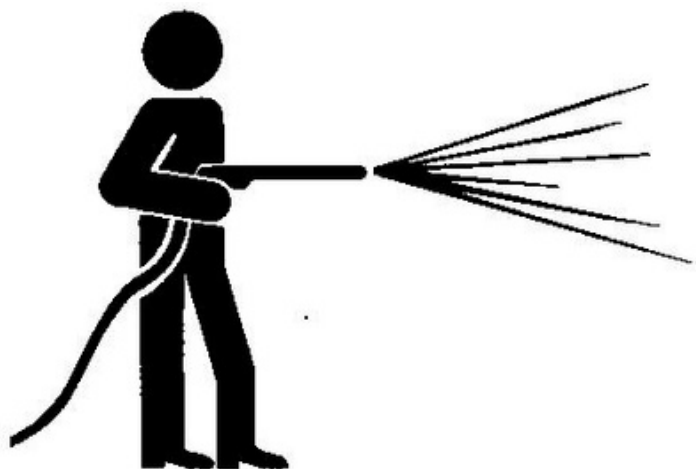
Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

Clean the Machine Regularly



Clean the Machine Regularly

Remove any grease, oil, fuel, or debris build-up to avoid possible injury or machine damage.

High pressure washing [greater than 1379 kPa (13.8 bar) (200 psi)] can damage freshly painted finishes. Paint should be allowed to air dry for 30 days minimum after receipt of machine before cleaning with high pressure. Use low pressure wash operations until 30 days have elapsed.

Do not spray oil cooler fins at an angle. Fins may bend.

Service Cooling System Safely



Cooling System

Explosive release of fluids from pressurized cooling system can cause serious burns.

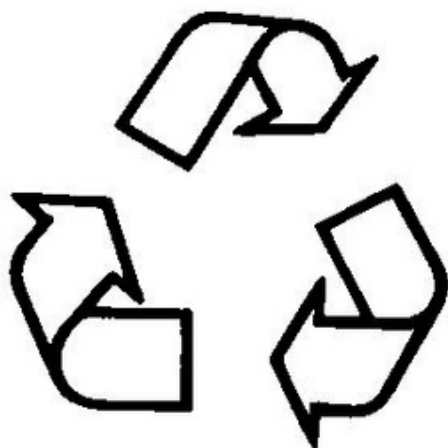
Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

Store Attachments Safely

**Stored Attachments**

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.

Dispose of Waste Properly**Recycle Waste**

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

Live With Safety

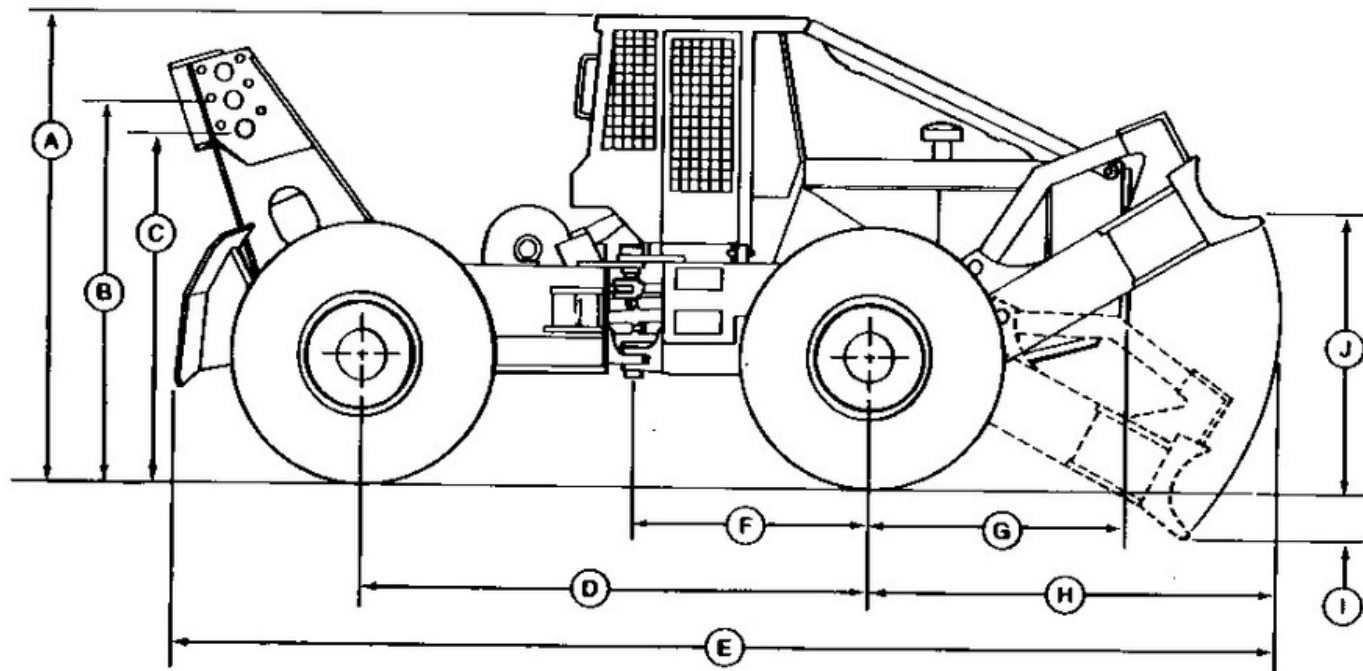


Safety Systems

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

Group 02 - General Specifications

540G-III Skidder Dimensions



540G-III Skidder

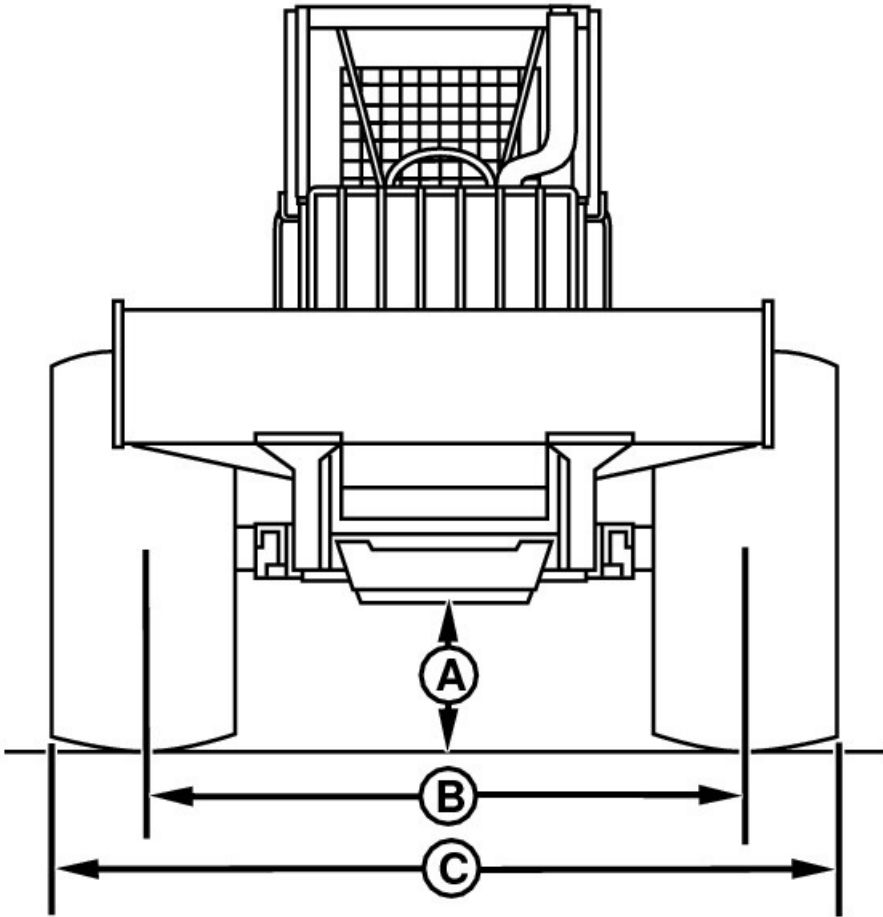
→NOTE:

Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ICED and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

→NOTE:

Side view dimensions are for machine equipped with 28L-26 10 PR LS2 tires and adjustable log arch.

Item	Measurement	Specification
A—Overall Height	Height	3011 mm (9 ft 10.5 in.)
A—Overall Height with Factory-Installed Water Tank	Height	3171 mm (10 ft 4.8 in.)
B—Main Fairlead Roller Height	Height	2110 mm (6 ft 11.1 in.)
C—Auxiliary Position Fairlead Roller Height	Height	1925 mm (6 ft 3.8 in.)
D—Wheelbase	Length	2920 mm (9 ft 7 in.)
E—Overall Length	Length	6330 mm (20 ft 9 in.)
F—Front Axle to Articulation Joint	Distance	1575 mm (5 ft 2 in.)
G—Front Axle to Front of Machine	Distance	1507 mm (4 ft 11 in.)
H—Front Axle To Blade Cutting Edge Arc	Distance	2112 mm (6 ft 11.1 in.)
I—Maximum Blade Dig Below Ground	Depth	288 mm (11.3 in.)
J—Maximum Blade Lift Above Ground	Height	1220 mm (3 ft 11.6 in.)



T130442

G-III Skidder—Front View

Item	Measurement	Specification
Tire—23.1-26	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.21 m (7 ft 3 in.)
	Overall Width	2.79 m (9 ft 2 in.)
Tire—28L-26	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.28 m (7 ft 6 in.)
	Overall Width	3 m (9 ft 10 in.)
Tire—24.5-32	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.38 m (7 ft 9.5 in.)
	Overall Width	3.00 m (9 ft 10 in.)
Tire—23.1-26 (Narrow Gauge)	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.06 m (6 ft 9 in.)
	Overall Width	2.64 m (8 ft 8 in.)
Tire—28L-26 (Narrow Gauge)	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.18 m (7 ft 2 in.)
	Overall Width	2.9 m (9 ft 6 in.)
Tire—24.5-32 (Narrow Gauge)	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.15 m (7 ft 0.5 in.)
	Overall Width	2.77 m (9 ft 1 in.)

540G-III Skidder Specifications

Engine

ENGINE: The 6.8 liter engine is engineered and manufactured by John Deere. Replaceable wet-type cylinder liners provide superior heat dissipation. High strength alloy cylinder heads have replaceable valve seat inserts for longer service life. Cast aluminum pistons provide good heat transfer while pistons are sprayed with cooling oil for longer engine life. A high efficiency turbocharger maximizes engine performance.

Item Measurement Specification

John Deere 6068T with Altitude-Compensating, Spark-Arresting Turbocharger

Rated Power @ 2200 rpm	Power	89 kW (119 SAE net hp)
		95 kW (127 SAE gross hp)
Displacement	Volume	6.8 L (414 cu in.)
Cylinders	Quantity	6
Fuel Consumption, Typical	Consumption	14–21 L/hr (3.7–5.5 gph)
Maximum Net Torque Rise	Torque	39% @ 1400 rpm 537 N·m (398 lb-ft)

Electrical System:

Standard Alternator	Amperage	65-amp
Optional Alternator	Amperage	95-amp
Optional Alternator	Amperage	120-amp
Battery	Voltage	Two 12-volt

Operating Weight:

With Standard Equipment	Weight	9933 kg (21,990 lb) approximate
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Transmission, Axle and Brake

TRANSMISSION: The eight forward and seven reverse speed direct drive powershift transmission is engineered and manufactured by John Deere specifically for skidders. The transmission charge pump is externally mounted for ease of service.

AXLES: John Deere Team Mate II axles, 1200 Series, have heavy-duty inboard mounted planetary type gears that distribute shock loads evenly. Hydraulically applied differential lock in both front and rear axles is standard.

BRAKES: Hydraulic annular style wet disk brakes are inboard mounted on both front and rear axles as standard equipment. Completely sealed running in a cooling oil bath, they are self-adjusting, self-equalizing and require no periodic service. A spring applied hydraulically released wet multiple disk parking brake is transmission mounted. It is automatically applied when the engine is off. It can be manually applied by placing the transmission control lever in the park position.

STEERING: A load and speed sensing power steering system provides quick response and power for easy maneuvering for woods operations. The 90° (45° each direction) of frame articulation provides exceptional maneuverability.

HYDRAULICS: An axial piston pressure compensated pump forms the heart of the quick, responsive and powerful hydraulic system. The closed center hydraulic system is separate from the transmission to enhance overall reliability of both systems.

Item Measurement Specification

Steering:

28L-26 Tire Size Turning	Radius	5.51 m (18 ft 1 in.)
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Hydraulics:

Hydraulic Pump @ 2200 rpm, 20 684 kPa (3,000 psi)	Flow Rate	102 L/min (27 gpm)
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Cable Arch:

Horizontal Roller	Diameter	152 mm (6 in.)
Vertical Rollers (Through Hardened Steel)	Diameter	114 mm (4.5 in.)

540G-III Skidder Drain and Refill Capacities

Item

Measurement Specification

Fuel Tank	Capacity	159 L (42 gal) approximate
Cooling System	Capacity	28.4 L (30 qt) approximate
Engine Oil, Including Filter	Capacity	19 L (5 gal) approximate
Transmission Oil	Capacity	29.3 L (7.75 gal) approximate
Differential (Front) Oil—1200 Series <i>IMPORTANT: When operating in steep conditions, add an additional 5.7 L (6 qt) of oil to front axle. Do not remove check plug before filling 1200 or 1400 front axle.</i>	Capacity	17.9 L (18.9 qt) approximate
Differential (Rear) Oil—1200 Series	Capacity	24.6 L (26 qt) approximate
Winch Oil—4000 Series	Capacity	35.2 L (9.3 gal) approximate
Hydraulic Reservoir Oil	Capacity	30.3 L (8 gal) approximate
Cab Hydraulic Pump System Oil	Capacity	2 L (2 qt) approximate

4000 Series Winch Specifications—540G-III

Winch—4000 Series

WINCH—4000 SERIES: The direct drive 4000 winch with wet multiple disk clutch and spring applied, hydraulically released brake is John Deere engineered and manufactured. Low friction drum seals and an adjustable free spool feature increase operating ease. It is controlled by a single lever that has been conveniently located for the operator.

Item Measurement Specification

8-in. Drum—15.8 mm (0.625 in.) CableCapacity77.4 m (254 ft) approximate

8-in. Drum—19.1 mm (0.75 in.) CableCapacity54.6 m (179 ft) approximate

8-in. Drum—22.2 mm (0.875 in.) CableCapacity39.3 m (129 ft) approximate

8-in. Drum—25.4 mm (1.0 in.) CableCapacity30.5 m (100 ft) approximate

10-in. Drum—15.8 mm (0.625 in.) CableCapacity60.6 m (199 ft) approximate

10-in. Drum—19.1 mm (0.75 in.) CableCapacity43 m (141 ft) approximate

10-in. Drum—22.2 mm (0.875 in.) CableCapacity30.8 m (101 ft) approximate

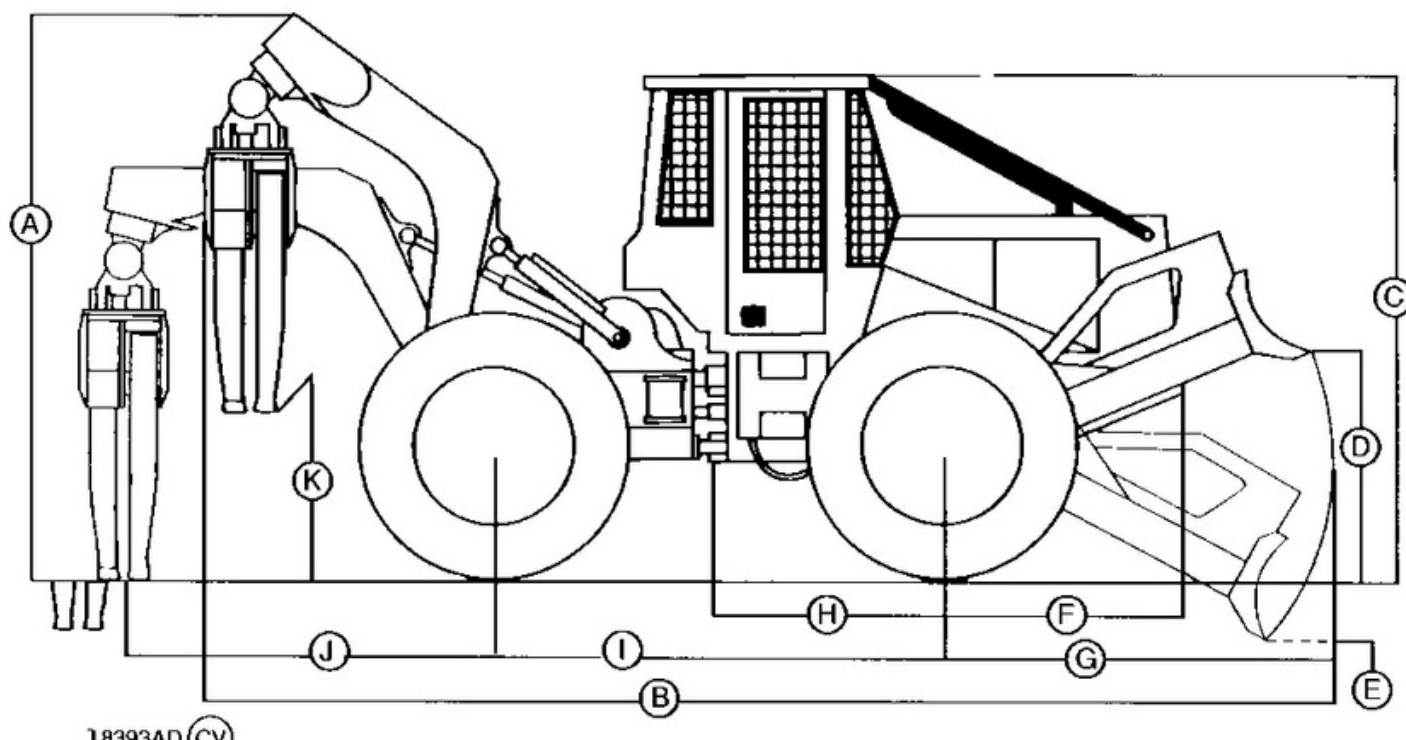
10-in. Drum—25.4 mm (1.0 in.) CableCapacity23.8 m (78 ft) approximate

→NOTE:

Cable capacity is calculated with no allowance made for loose or uneven spooling.

Item	Measurement	Specification
Linepull @ Peak Engine and 15.8 mm (0.625 in.) Cable		
Bare Drum—4000 (8-in. Drum—High Speed)	Force	155 kN (34,786 lb)
Bare Drum—4000 (8-in. Drum—Standard Speed)	e	180 kN (40,525 lb)
Bare Drum—4000 (10-in. Drum)	Force	147 kN (32,985 lb)
Full Drum—4000 (8-in. Drum—High Speed)	e	95 kN (21,437 lb)
Full Drum—4000 (8-in. Drum—Standard Speed)	Force	111 kN (24,974 lb)
Full Drum—4000 (10-in. Drum)	e	111 kN (24,974 lb)
Line Speed @ 2,200 and 15.8 mm (0.625 in.) Cable		
Bare Drum—4000 (8-in. Drum—High Speed)	Rate	44.5 m/min (146 fpm)
Bare Drum—4000 (8-in. Drum—Standard Speed)	Rate	40.0 m/min (131 fpm)
Bare Drum—4000 (10-in. Drum)	Rate	47.9 m/min (157 fpm)
Full Drum—4000 (8-in. Drum—High Speed)	Rate	73.8 m/min (242 fpm)
Full Drum—4000 (8-in. Drum—Standard Speed)	Rate	66.4 m/min (218 fpm)
Full Drum—4000 (10-in. Drum)	Rate	63.4 m/min (208 fpm)

548G-III Grapple Skidder Dimensions



548G-III Grapple Skidder

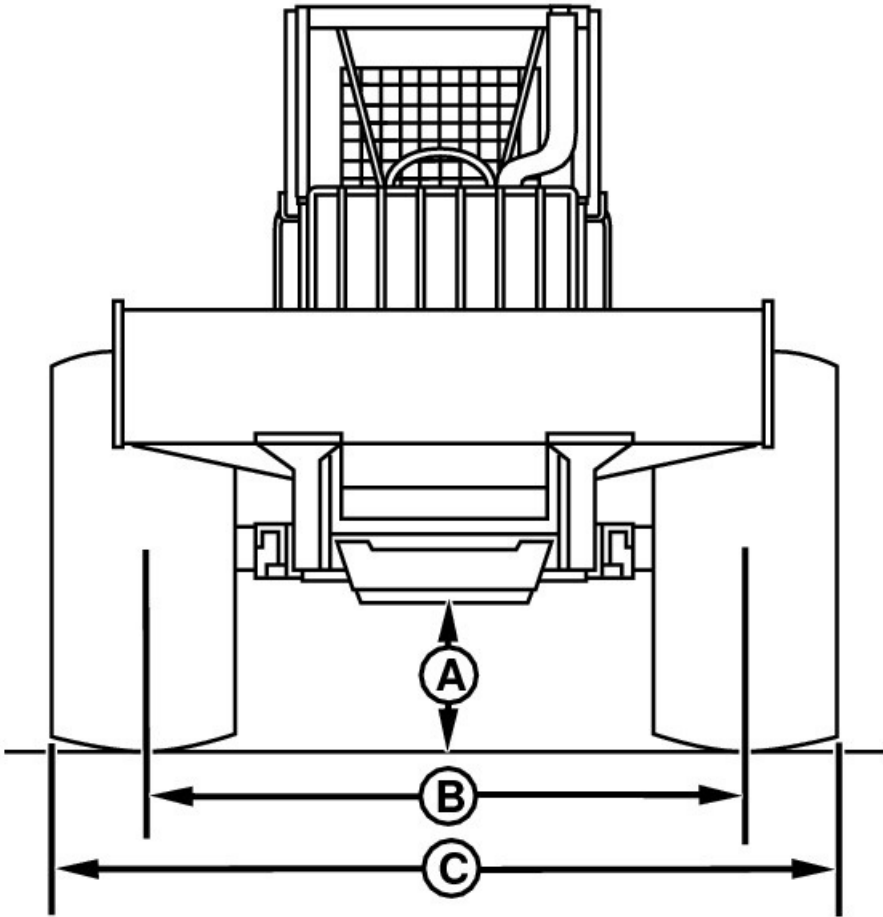
→NOTE:

Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ICED and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

→NOTE:

Side view dimensions are for machine equipped with 28L-26 12 PR LS2 tires and adjustable log arch.

Item	Measurement	Specification
A—Maximum Boom Height	Height	2991 mm (9 ft 10 in.)
B—Overall Length	Length	6330 mm (20 ft 9 in.)
C—Overall Height	Height	3010 mm (9 ft 10.5 in.)
C—Overall Height with Factory-Installed Water Tank	Height	3170 mm (10 ft 4.8 in.)
D—Maximum Blade Lift Above Ground	Height	1210 mm (3 ft 11.6 in.)
E—Maximum Blade Dig Below Ground	Depth	288 mm (11.3 in.)
F—Front Axle to Front of Machine	Distance	1507 mm (4 ft 11 in.)
G—Front Axle To Blade Cutting Edge Arc	Distance	2112 mm (6 ft 11.1 in.)
H—Front Axle to Articulation Joint	Distance	1575 mm (5 ft 2 in.)
I—Wheelbase	Distance	2920 mm (9 ft 7 in.)
J—Reach of Grapple at Ground Level	Distance	1970 mm (6 ft 5.6 in.)
K—Height of Grapple from Ground Level	Height	864 mm (2 ft 10 in.)



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G-III Skidder—Front View

Item	Measurement	Specification
Tire—23.1-26	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.21 m (7 ft 3 in.)
	Overall Width	2.79 m (9 ft 2 in.)
Tire—28L-26	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.29 m (7 ft 6 in.)
	Overall Width	3 m (9 ft 10 in.)
Tire—24.5-32	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.49 m (8 ft 2 in.)
	Overall Width	3.11 m (10 ft 2.5 in.)
Tire—23.1-26 (Narrow Gauge)	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.06 m (6 ft 9 in.)
	Overall Width	2.64 m (8 ft 8 in.)
Tire—28L-26 (Narrow Gauge)	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.18 m (7 ft 2 in.)
	Overall Width	2.9 m (9 ft 6 in.)
Tire—24.5-32 (Narrow Gauge)	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.26 m (7 ft 5 in.)
	Overall Width	2.88 m (9 ft 5.5 in.)

548G-III Grapple Skidder Specifications

Engine

ENGINE: The $\square$ ™ 6.8 liter engine is engineered and manufactured by John Deere. Replaceable wet-type cylinder liners provide superior heat dissipation. High strength alloy cylinder heads have replaceable valve seat inserts for longer service life. Cast aluminum pistons provide good heat transfer while pistons are sprayed with cooling oil for longer engine life. A high efficiency turbocharger maximizes engine performance.

Item Measurement Specification

John Deere $\square$ ™ 6068T with Altitude-Compensating, Spark-Arresting Turbocharger

Rated Power @ 2200 rpm	Power	89 kW (119 SAE net hp)
		95 kW (127 SAE gross hp)
Displacement	Volume	6.8 L (414 cu in.)
Cylinders	Quantity	6
Fuel Consumption, Typical	Consumption	14–21 L/hr (3.7–5.5 gph)
Maximum Net Torque Rise	Torque	39% @ 1400 rpm 537 N ` m (398 lb-ft)

Electrical System:

Standard Alternator	Amperage	65-amp
Optional Alternator	Amperage	95-amp
Optional Alternator	Amperage	120-amp
Battery	Voltage	Two 12-volt

Operating Weight:

With Standard Equipment	Weight	9861 kg (21,740 lb) approximate
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Transmission, Axle and Brake

TRANSMISSION: The eight forward and seven reverse speed direct drive powershift transmission is engineered and manufactured by John Deere specifically for skidders. The transmission charge pump is externally mounted for ease of service.

AXLES: John Deere Team Mate II axles, 1200 Series, have heavy-duty inboard mounted planetary type gears that distribute shock loads evenly. Hydraulically applied differential lock in both front and rear axles is standard.

BRAKES: Hydraulic annular style wet disk brakes are inboard mounted on both front and rear axles as standard equipment. Completely sealed running in a cooling oil bath, they are self-adjusting, self-equalizing and require no periodic service. A spring applied hydraulically released wet multiple disk parking brake is transmission mounted. It is automatically applied when the engine is off. It can be manually applied by placing the transmission control lever in the park position.

STEERING: A load and speed sensing power steering system provides quick response and power for easy maneuvering for woods operations. The 90° (45° each direction) of frame articulation provides exceptional maneuverability.

HYDRAULICS: An axial piston pressure compensated pump forms the heart of the quick, responsive and powerful hydraulic system. The closed center hydraulic system is separate from the transmission to enhance overall reliability of both systems.

Item Measurement Specification

Steering:

28L-26 Tire Size Turning	Radius	5.51 m (18 ft 1 in.)
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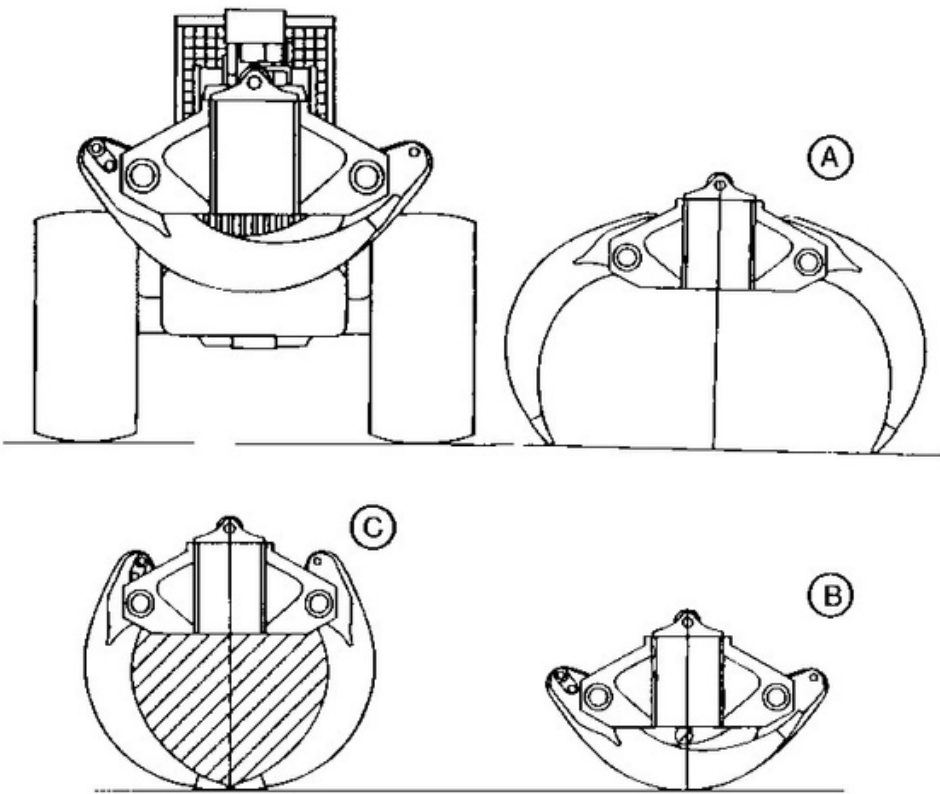
Hydraulics:

Hydraulic Pump @ 2200 rpm, 20 684 kPa (3,000 psi)	Flow Rate	102 L/min (27 gpm)
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Cable Arch:

Horizontal Roller	Diameter	152 mm (6 in.)
Vertical Rollers (Through Hardened Steel)	Diameter	114 mm (4.5 in.)

548G-III Grapple Skidder



Grapple Views

Grapple

GRAPPLE: The grapple has been engineered to provide durability and performance. A grease adjustable oscillation damper improves component life and reduces maintenance requirements. Constant pressure to keep the grapple closed on the load is a standard feature. Grapple shape and clamping force have been engineered to maximize load retention.

Item Measurement Specification

- A—Tong Opening at TipsDistance2160 mm (85 in.)
- B—Minimum Diameter of StemDiameter124 mm (5 in.)
- C—Enclosure Area Tongs Tip-to-TipArea0.75 sq m (8 sq ft)

548G-III Grapple Skidder Drain and Refill Capacities

Item	Measurement Specification
Fuel Tank	Capacity189 L (50 gal) approximate
Cooling System	Capacity28.4 L (30 qt) approximate
Engine Oil, Including Filter	Capacity19 L (5 gal) approximate
Transmission Oil	Capacity29.3 L (7.75 gal) approximate
Differential (Front) Oil—1200 Series	
IMPORTANT: When operating in steep conditions, add an additional 5.7 L (6 qt) of oil to front axle. Do not remove check plug before filling 1200 or 1400 front axle.	
Differential (Rear) Oil—1200 Series	Capacity17.9 L (18.9 qt) approximate
Winch Oil—4000 Series	Capacity24.6 L (26 qt) approximate
Hydraulic Reservoir Oil	Capacity35.2 L (9.3 gal) approximate
Cab Hydraulic Pump System Oil	Capacity30.3 L (8 gal) approximate
	Capacity2 L (2 qt) approximate

4000 Series Winch Specifications—548G-III

Winch—4000 Series

WINCH—4000 SERIES: The direct drive 4000 winch with wet multiple disk clutch and spring applied, hydraulically released brake is John Deere engineered and manufactured. Low friction drum seals and an adjustable free spool feature increase operating ease. It is controlled by a single lever that has been conveniently located for the operator.

Item Measurement Specification

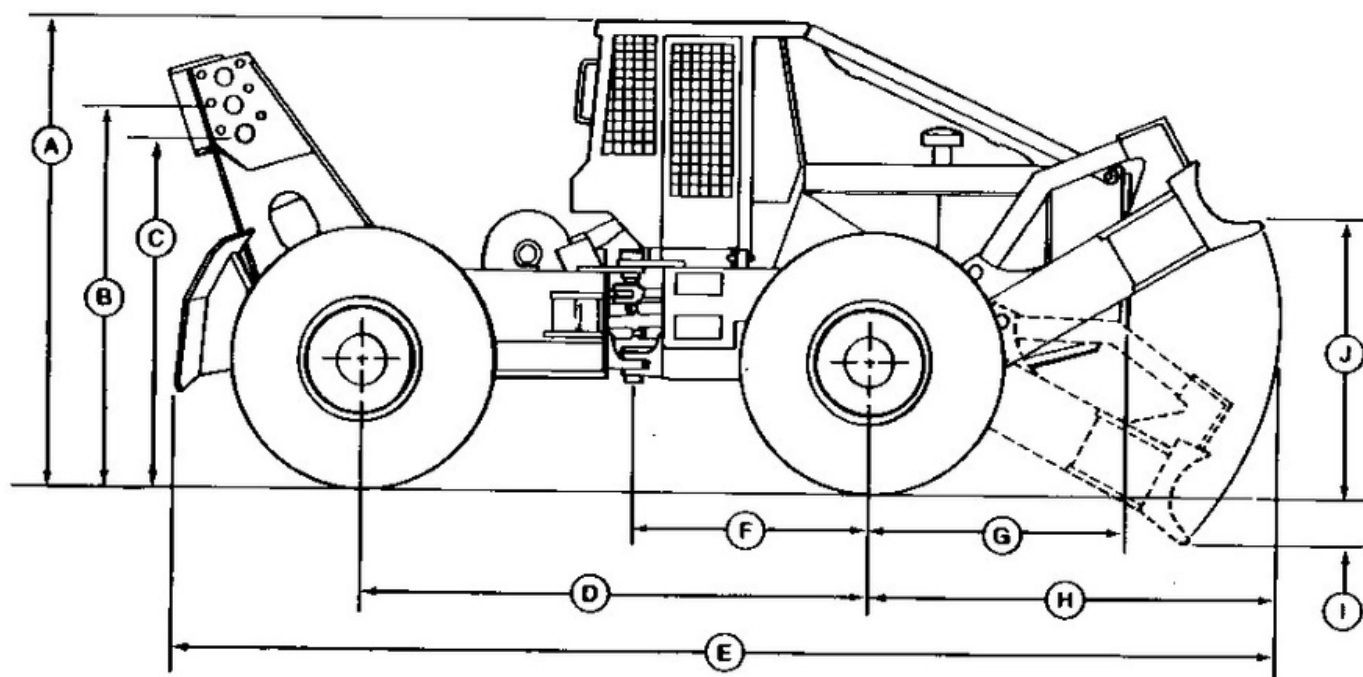
8-in. Drum—15.8 mm (0.625 in.) CableCapacity77.4 m (254 ft) approximate
 8-in. Drum—19.1 mm (0.75 in.) CableCapacity54.6 m (179 ft) approximate
 8-in. Drum—22.2 mm (0.875 in.) CableCapacity39.3 m (129 ft) approximate
 8-in. Drum—25.4 mm (1.0 in.) CableCapacity30.5 m (100 ft) approximate
 10-in. Drum—15.8 mm (0.625 in.) CableCapacity60.6 m (199 ft) approximate
 10-in. Drum—19.1 mm (0.75 in.) CableCapacity43 m (141 ft) approximate
 10-in. Drum—22.2 mm (0.875 in.) CableCapacity30.8 m (101 ft) approximate
 10-in. Drum—25.4 mm (1.0 in.) CableCapacity23.8 m (78 ft) approximate

→NOTE:

Cable capacity is calculated with no allowance made for loose or uneven spooling.

Item	Measurement	Specification
Linepull @ Peak Engine and 15.8 mm (0.625 in.) Cable		
Bare Drum—4000 (8-in. Drum—High Speed)	Force	155 kN (34,786 lb)
Bare Drum—4000 (8-in. Drum—Standard Speed)	e	180 kN (40,525 lb)
Bare Drum—4000 (10-in. Drum)	Force	147 kN (32,985 lb)
Full Drum—4000 (8-in. Drum—High Speed)	e	95 kN (21,437 lb)
Full Drum—4000 (8-in. Drum—Standard Speed)	Force	111 kN (24,974 lb)
Full Drum—4000 (10-in. Drum)	e	111 kN (24,974 lb)
Line Speed @ 2,200 and 15.8 mm (0.625 in.) Cable		
Bare Drum—4000 (8-in. Drum—High Speed)	Rate	44.5 m/min (146 fpm)
Bare Drum—4000 (8-in. Drum—Standard Speed)	Rate	40.0 m/min (131 fpm)
Bare Drum—4000 (10-in. Drum)	Rate	47.9 m/min (157 fpm)
Full Drum—4000 (8-in. Drum—High Speed)	Rate	73.8 m/min (242 fpm)
Full Drum—4000 (8-in. Drum—Standard Speed)	Rate	66.4 m/min (218 fpm)
Full Drum—4000 (10-in. Drum)	Rate	63.4 m/min (208 fpm)

640G-III—Cable Skidder Dimensions



Cable Skidder Dimensions—Side View

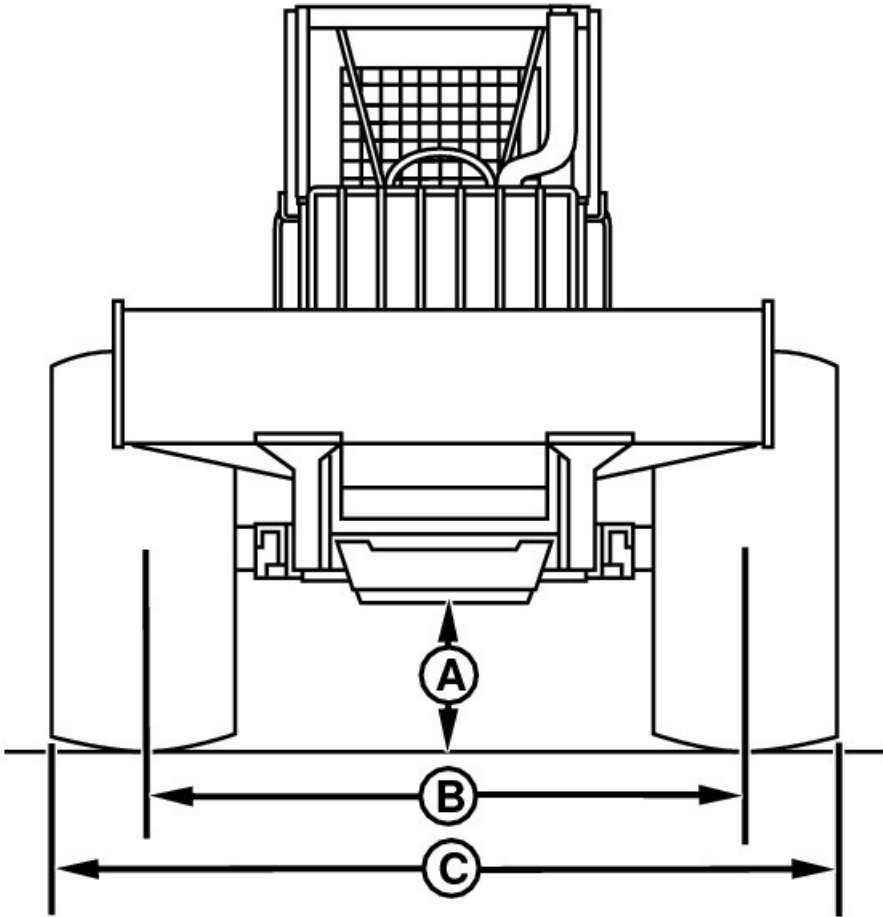
→NOTE:

Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ICED and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

→NOTE:

Side view dimensions are for machine equipped with 28L-26 10 PR LS2 tires and adjustable log arch.

Item	Measurement	Specification
A—Overall Height	Height	3023 mm (9 ft 11 in.)
A—Overall Height with Factory-Installed Water Tank	Height	3183 mm (10 ft 5.3 in.)
B—Main Fairlead Roller Height	Height	2110 mm (6 ft 11.1 in.)
C—Auxiliary Position Fairlead Roller Height	Height	1925 mm (6 ft 3.8 in.)
D—Wheelbase	Length	3430 mm (11 ft 3 in.)
E—Overall Length	Length	7230 mm (23 ft 8.6 in.)
F—Front Axle-to-Articulation Joint	Distance	1727 mm (5 ft 8 in.)
G—Front Axle-to-Front of Machine	Distance	1685 mm (5 ft 6.3 in.)
H—Front Axle-to-Blade Cutting Edge Arc	Distance	2292 mm (7 ft 6 in.)
I—Maximum Blade Dig Below Ground	Depth	367 mm (14.5 in.)
J—Maximum Blade Lift Above Ground	Height	1308 mm (4 ft 3.5 in.)



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Skidder Dimensions—Front View

Item	Measurement	Specification
Tire—23.1-26	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.21 m (7 ft 3 in.)
	Overall Width	2.79 m (9 ft 2 in.)
Tire—28L-26	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.28 m (7 ft 6 in.)
	Overall Width	3 m (9 ft 10 in.)
Tire—24.5-32	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.38 m (7 ft 9.5 in.)
	Overall Width	3 m (9 ft 10 in.)
Tire—30.5-32	Ground Clearance	615 mm (24.2 in.)
	Wheel Tread	2.35 m (7 ft 8.5 in.)
	Overall Width	3.12 m (10 ft 3 in.)
Tire—23.1-26 (Narrow Gauge)	Ground Clearance	498 mm (19.6 in.)
	Wheel Tread	2.06 m (6 ft 9 in.)
	Overall Width	2.64 m (8 ft 8 in.)
Tire—28L-26 (Narrow Gauge)	Ground Clearance	514 mm (20.2 in.)
	Wheel Tread	2.18 m (7 ft 2 in.)
	Overall Width	2.9 m (9 ft 6 in.)
Tire—24.5-32 (Narrow Gauge)	Ground Clearance	598 mm (23.5 in.)
	Wheel Tread	2.15 m (7 ft 0.5 in.)
	Overall Width	2.77 m (9 ft 1 in.)