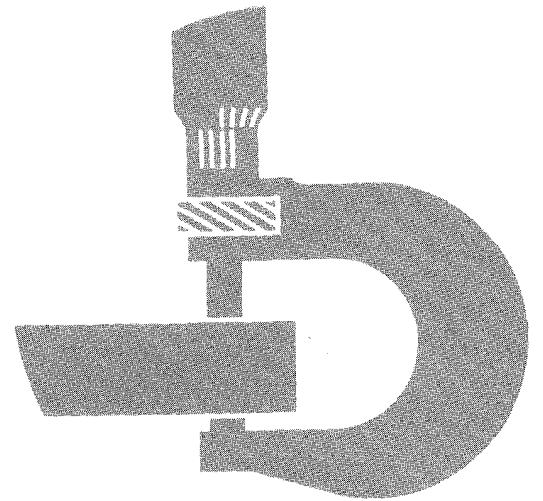


70
Excavator
Repair
Operation and Tests



TECHNICAL MANUAL

TM1376 (20MAR90)

Litho in U.S.A.

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- Group 9900—Dealer Fabricated Tools

HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



TS227 -JUN-23AUG88

O53,FLAME -19-26JAN90

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



TS204 -JUN-23AUG88

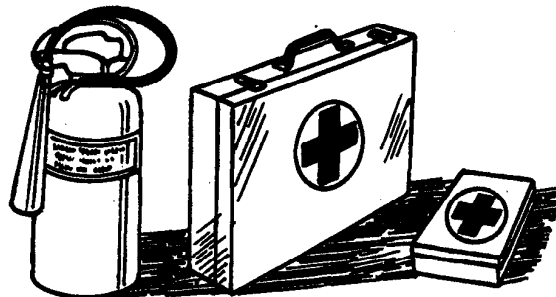
O53,SPARKS -19-26JAN90

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291 -JUN-23AUG88

O53,FIRE2 -19-26JAN90

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

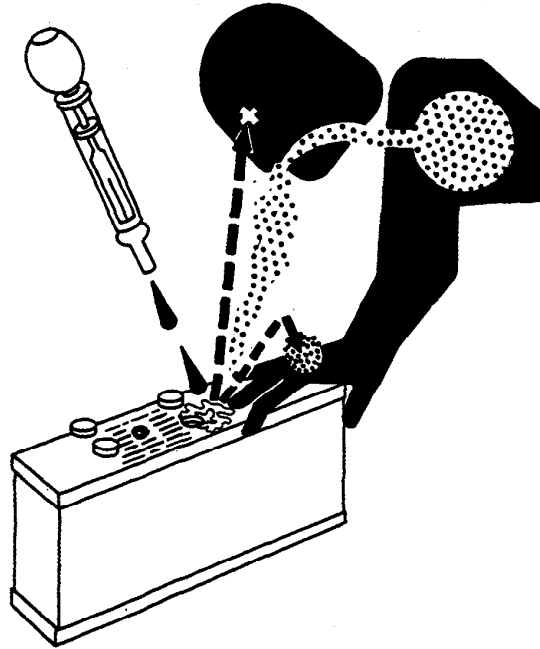
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10—15 minutes. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



-JUN-25AUC88

TS203

AVOID HIGH-PRESSURE FLUIDS

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 may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



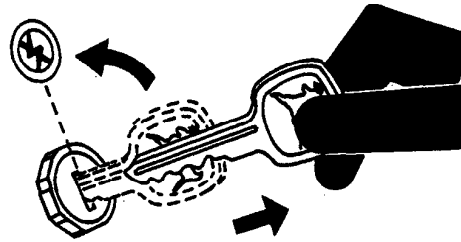
X9811 -UN-23AUG88

O53,FLUID -19-26JAN90

PARK MACHINE SAFELY

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



TS230 -UN-24MAY89

O53,PARK -19-26JAN90

**Thank you very much
for your reading. Please
Click Here Then Get
More Information.**

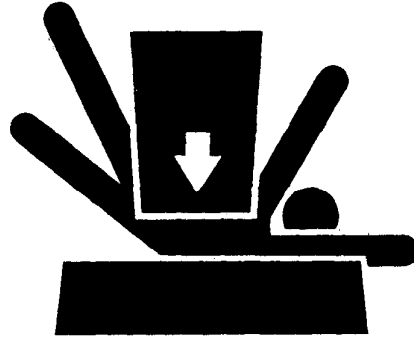
NOTE:

**If there is no response to
click on the link above,
please download the PDF
document first and then
click on it.**

SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

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.



-JUN-23AUG88

TS229

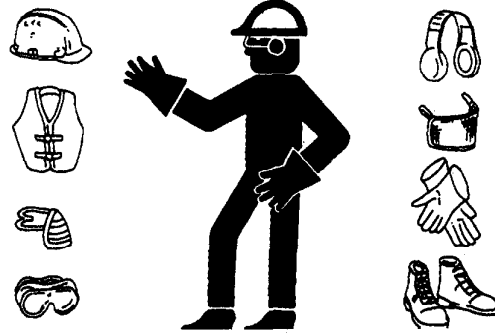
O53,LOWER -19-26JAN90

WEAR PROTECTIVE CLOTHING

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

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.



-JUN-23AUG88

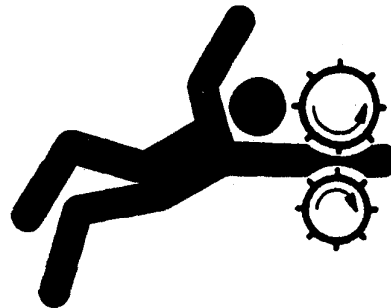
TS206

O53,WEAR -19-26JAN90

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



-JUN-23AUG88

TS228

O53,LOOSE -19-26JAN90

Safety

WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



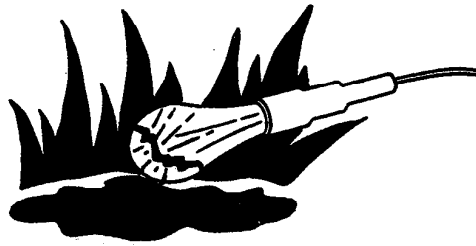
O53,AIR -19-26JAN90

TS220 -JUN-23AUG88

UNDERSTAND CORRECT SERVICE

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

Catch draining fuel, oil, or other fluids in suitable containers. Do not use food or beverage containers that may mislead someone into drinking from them. Wipe up spills at once.



O53,LIGHT -19-26JAN90

TS223 -JUN-23AUG88

REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



O53,SIGNS1 -19-26JAN90

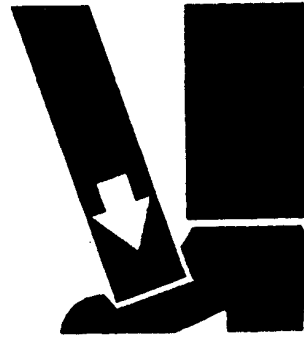
TS201 -JUN-23AUG88

Safety

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



O53,LIFT -19-26JAN90

TS226 -JUN-23AUG88

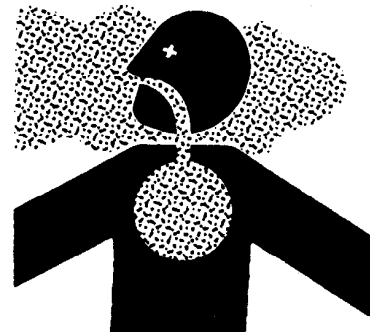
AVOID HARMFUL ASBESTOS DUST

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in John Deere products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding of asbestos containing materials. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, wet the asbestos containing materials with a mist of oil or water.

Keep bystanders away from the area.



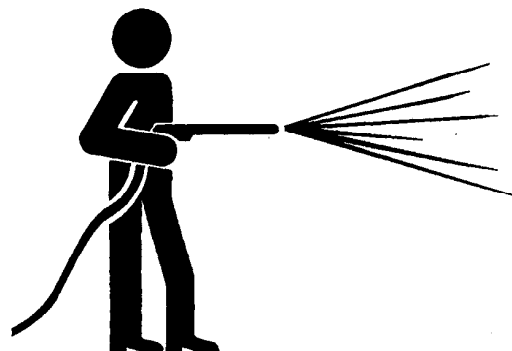
O53,DUST -19-26JAN90

TS220 -JUN-23AUG88

WORK IN CLEAN AREA

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



O53,CLEAN -19-26JAN90

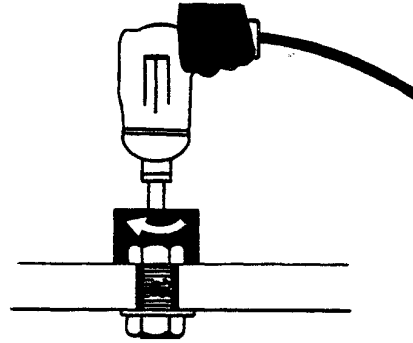
T6642EJ -JUN-18OCT88

USE TOOLS PROPERLY

Use tools appropriate to the work. Makeshift tools, parts, and procedures will not make good repairs.

Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use such tools to tighten fasteners, especially on light alloy parts.

Use only replacement parts meeting John Deere specifications.



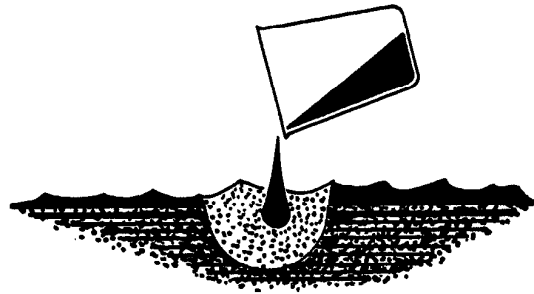
O53,REPAIR -19-26JAN90

TS221 -UN-23AUG88

DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

Avoid pouring oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



O53,DRAIN -19-26JAN90

TS222 -UN-23AUG88

LIVE WITH SAFETY

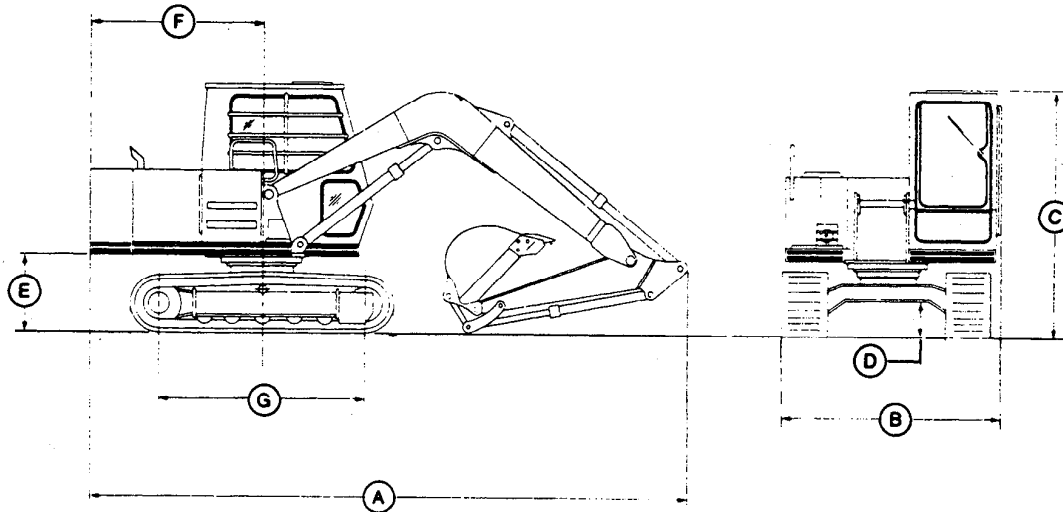
Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



O53,LIVE -19-26JAN90

TS231 -19-07/OCT88

70 EXCAVATOR



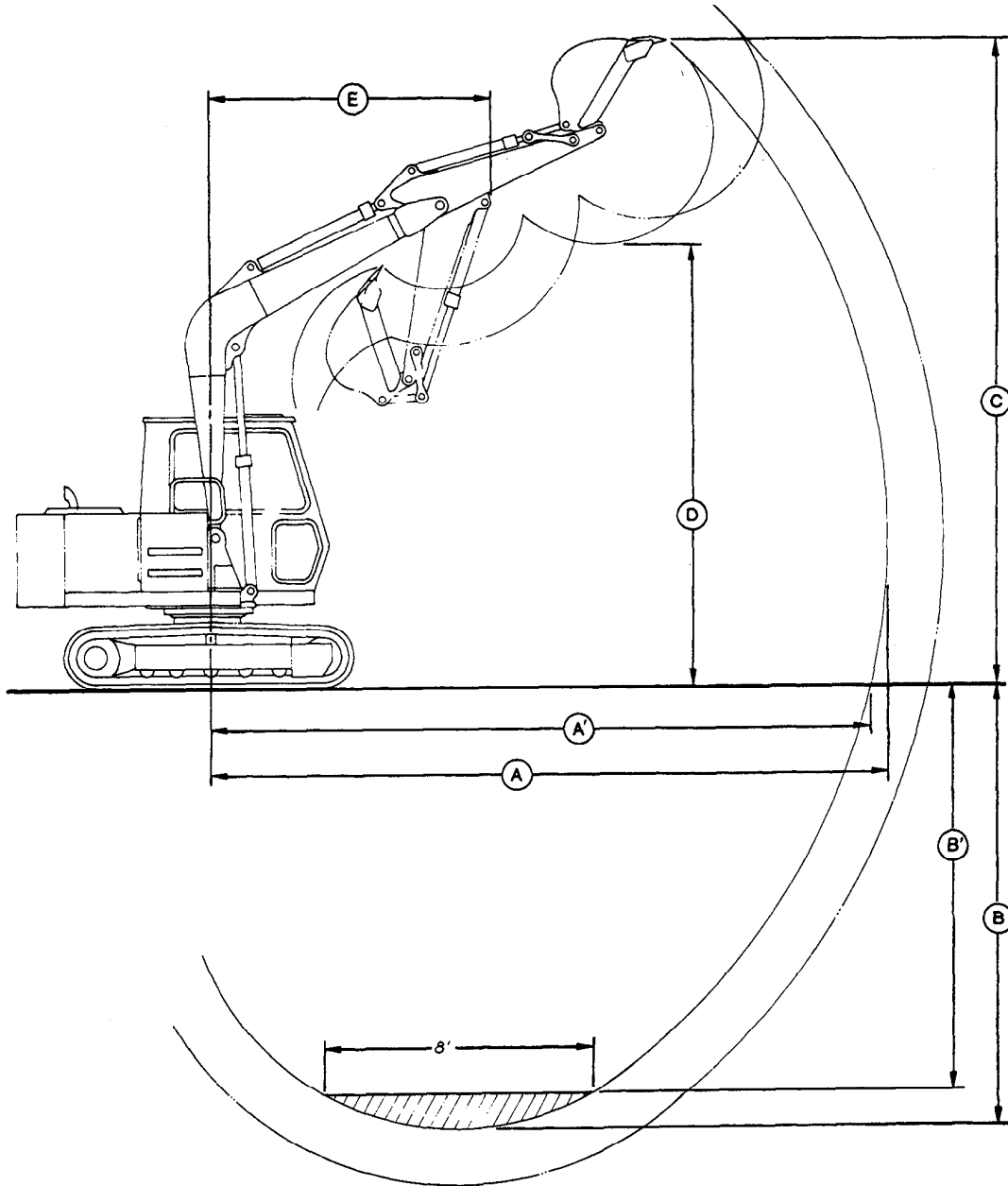
A—Overall length		
1.62 m (5 ft 4 in.) arm	6.02 m (19 ft 9 in.)	
2.12 m (6 ft 11 in.) arm	6.08 m (19 ft 11 in.)	
B—Overall width	2.25 m (7 ft 5 in.)	
C—Overall height	2.55 m (8 ft 4 in.)	
D—Minimum ground clearance	380 mm (1 ft 3 in.)	
E—Counterweight clearance	785 mm (2 ft 7 in.)	
F—Rear end swing radius	1.75 m (5 ft 9 in.)	
G—Distance between tumblers	2.06 m (6 ft 9 in.)	
Standard operating weight	6620 kg (14,600 lb)	
Dozer blade (if equipped)		
Height	460 mm (18 in.)	
Width	2.25 m (7 ft 5 in.)	
Depth of blade cut	200 mm (8 in.)	
Maximum blade to ground clearance	300 mm (12 in.)	

DRAIN AND REFILL CAPACITIES

	Metric	U.S.
Fuel tank	120 L	32 gal
Cooling system	11.4 L	12 qt
Engine oil and filter	8.5 L	9 qt
Hydraulic reservoir	60 L	15.8 gal
Swing gear	5 kg	11 lb
Swing gearbox	1.3 L	1.4 qt
Propel drive (each)	3.8 L	1 gal

2TA;T6283BJ 05T;115 C8 140286

WORKING RANGES



2TA;T6283BK 05T;115 C10 070286

Specifications

WORKING RANGES

	Standard Boom		Offset Boom	
	1.62 m (5 ft 4 in.) Arm	2.12 m (6 ft 11 in.) Arm	No Offset	Max. Offset*
A—Maximum digging reach	6240 mm (20 ft 6 in.)	6720 mm (22 ft 1 in.)		
A ¹ —Maximum digging reach (On ground)	6090 mm (20 ft 0 in.)	6580 mm (21 ft 7 in.)	5990 mm (19 ft 8 in.)	5560 mm (18 ft 3 in.)
B—Maximum digging depth	4060 mm (13 ft 4 in.)	4560 mm (15 ft 0 in.)	4090 mm (13 ft 5 in.)	3660 mm (12 ft 0 in.)
B ¹ —Maximum digging depth 2.44 m (8 ft) level	3710 mm (12 ft 2 in.)	4280 mm (14 ft 1 in.)	3710 mm (12 ft 2 in.)	3250 mm (10 ft 8 in.)
C—Maximum cutting height	6510 mm (21 ft 4 in.)	6820 mm (22 ft 5 in.)	6230 mm (20 ft 5 in.)	5830 mm (19 ft 1 in.)
D—Maximum dumping height	4520 mm (14 ft 10 in.)	4830 mm (15 ft 10 in.)	4320 mm (14 ft 2 in.)	3990 mm (13 ft 1 in.)
E—Minimum swing radius	2070 mm (6 ft 9 in.)	2310 mm (7 ft 7 in.)	2510 mm (8 ft 2 in.)	2130 mm (6 ft 11 in.)
Maximum cut outside of track with 450 mm (18 in.) shoes and 0.24 m (0.31 yd) bucket				370 mm left (14.6 in.) 470 mm right (18.5 in.)

**Maximum boom offset: 1.15 m (3 ft 9 in.)*

OST:115 C11 100286

Specifications

Engine: John Deere 4-239D

Type	4 cycle diesel
Bore and stroke	106.5 x 110 mm (4.19 x 4.33 in.)
Number of cylinders	4
Displacement	3.9 L (239 cu in.)
Compression ratio	17.8:1
Maximum net torque @ 1200 rpm	214 N·m (21.8 kg-m) (158 lb-ft)
Lubrication	Pressure system with full-flow filter
Cooling fan	Suction
Air cleaner	Dry
Electrical system	24 volt with alternator
Batteries	Reserve capacity: 65 minutes

Power @ 2150 engine rpm	SAE
Net	41 kW (55 hp)

Hydraulic System:

Open center. Two variable-displacement axial-piston pumps and two control valves (5 and 4 spool) provide independent and combined operation of all functions. The 5-spool control valve has one spool for optional offset boom or an auxiliary attachment.

Main pumps	2 variable-displacement axial-piston
Pressure setting	21 580 kPa (216 bar) (3130 psi)
Maximum oil flow	2 x 93 L/min (2 x 24.6 gpm)
Pilot pump	1 gear type
Pressure setting	2950 kPa (30 bar) (430 psi)
Maximum oil flow	26 L/min (6.8 gpm)

System operating pressure

21 580 kPa (216 bar) (3130 psi)

Relief settings

Boom	23 030 kPa (230 bar) (3340 psi)
Arm	23 030 kPa (230 bar) (3340 psi)
Bucket	23 030 kPa (230 bar) (3340 psi)
Swing	20 610 kPa (206 bar) (2990 psi)
Travel	20 610 kPa (206 bar) (2990 psi)

Oil filtration:
One suction filter
One 10-micron full-flow return filter with bypass

Leveling blade	One gear type
Pressure setting	14 750 kPa (148 bar) (2140 psi)
Maximum oil flow	26 L/min (6.8 gpm)

NOTE: Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE standards. Except where otherwise noted, these specifications are based on a unit equipped with 640 mm (25 in.) bucket, full fuel tank, 80 kg (175 lb) operator and standard equipment.

05T;115 C9 110286

Specifications

LIFT CAPACITY—kg (lb)—STANDARD BOOM AND 1.62 m (5 ft 4 in.) ARM

LIFTING OVER FRONT OR REAR

Load Point Height	Horizontal Distance from Centerline of Rotation				[M] [(ft)]
	1.52 m (5 ft)	3.05 m (10 ft)	4.57 m (15 ft)	Max. Radius	
+3.05 m (+10 ft)			1150 (2540)	770 (1700)	[5.80] [(19)]
+1.52 m (+5 ft)		2120 (4670)	1190 (2620)	730 (1600)	[5.95] [(19.5)]
Ground		2120 (4670)	1120 (2470)	770 (1700)	[5.64] [(18.5)]
-1.52 m (-5 ft)	3200 (7060)	2100 (4620)	1100 (2420)	1000 (2200)	[4.73] [(15.5)]
-4.57 m (-15 ft)		2160 (4760)			

LIFTING OVER THE SIDE

+3.05 m (+10 ft)			1150 (2540)	680 (1500)	[5.80] [(19)]
+1.52 m (+5 ft)		1910 (4220)	1010 (2220)	590 (1300)	[5.95] [(19.5)]
Ground		1750 (3860)	940 (2080)	640 (1400)	[5.64] [(18.5)]
-1.52 m (-5 ft)	3200 (7060)	1730 (3820)	920 (2030)	860 (1900)	[4.73] [(15.5)]

Hydraulically limited capacity

05T;115 C7 140286