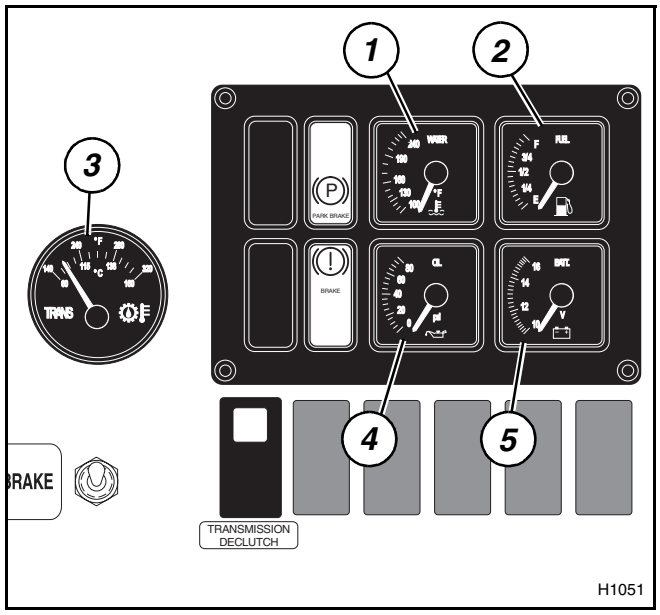
GAUGES



Gauges

Note: *Gauges and indicator lights operate only when the ignition switch is in the ON position.*

(1) **Engine Water Temperature**—Registers from 100 to 240 °F. Normal operating temperature is 180 to 185 °F.

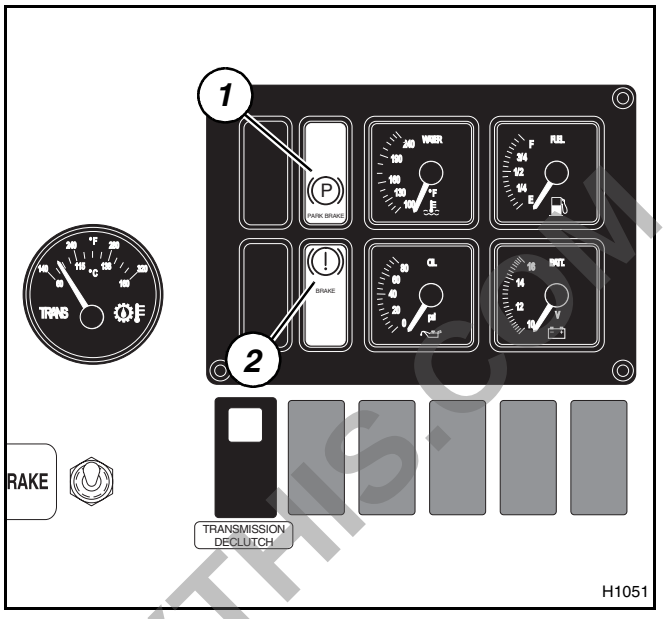
(2) **Fuel Level**—Shows fuel level in fuel tank.

(3) **Transmission Oil Temperature**—Registers from 140 to 320 °F with Celsius equivalents. If the temperature rises above 230 °F (110 °C) stop the vehicle immediately, shift to neutral and run the engine at half throttle. The temperature should drop quickly. If the temperature does not drop, shut off engine and investigate.

(4) **Engine Oil Pressure**—Shows operating engine oil pressure. Gauge registers from 0 to 80 PSI. Normal operating pressure is 55 to 60 PSI.

(5) **Voltmeter**—Indicates system voltage. Gauge registers from 10 to 16 volts. Normal operating voltage range is 14.5 to 15 volts. With ignition in ON position and engine off, battery voltage is indicated. This should normally be 12.6 volts.

INDICATOR LIGHTS



Indicator Lights

(1) **Park Brake**—Red lamp lights to show when parking brake is applied and goes out when parking brake is released.

(2) **Low Brake Pressure**—Red lamp lights and buzzer sounds when service brake hydraulic system pressure drops below the safe operating level. Under normal conditions, the light and buzzer will go out quickly after engine start. If the light or buzzer does not go out or comes on during machine operation, shut off engine immediately, investigate, and repair before operating. Do not operate machine when low brake pressure light or buzzer is on.

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SYSTEM CAPACITIES AND PRESSURES

HYDRAULIC RESERVOIR	33.8 GALS
FUEL TANK	33.8 GALS
COOLING SYSTEM	18 QTS
ENGINE CRANKCASE — CUMMINS 4 CYL.	11.5 QTS
TRANSMISSION — DRAIN/REFILL (APPROX.)	12 QTS
DIFFERENTIAL (EACH)	13.75 QTS (SEE NOTE 1)
PLANETARY HUB (EACH)	34 OZ
90° GEARBOX	80–90 OZ
TEE GEARBOX	80–90 OZ
ACCUMULATOR NITROGEN PRECHARGE	685–715 PSI
TIRES — 13.00 × 24 12-PLY	65 PSI

FLUID & LUBRICANT SPECS.

SYSTEM OR COMPONENT	FLUID OR LUBRICATION	SPECIFICATION
Fuel System	See engine manufacturer's operation manual.	
Hydraulic System	Heavy Duty Hydraulic Fluid	ISO VG 32 MV
Engine Cooling System	See engine manufacturer's operation manual.	
Engine Oil	See engine manufacturer's operation manual.	
Transmission (Clark T12000)	Citgo TRANSGARD™ Tractor Hydraulic Fluid	
Planetary Hub	Gear Lubrication	SAE 80W-90
Differential (Front & Rear)	Gear Lubrication	SAE 80W-90
90° & Tee Gearboxes	Bearing & Gear Lubricant	SAE 80W-90
Grease Points	Grease	Lithium-based

#	DESCRIPTION	DAILY	WEEKLY	HOURS OF OPERATION 250	500	1000	2000	REMARKS
1	ENGINE OIL	C		R				SEE ENGINE MANUAL
2	ENGINE OIL FILTER			R				SEE ENGINE MANUAL
3	FUEL FILTER(S)/WATER SEP.			R				SEE PARTS BOOK
4	TRANSMISSION FLUID	C		*R		R		
5	TRANSMISSION FILTER			*R		R		SEE PARTS BOOK
6	HYD. RESERVOIR FLUID	C					R	
7	HYD. RETURN FILTER	C					R	SEE PARTS BOOK
8	HYD. PRESSURE FILTER					R		SEE PARTS BOOK
9	HYD. TANK BREATHER						R	SEE PARTS BOOK
10	AIR CLEANER	C						SEE PARTS BOOK
11	ENGINE COOLANT	C					R	SEE ENGINE MANUAL
12	AXLE DIFFERENTIAL			*R		R		SEE NOTE 1
13	PLANETARY HUBS			*R		R		SAE 80W-90
14	90° GEARBOX						R	SAE 80W-90
15	TEE GEARBOX						R	SAE 80W-90
16	BOOM PIVOT		LUBE	2 GREASE FITTINGS				
17	BOOM EXTENSION CYLINDER		LUBE	1 GREASE FITTING				
18	HOIST PIVOTS		LUBE	2 GREASE FITTINGS				
19	TILT CYLINDER PIVOTS		LUBE	6 GREASE FITTINGS				
20	QUICK ATTACH PIVOT		LUBE	1 GREASE FITTING				
21	TRANSFER ROLLERS		LUBE	4 GREASE FITTINGS				
22	OSCILLATION PIVOTS		LUBE	4 GREASE FITTINGS				
23	FRAME TILT CYLINDER		LUBE	2 GREASE FITTINGS				
24	AXLE SHAFT KNUCKLES		LUBE	4 GREASE FITTINGS				
25	DRIVE SHAFT U-JOINTS		LUBE	8 GREASE FITTINGS				
26	DRIVE SHAFT SLIP YOKES		LUBE	4 GREASE FITTINGS				
27	CHAIN GUIDES		LUBE	3 GREASE FITTINGS				

NOTES:
1. FOR EACH DIFFERENTIAL, USE 13.75 QTS. SAE 80W-90.

* = FIRST HOURS OF OPERATION
C = CHECK, SERVICE AS NECESSARY
R = REPLACE

SHORTEN SERVICE INTERVALS ACCORDINGLY WHEN OPERATING UNDER DUSTY OR SEVERE CONDITIONS.

INSPECT ALL FLUID SYSTEMS AND CHANGE FLUID WHEN FLUID SHOWS TRACES OF CONTAMINATION OR HIGH TEMPERATURES, EVIDENCED BY STRONG ODOR, DISCOLORATION, OR SEPARATION

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STARTING PROCEDURES

Before operating, walk completely around the machine. Make certain no one is under it, on it or close to it. Let all other workers and bystanders know you are preparing to start the machine. **DO NOT** start machine until everyone is clear.

To start engine...

1. Be properly seated.
2. Set park brake.
3. Move shift selector to NEUTRAL position. Place the neutral lock lever to NEUTRAL LOCK position.
4. Apply brakes.
5. Turn ignition switch clockwise, cranking the engine. (Do not crank the engine longer than 20 seconds. Wait 2 minutes to allow starter to cool down before trying again.)
6. Allow engine to warm up.
7. In cold weather operation, progressively move each function a small distance back and forth until full cycle has been accomplished.

   To make sure warm oil reaches the rear carriage tilt cylinders, slowly raise and lower the boom several times. Failure to cycle the rear carriage tilt cylinders during cold machine start-up can damage the cylinders and structure.
8. Level machine, move frame tilt full to the right, then full to the left, then back to level.
9. Raise boom full up and full down. Extend inner boom full out and retract full in.
10. Tilt attachment full down and full back.
11. Move transfer carriage full forward and full back.

Note: *It is your responsibility to evaluate working conditions and adjust your operation of the forklift accordingly.*

SHUTDOWN PROCEDURES

Correct shutdown is important to the safe operation of the machine.

Always follow these steps:

1. Come to a full stop.
2. Set the park brake.
3. Lower boom to the ground. **DO NOT** leave the operator's compartment while the machine is supporting a load.
4. Place transmission shift selector in NEUTRAL position. Place the neutral lock lever to NEUTRAL LOCK position.
5. Idle engine for 1–3 minutes for gradual cooling. This is especially important for turbocharged engines.
6. Shut off engine.
7. After the engine is shut off, move all hydraulic levers. If any machine movement is detected, a problem **MAY** exist and your supervisor should be advised immediately. **DO NOT** put the machine into service until the problem has been fixed.
8. Remove ignition key.
9. Lock anti-vandalism covers and closures.
10. Dismount.
11. Block wheels if on a slope or incline.

TRAVELING

⚠CAUTION

When traveling over rough terrain, soft ground, or wet/ icy surfaces, slow down and shift to a lower gear.
Travel only at speeds that permit stopping in a safe manner.
When traveling, keep forks as low as possible while maintaining safe clearance with the ground.

- ❑ Start and stop machine to check brakes.
- ❑ Check park brake by holding on hill.
- ❑ Check the three steering modes:
  - ♦ Round
  - ♦ Front Wheel
  - ♦ Oblique

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CAUTION, WARNING, & DANGER: WHAT THEY MEAN

Hazards are identified by the “Safety Alert Symbol” and followed by a signal word: Caution, Warning, or Danger.

⚠CAUTION

CAUTION means that a situation COULD be hazardous and MAY result in personal injury if not avoided.
CAUTION is also used to alert against unsafe practices.

⚠WARNING

WARNING means that a situation COULD be hazardous and MAY result in serious injury or death if not avoided.

⚠DANGER

DANGER means that a situation **IS HAZARDOUS AND WILL** result in serious injury or death if not avoided.

SAFETY STANDARD

The ASME/ANSI B56.6 safety standard for rough terrain forklift trucks defines safety requirements relating to the design, operation, and maintenance of these vehicles. For a copy of this standard write to:

The American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, NY 10017

DECALS

The decals on the machine provide instructions for safe and correct operation.

Never make modifications affecting safe operation or capacity without the expressed written approval of Lull International, Inc.

When Lull approved modifications are made, the user is responsible for seeing that appropriate decals, load charts, and instructions are changed.

All plates and decals must be in place and legible at all times.

ROLL OVER PROTECTIVE STRUCTURE (ROPS) & FALLING OBJECT PROTECTIVE STRUCTURE (FOPS)

This machine is equipped with a Roll-Over Protective Structure (ROPS) to guard the operator if the machine tips over. The Falling Object Protective Structure (FOPS) is built into the ROPS. The FOPS protects the operator from falling objects.

Despite the protection of the ROPS/FOPS, it cannot protect the operator from every possible hazard. Do not consider the ROPS/FOPS a substitute for safe practices and good common sense.

Any modification to a ROPS/FOPS, such as welding or drilling holes in the structural members for mounting brackets, will affect the ROPS/FOPS capability to provide the required protection.

Any modification or repair without the specific written approval of Lull International, Inc. will void the ROPS/FOPS certification. Contact your authorized Lull dealer before making any modifications or repairs. Failure to do so may void the ROPS/FOPS certification.

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INTRODUCTION

You are about to operate one of the finest forklifts available on the market today. To ensure that your forklift will provide years of safe, dependable service, only trained and authorized persons should operate and service the forklift. It is the responsibility of the operator to read, fully understand and follow all operational and safety related instructions contained in this manual. Do not operate the forklift until you have read and fully understand these instructions. Remember, always use good safety practices to protect yourself and those around you.

REGISTRATION

The Warranty Registration card must be filled out by the dealer and returned to the Lull "Warranty Administrator" indicating the date the machine went into service. The Pre-Delivery Inspection Form must be signed by the customer when the machine is delivered.

IMPORTANT

This operators manual must remain with the machine at all times!

Should it become damaged or lost, immediately contact any authorized Lull International, Inc. dealer or contact the Lull Service Parts Department at (651) 686-1270 for replacement.

Lull also recommends that the engine manufacturer's operators manual be kept with the machine. Failure to follow engine manufacturer's recommendations may affect engine warranty.

Lull has made every effort to provide information as complete and accurate as possible for its forklifts. However, because of owner requirements, equipment and control variations may exist between machines. In addition, due to Lull policy of continually striving to improve its products, occasional discrepancies may exist between machines and the descriptions and information contained herein.

Lull International, Inc. reserves the right to make changes and improvements to its products at any time without public notice or obligation. Lull also reserves the right to discontinue manufacturing any product at its discretion at any time.

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