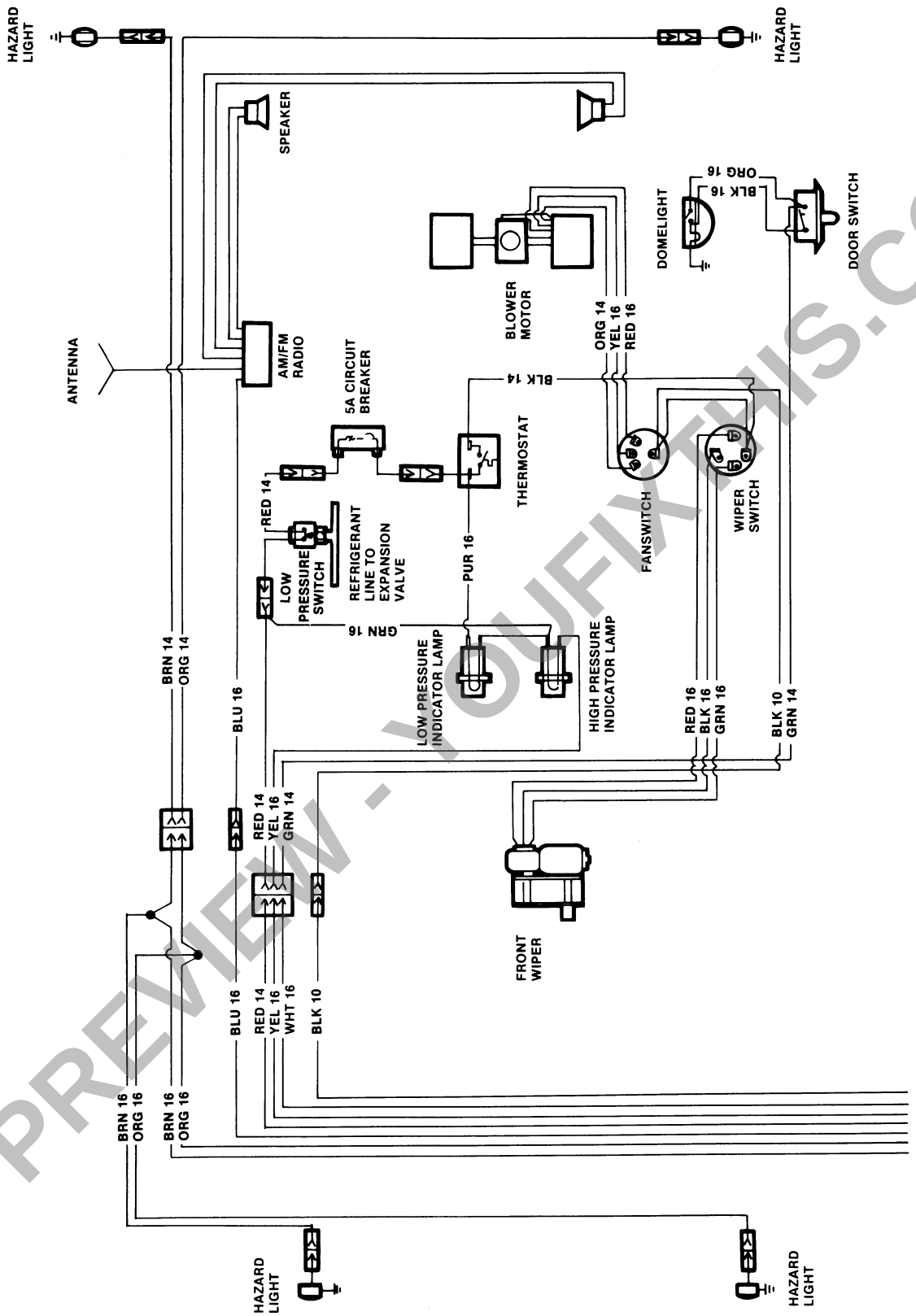

Roof Wiring

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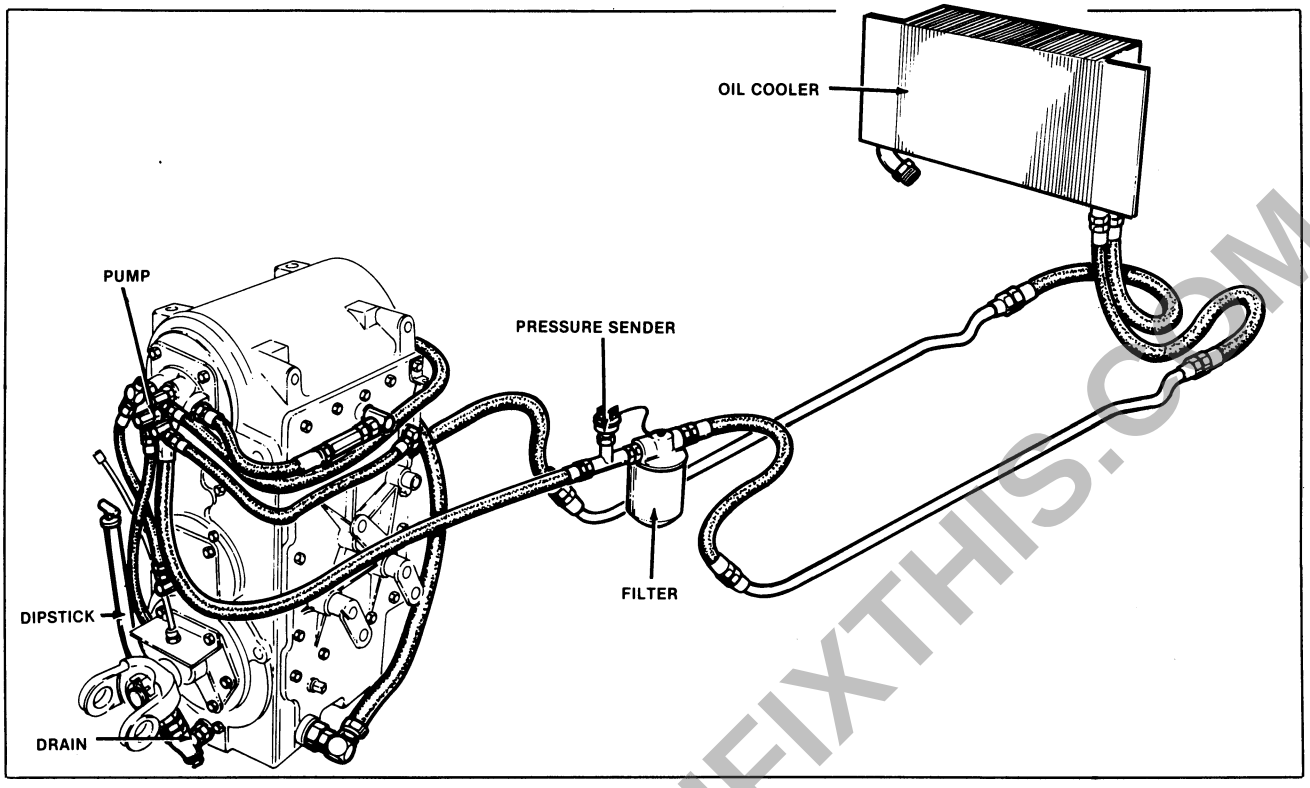
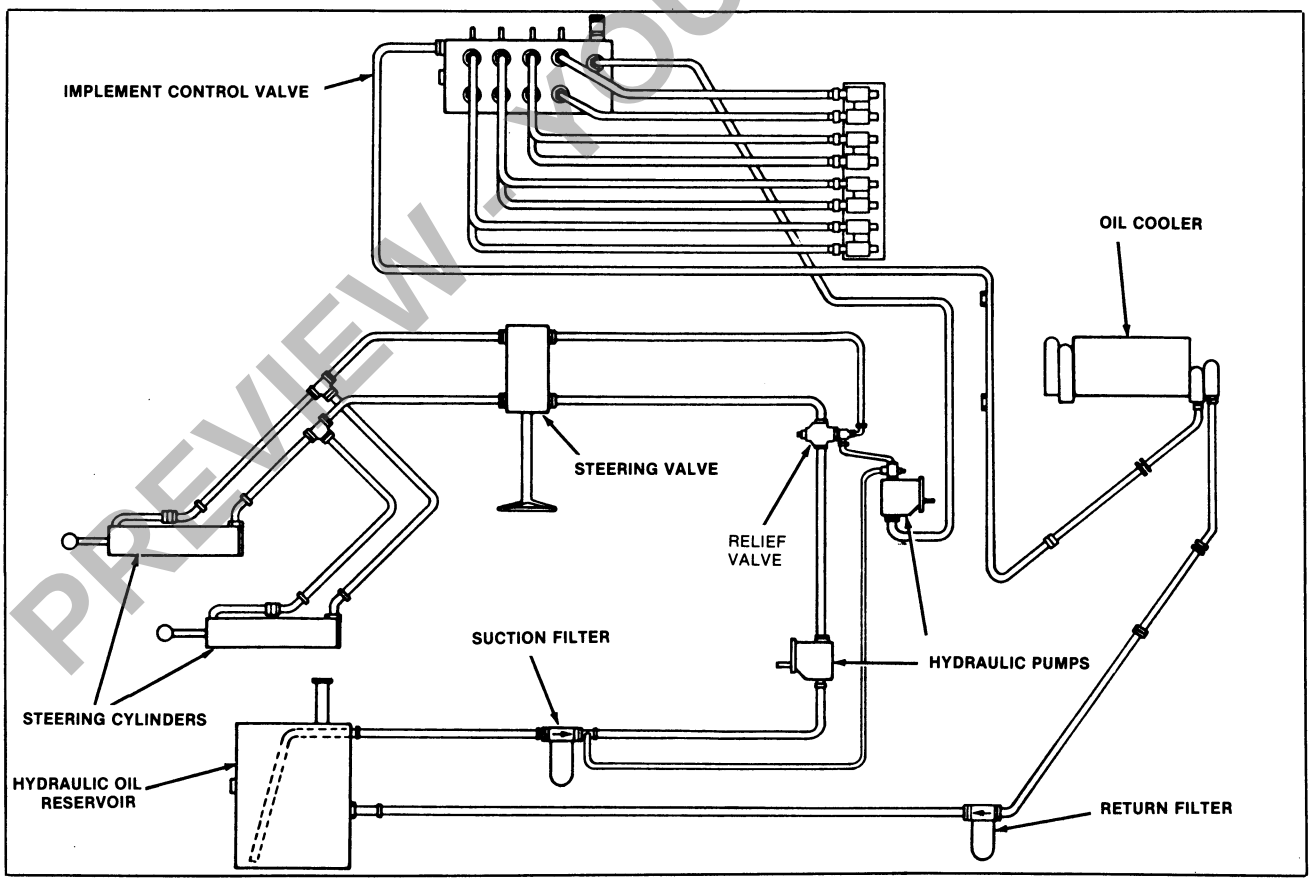


Transmission Lubrication



Steering And Implement Circuit

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AXLES AND DIFFERENTIALS

Oil Capacity (each axle) . . . . . 38.5 L (41 qt US)

Lubrication

Drain planetary and differential oil when hot after the first 30 hours of operation and every 400 hours thereafter. Flush housings before adding new oil.

SAE 80W90 GL5 gear oil is recommended for temperatures below 32° C (90° F).

SAE 85W140 GL5 is recommended for temperatures above 32° C (90° F).

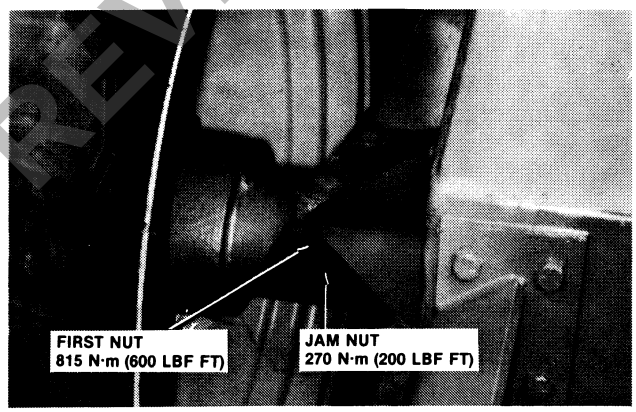
Check planetary and differential oil levels every 50 hours. The planetary level plug must be in the four or eight o'clock position when checking oil level.

Nut and Bolt Torque

Check torque after the first hour of operation and every 200 hours thereafter.

First Nut . . . . . 815 N·m (600 lbf ft)

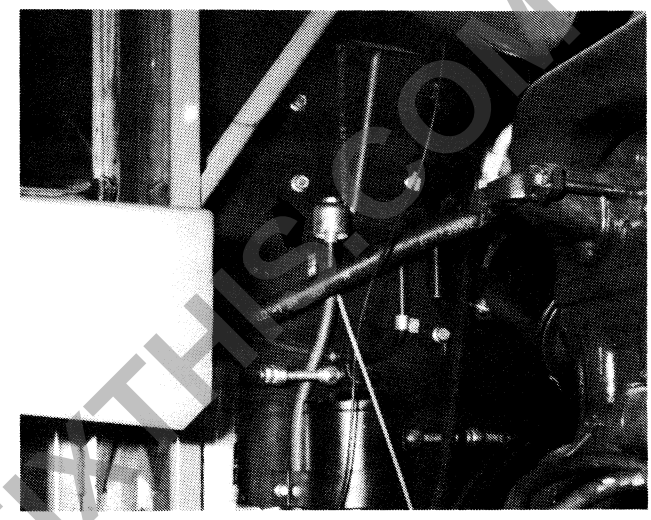
Jam Nut . . . . . 275 N·m (200 lbf ft)



Axle Mounting Bolts

Breathers

Axle breathers are located on the left corner of rear frame and the right side of firewall. Check breather for dirt; plugged breathers will cause seal failures.



Front Axle Breather



Rear Axle Breather

BELTS

Check belt tension and alignment every 50 hours. Replace belts in sets.

Alignment

Check pulley alignment every 50 hours.

1. Put a straight edge between the pulley sides. The straight edge must touch the pulley at four points.

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4. Inspect all belts, lights, switches, hoses, lines, fittings, seals, tires, nuts and bolts for possible failure or looseness.

5. Check three-point hitch for wear especially around metal-to-metal parts.

ENGINE STARTING

IMPORTANT

Protect turbocharger during start-up by not opening throttle or accelerating above 1 000 r/min until normal engine idle speed oil pressure registers on gauge.

1. Fasten seat belt and set parkbrake.
2. Put throttle lever into low (idle) position.

NOTE

Depress clutch pedal when starting engine. A safety switch permits engine starting only when clutch pedal is depressed.

3. Press clutch pedal and put gearshift lever into neutral.
4. Turn keyswitch to START to crank engine.
5. Move throttle lever to keep engine running. Idle speed is 1 000 r/min. Avoid excessive r/min during warm-up.
6. Release clutch. Ensure transmission oil pressure warning light extinguishes within five seconds.
7. Warm engine to about 50° C (120° F) before putting under load.

COLD START (Option)

– CAUTION



ETHER STARTING FLUID IS HIGHLY FLAMMABLE. DO NOT USE NEAR FIRE, SPARKS OR FLAMES. ENSURE ALL OPERATORS READ CAUTIONARY INFORMATION ON CONTAINER.

IMPORTANT

Never use ether when engine is running.

NOTE

Thermoguard prevents ether injection if engine temperature is above 27° C (81° F).

NOTE

The cold start button activates the ether discharge system. Use only when temperatures are lower than 18° C (66° F). Do not hold button for more than two seconds.

1. Fasten seat belt and set parkbrake.
2. Put throttle lever in low (idle).
3. Press clutch pedal and put gearshift lever into neutral.
4. Turn keyswitch ON.
5. Press cold start button for two seconds.
6. Turn keyswitch to START to crank engine.

IMPORTANT

Use only one ether charge per engine crank.

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4 Troubleshooting

Drive Train	Faulty gasket/seal	Linkage maladjusted	Range forks worn	Worn cam follower bearing	Shift rail grooved	Bearing worn	Broken gear	Shift lever tip worn	Worn/broken linkage	Self adjuster seized	Clutch fork slipping/not engaged	Warped/cracked plate or disc	Clutch fork binding	Dry shaft/bearing	Clutch maladjusted	Clutch pads worn	Release sleeve binding	Loose hanger bearing	Damaged driveshaft/tube	Axle splines worn	Faulty planet pins	Improper oil level/grade oil	Faulty hydraulic system
Clutch slipping										•						•	•						
Clutch won't engage										•						•	•	•					
Clutch won't disengage		•									•	•				•							
Clutch chatters/skips													•				•						
Clutch grabs													•	•		•	•						
Noisy clutch						•									•		•	•					
Transmission overheats						•																	
Transmission oil leak	•																						•
Not shifting properly		•	•	•	•																		
Gear doesn't engage		•	•	•	•																		
Jumps out of gear		•	•	•	•																		
Transmission jams							•		•					•									
Transmission locked in two gears		•						•	•														
Differential noisy						•	•																
Differential jams							•																
Wheel hub rotation skips																					•		
Wheel hub doesn't rotate																						•	
Wheel hub noise						•																	
U-joint failure	•														•				•				
Driveline vibrates						•									•				•	•			
Slip spline failure	•														•				•				
Support bearing failure	•														•				•				

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6 Specifications and Schematics

AIR CLEANER

Type . . . . . Dual element, dry type with safety element, precleaner, exhaust aspirated, air intake restriction gauge

AIR CONDITIONER

Charge . . . . . 1.8 kg (4 lb 3 oz)

Oil Level . . . . . 200 mL (7 oz)

AXLES

Type . . . . . Spiral bevel differential with outboard planetary, floating ring gear final drive

Differential Ratio 4.88:1

Lubrication SAE80W90 GL5

Oil Capacity . . . . . 38.5 L (41 qt US)

Planetary Ratio 5.285:1

Total Ratio 25.79:1

BRAKES

Type . . . . . 430 mm(17 in.) disc and caliper, self-adjusting driveline mounted

Meets or Exceeds . . . . . ASAE S 365T (SAE J104l)

Caliper . . . . . Twin piston, floating, hydraulically actuated by foot pedal

Parkbrake . . . . . Integral with road brake, self-adjusting, actuated by over center lever

CAB

Type . . . . . Independent module type with rollover protective structure (ROPS ASAE S383)

Seat Belt . . . . . SAE J141, SAE J385

CAPACITIES

Axles . . . . . 38.5 L (41 qt US)

Cooling System . . . . . 58 L (61 qt US)

Engine Crankcase . . . . . 38.5 L (41 qt US)

Fuel Tank . . . . . 700 L (185 gal US)

Hydraulic System . . . . . 79.5 L (84 qt US)

Transmission . . . . . 20.5 L (21.5 qt US)

CLUTCH

Type . . . . . 395 mm (15.5 in.) two plate dry type, wear compensating, 15 mm (5/8 in.) release, safety start switch

Static Torque . . . . . 2 793 N·m (2 060 lbf ft)

COOLING SYSTEM

Capacity . . . . . 58 L (61 qt US)

Radiator . . . . . 6 970 cm^2 (1 080 sq in.)
Fan . . . . . 810 mm (32 in.) dia. 6 blade sucker type, belt driven

Pressure Cap . . . . . 48 kPa (7 psi)

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3 Lubrication and Maintenance

Service intervals recommended in this manual are based on operation under average conditions. When operating the tractor in severe heat, cold, dust or humidity, service the tractor more frequently.

LUBRICATION AND MAINTENANCE SCHEDULE

	AS REQUIRED	DAILY 10 HOURS	WEEKLY 50 HOURS	MONTHLY 200 HOURS	400 HOURS	ANNUALLY	LUBRICANT[5]	NUMBER OF POINTS	LUBRICATION POINT
Clean air cleaner outer element	•				•				
Adjust parkbrake	•								
Check air conditioner and drain traps	•								
Decelerator adjustment	•								
Check engine coolant level		•	•	•	•	•			
Check engine oil level		•	•	•	•	•	A		1
Clean radiator and grill		•	•	•	•	•			
Grease clutch release bearing		•	•	•	•	•	F	1	17
Grease clutch shaft support bearing			•	•	•	•	F	1	17
Lubricate three-point hitch		•	•	•	•	•	E	9	19
Visually inspect tractor		•	•	•	•	•			
Lubricate upper driveline U-joint			•	•	•	•	E	3	8
Lubricate lower driveline U-joint			•	•	•	•	E	8	10
Lubricate driveline steady bearing			•	•	•	•	E	1	11
Lubricate steering cylinder pivots			•	•	•	•	E	4	3
Lubricate upper and lower frame pivots			•	•	•	•	E	2	6
Lubricate drag link pivot bearings			•	•	•	•	E	4	4
Lubricate clutch cross shaft			•	•	•	•	E	2	7
Lubricate main pivot frame			•	•	•	•	E	1	5
Check transmission oil level			•	•	•		B		9
Check hydraulic oil level			•	•	•		B		
Check differential oil level				•	•	•	C		14
Check axle planetary gears oil level			•	•	•		C	4	12
Lubricate three-point hitch pins					•	•	E	10	18
Clean cab air filters			•	•	•	•			
Check engine air intake connections			•	•	•	•			
Change engine oil and filters				•[1]	•	•	A		2
Change transmission return filter				•[2]	•	•	B		
Change DCA filter					•				
Fuel system maintenance				•	•	•			
Change hydraulic return filter/drain tank			•	•	•	•	B		
Check belt tension			•	•	•	•			
Service batteries				•	•	•			
Check brake fluid level				•	•	•	D	1	
Change planetary and differential oil		•[3]			•	•	C	4	13/15
Torque wheel and axle bolts	•[4]			•	•	•			
Change transmission oil, wash screen				•	•	•	B		16
Wash/replace hydraulic suction screen					•	•			
Grease door and window hinge pins						•	E	5	
Change coolant/install precharge element						•			
Replace cab air filter element						•			
Service ether bottle						•			
Check condition of brake pads						•			

1 **Change oil after the first 30 hours of operation and every 200 hours thereafter.**
2 **Change filters after the first 50 hours of operation and every 200 hours thereafter.**
3 **Change oil after the first 30 hours of operation and every 400 hours thereafter.**
4 **Torque wheel bolts after the first hour of operation and every 200 hours thereafter.**
5 **See Table 2, Lubricant Brand Equivalency Chart.**

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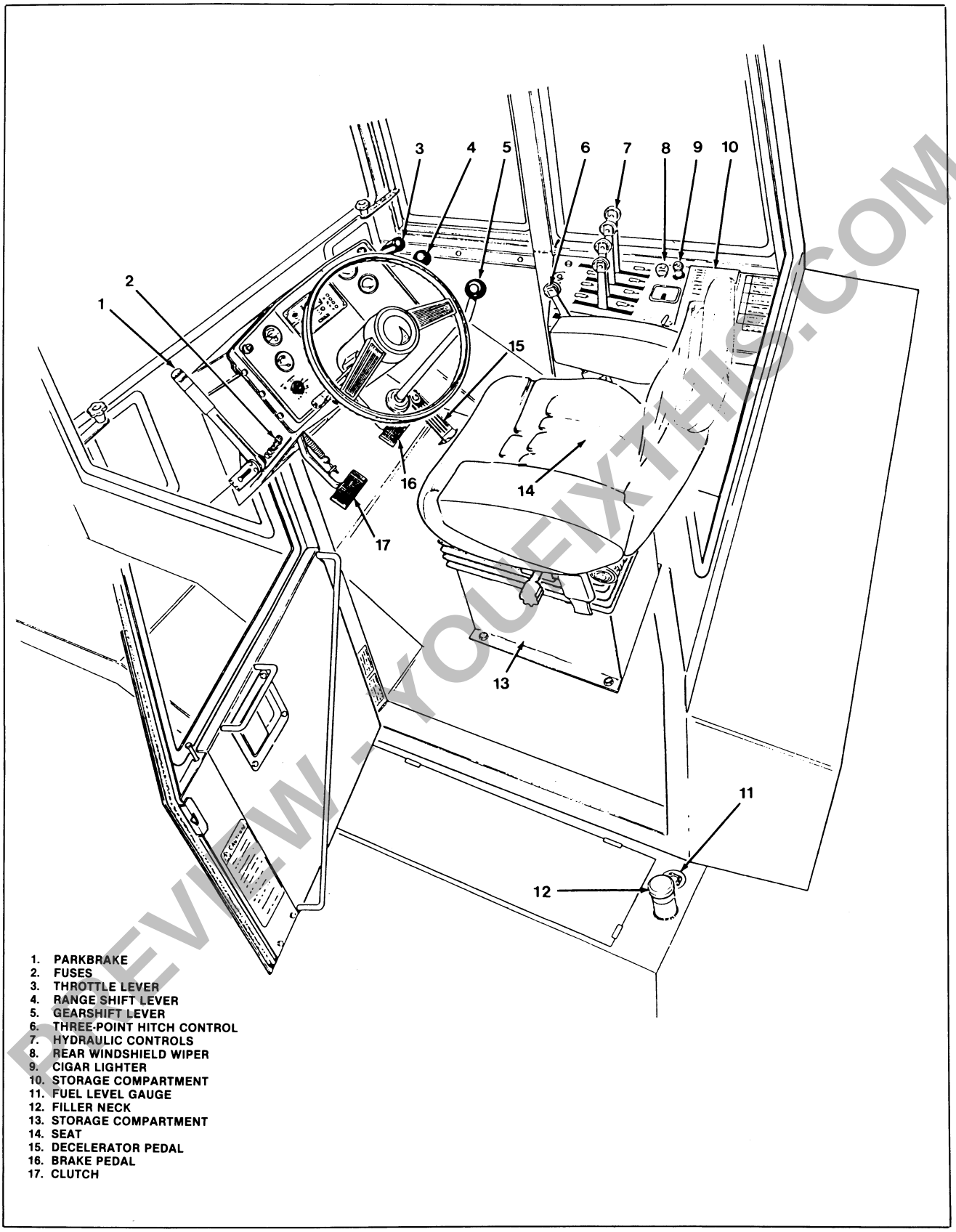

1. PARKBRAKE
2. FUSES
3. THROTTLE LEVER
4. RANGE SHIFT LEVER
5. GEARSHIFT LEVER
6. THREE-POINT HITCH CONTROL
7. HYDRAULIC CONTROLS
8. REAR WINDSHIELD WIPER
9. CIGAR LIGHTER
10. STORAGE COMPARTMENT
11. FUEL LEVEL GAUGE
12. FILLER NECK
13. STORAGE COMPARTMENT
14. SEAT
15. DECELERATOR PEDAL
16. BRAKE PEDAL
17. CLUTCH

Cab Controls and Instruments

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