

4430 Tractor

TECHNICAL MANUAL
4430
Tractor

4430 TRACTOR

Serial No. (-33109)

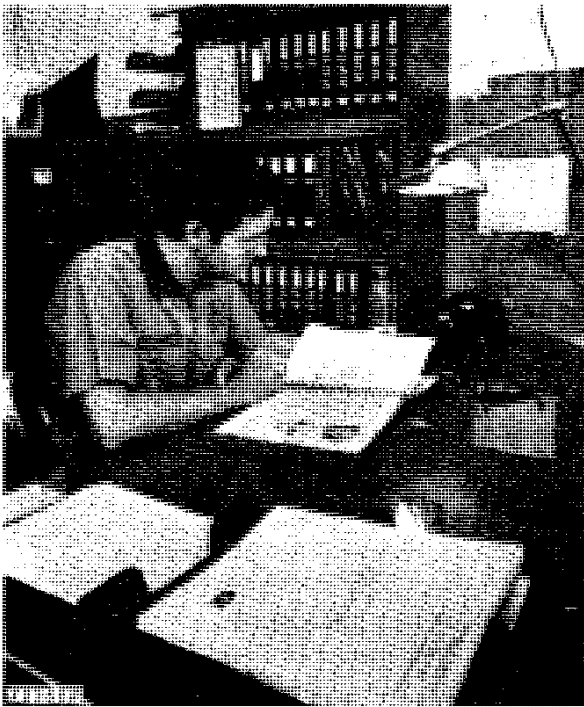
TECHNICAL MANUAL

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All information, illustrations and specifications contained in this technical manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

INTRODUCTION



Use FOS Manuals for Reference

This technical manual is part of a twin concept of service:

- *FOS Manuals*—for reference
- *Technical Manuals*—for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new men and for reference by experienced men.

Technical Manuals are concise service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by a journeyman mechanic.



When a serviceman should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.



Use Technical Manuals for Actual Service

Some features of this technical manual:

- *Table of contents* at front of manual
- *Exploded views* showing parts relationship
- *Photos* showing service techniques
- *Specifications* grouped for easy reference

This technical manual was planned and written for you—a journeyman mechanic. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.



This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

Section 10 GENERAL

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Group 5

GENERAL TRACTOR SPECIFICATIONS

PTO HORSEPOWER (Official test
 at 2200 engine rpm):125.88

ENGINE:

Type6-cylinder, in-line, valve-in-head,
 diesel, turbocharged

Bore and stroke 4¼ in. x 4¾ in.

Displacement 404 cu. in.

Compression ratio 15.5 to 1

Firing order 1-5-3-6-2-4

Valve clearance Intake—0.018 in.
 Exhaust—0.028 in.

Injection pump timing TDC

Engine Speeds:

 Working range1500 to 2200 rpm

 Maximum transport speed 2400 rpm

Engine speeds:

 Slow idle 800 rpm

 Fast idle 2400 rpm

LUBRICATION SYSTEM:

Full pressurized with full-flow micronic oil filter,
 water cooled oil cooler, and bypass valves for
 filter and cooler.

FUEL SYSTEM:

Type Direct Injection

Filters Two-stage with replaceable
 impregnated paper element

Injection pump type Multiple plunger,
 in-line

Air cleaner Dry type, with safety element

COOLING SYSTEM:

Type Pressurized with centrifugal pump

Temperature control Heavy-duty
 thermostats

CAPACITIES:

Fuel tank 46 U.S. gals.

Cooling system 30 U.S. qts.

Crankcase (with filter change) ... 17 U.S. qts.

Transmission—hydraulic system (add 4½
 gals. to capacity if equipped with Power Front
 Wheel Drive):

 Quad-range or Syncro-range .. 13 U.S. gals.

 Power shift transmission 11 U.S. gals.

 Hi-crop final drive housing 1¾ U.S. qts.

SYNCRO-RANGE TRANSMISSION:

Type Syncro-range, constant mesh

SYNCRO-RANGE TRANSMISSION (Continued)

- Clutch
 - Perma-Clutch Hydraulically operated, wet clutch, multiple disk
- Gear selections 8 forward and 2 reverse
- Shifting 4 stations, synchronized forward speed shifting within stations

QUAD-RANGE TRANSMISSION:

- Type 2-speed, power shifted, planetary and 8-speed, syncro-range transmission with constant mesh gears
- Perma-Clutch Hydraulically operated multiple disk wet clutch
- Gear selections 16 forward and 6 reverse
- Shifting
 - Range selector lever Collar shifted between ranges
 - Speed selector lever
 - Forward-rearward lever movement
 - Mechanically synchronized forward speed shifting of syncro-range transmission
 - Sideways lever movement Power shifted planetary transmission speeds

POWER SHIFT TRANSMISSION:

- Type Planetary gears, hydraulically actuated wet disk clutches and brakes
- Gear selections 8 forward and 4 reverse
- Shifting Hydraulic, powershifting controlled by speed selector

POWER TAKE-OFF

- Type Independent PTO with rear power take-off controlled by hand-operated clutch lever stub shafts used for dual speed PTO speed conversion
- Speed (2200 engine rpm) Dual speed—540 or 1000 rpm; single speed—1000 rpm
- PTO ahead of drawbar
 - hitch point 540 rpm—14 in. 1000 rpm—16 in.

ELECTRICAL SYSTEM

- Type 12-volt, negative grounded
- Batteries:
 - Diesel Two, 6-volt, 5D group, 800 amps cold cranking at 0°F, 376 minutes reserve capacity at 25 amps
- Alternator 12-volt, 55 amp with Sound-Gard body, 37 amp without Sound-Gard body

POWER FRONT-WHEEL DRIVE

- Type Hydraulic motor driven with planetary gear reduction in wheel hub, uses pressure oil from hydraulic system
- Torque Low (series connected) and high (parallel connected)
- Controls Solenoid-operated control valves, synchronized with transmission controls

HYDRAULIC SYSTEM

- Type Closed center, constant pressure
- Actuates power steering, power brakes, power front-wheel drive, and implement control
- Standby pressure 2250 psi

BRAKES

- Type Hydraulically actuated power disk type operating in oil

STEERING

- Type Hydraulically actuated power, manual operation in case of hydraulic failure

FRONT TIRES* 7.50-15, 6-ply rating

REAR TIRES* 20.8-34, 6-ply rating

WHEEL TREADS See tractor operator's manual

**Additional tire sizes available.*

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