International Harvester Service Manual
4100, 4156, 4166 & 4186
Chassis Only

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REMOVAL

1. Remove the hood and side panels.

2. Drain the cooling system. Disconnect the throttle linkage and remove the electrical wires as required.

3. Disconnect the oil cooler from the grille frame. Remove the grille frame, radiator and the radiator side supports as an assembly. It will be necessary to guide the oil cooler out of the grille and radiator assembly as it is removed from the tractor.

4. Disconnect the fuel line at the filter.

5. Remove the fan assembly and replace the capscrews that held the fan.
Spacer and gauge block no. (to be used with FES 50) ..................... 25*
Friction surface on flywheel to back plate mounting surface .............. 1.938 inches
Back plate mounting surface on flywheel to crankshaft mounting surface .. 3.500 inches

*Use .035 inch feeler gauge (in place of .002) with gauge block.
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TRANSFER CASE

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SPECIAL TORQUES (FOOT POUNDS)

Countershaft nut ................................................................. 70

1. Drain the transfer case (both plugs) and the clutch housing.

2. Remove the battery and tool box covers.

3. Remove the bottom step and riser from either side.

4. Remove the seat and center section of the platform.

5. Disconnect the front and rear drive lines.

6. Remove the hydraulic lines and the hydraulic pump.

NOTE: It will be necessary to perform steps 7, 8 and 9 before removing the transfer case. However, the illustrations on page 3-2 were taken after the transfer case was removed to better show the parts to be removed.
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SPECIAL TORQUES

Countershaft nut (2-3/4 inch)
4100 and 4156 Tractors ........................................... 100 ft. lbs.
4166 Tractor ........................................................ 300 ft. lbs.
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WHEEL ENDS, BRAKES AND FRONT AXLE

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<thead>
<tr>
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<th>Torque (Foot Pounds)</th>
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<td>Pinion cage to carrier</td>
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<tr>
<td>Differential case bolts</td>
<td>123</td>
</tr>
<tr>
<td>Differential ring gear (service only)</td>
<td>195</td>
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<td>Pinion shaft yoke nut (front)</td>
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<tr>
<td>Pinion shaft yoke nut (rear)</td>
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<tr>
<td>Differential bearing adjusting nut lock</td>
<td>25</td>
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<tr>
<td>Differential bearing cap</td>
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4100 and 4156 ........................................ Foldout No. 1 at back of manual
4166 ................................................ Foldout No. 2 at back of manual

Complete overhaul and testing information is covered in GSS-1032C.

SPECIFICATIONS

Alternator

<table>
<thead>
<tr>
<th>Delco-Remy Model No.</th>
<th>Field Current @ 80°F</th>
<th>Cold Output at Specified Voltage</th>
<th>Rated Hot Output (Amps)</th>
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<td>TRANSMISSION BRAKE</td>
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<td>SAFETY STARTING SWITCH</td>
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IPTO Pressure - psi ...................................... 230 + 5

SPECIFICATIONS
1. Bearing retainer  
2. Capscrews  
3. Feeler gauge

7. Measure the gap next to the cap-
screws and average the reading. The
correct shim pack is the average gap
plus .014 inch.

8. Select a shim pack within .001 inch
of the determined valve. Then assemble
the shim pack, bearing retainer and seal
ring.

NOTE: The shaft should rotate freely
when the bearing retainer capscrews are
torqued.

9. Install the rear oil seal.

---

ADJUSTING THE IPTO PRESSURE

IMPORTANT: Fluid temperature must
be 150°F. Flo-Rater FES 51-D can be
connected to an auxiliary valve to check
fluid temperature.

Remove the rear top cover and the
rear lower L.H. cover. Remove the plug
from the test port in the L.H. side of the
IPTO.

Install a 300 psi gauge FES 1-4 using
an orifice 384 328 R1 in the pressure port.

1. Before starting test, push valve
linkage support into extreme down posi-
tion so that top edge of bolt holes are in
contact with mounting bolts, then tighten
mounting bolts securely.

2. Unscrew the control valve stem
from the valve adjustment nut and swing
the actuating link up out of the way.

3. Engage the IPTO, and operate the
engine at 2100 rpm, which will be 1000
rpm (± 25 rpm) at the output shaft of the
PTO.

4. Move the control lever until the
valve stem contacts the bumper spring
retainer or position "B" and hold. (This
is the partial engagement position.)
Check the pressure at this point.

5. If the pressure gauge reads less
than 41 psi, remove the control valve
cover, bumper spring, and bumper spring
retainer. Install the bumper spring
shim(s) 384 562 R1 as needed until 40-46
psi is obtained. (The chart shows approx-
imate number of shims to use according
to pressures.) If the pressure gauge
reads more than 46 psi, install additional
washer(s) 384 875 R1 until 41-46 psi is
obtained.
**Section 11**

**AIR CONDITIONING**

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</tbody>
</table>

**SPECIFICATIONS**

4100 and 4156 Tractors

- **Capacity - BTU per hour**: 20,000
- **Electrical system**
  - **Volts - D.C.**: 14
  - **Amperes (one circuit breaker)**: 30 max.
- **Freon charge (F-12) - lbs.**: 4-1/2
- **Minimum compressor rpm**: 1000
- **Minimum engine rpm**: 1250
- **Expansion valve superheat setting - degrees**: 7

Compressor pressures (read with service gauges)

- **Low side (depending on ambient temperature) - psi**: (approx) 15-30

*Based on 80°F dry bulb - 67°F wet bulb temperatures.