THIS IS A MANUAL PRODUCED BY JENSALES INC. WITHOUT THE AUTHORIZATION OF GEHL OR ITS SUCCESSORS. GEHL AND ITS SUCCESSORS ARE NOT RESPONSIBLE FOR THE QUALITY OR ACCURACY OF THIS MANUAL.

TRADE MARKS AND TRADE NAMES CONTAINED AND USED HEREIN ARE THOSE OF OTHERS, AND ARE USED HERE IN A DESCRIPTIVE SENSE TO REFER TO THE PRODUCTS OF OTHERS.
HL 2500 LOADER

MANUAL PREVIEW

purchase full manual at
JENSALES.COM
or Call 800-443-0625

SHOP MANUAL
SPECIFICATIONS

Lift Capacity .......................... 800 lbs., full height with two counter weights

Bucket Capacity ....................... 6¾ cu. ft. and up

Travel Speed .............................. 0-7 MPH, infinite variable

Speed and Directional Control .......................... Single "T," Bar

Lift and Tilt Control ...................... Single "T," Bar

Drive System .......................... Dual Sundstrand Hydro-Transmission driving through gear and chain reduction

Hydraulic System ..................... Engine driven Borg-Warner gear pump wear compensated. 7.25 gpm at 3000 RPM, 2000 PSI capacity

Valving .......................... Lift and Tilt with full float detent on lift, 20 CPM capacity

Cylinders .......................... Lift, double-acting 2" bore x 1-1/8" rod tilt, double-acting 2-1/2" bore x 1-1/8" rod

Filtration .......................... Disposable spin-on cartridge type 10 micron element

Hydraulic Cooler ................. All steel construction

Reservoir .......................... 9½ gallon capacity

Optional Equipment

Buckets 6¾ cu. ft. and up capacity

Counterweights

Electric Lights

Overhead Guard (Std.)

Scalper

LP Gas

Trailer

System Pressures .................. Hydraulics, 1900-2000 PSI relief setting, hydrostatics, designed for wheel slip at maximum load

Engine .......................... Onan NHC 25 BHP at 3600 RPM (22.5 at operating RPM of 3000)

Fuel .......................... Gasoline

Cooling .......................... Air cooled with engine shroud

Crankcase Capacity .......................... 4 quarts

Electrical .......................... 12 volt alternator

Starting .......................... Enclosed electric

Air Cleaner .......................... Dry type cartridge

Fuel Capacity .......................... 6½ U.S. gallon

Structure .......................... Unitized welded 3/8" thick high tensile steel plate construction with integral belly-pan.

Booms are box-tubed high tensile steel

Tires .......................... 7.00 x 13, 6 Ply construction grip type tread design

Seat .......................... Upholstered, extra wide form fit bucket type with seat belt

Shipping Weight .......................... 2350 lbs. less bucket

CLICK ANYWHERE FOR MORE DETAILS

OIL PRESSURE

The oil pressure gauge indicates pressure in the engine lubricating system. After the engine has reached normal operating temperature, the oil pressure should be 30 PSI or higher, except at low engine speeds. Never operate engine if pressure falls below 15 PSI. NOTE: Oil pressure does not show amount of oil in the engine crankcase.

HOURMETER

The engine hourmeter indicates the total hours of operation of the engine in tenths of an hour to a maximum of 9,999.9 hours. The hourmeter provides a true record where hours of operation are important such as:

1. How long since oil was changed?
2. How long since the filter was changed?
3. How long since unit was lubricated?
4. How many hours has equipment run?
5. How long did it take to do a job?

Red numbers on the meter indicate tenths of hours. After 9,999.9 hours, the meter will repeat automatically.
TABLE OF CONTENTS
SERVICES AND REPAIRS

Table of Content (Service and Repair) .......... 10
Special Tools ........................................ 10

A. CHASSIS ........................................... 11-20
Table of Contents (Chassis Section)
Torques ............................................. 12
Wheels and Tires .................................... 12
Seat Assembly ....................................... 12-13
Overhead Guard .................................... 13
Control Lever Console ............................. 13
Load Arms .......................................... 14
Mounting Attachments ............................. 14
Hydraulic Kit ....................................... 14-15
Post Hole Auger .................................... 15-16
Grapple Fork ....................................... 16-17
Scarifier ............................................ 17-18
Light Kit ............................................ 18-19
Flotation Tires ...................................... 19
Fuel Tank ............................................ 19-20
Drive Chain Cover ................................. 20

B. ENGINE ............................................. 21-45
Engine Warranty .................................... 21
Table of Contents (Engine Section) .......... 22
Specifications ....................................... 23
Torques ............................................. 23-24
Dimensions and Clearances ....................... 25-26
Trouble Shooting ................................... 26-27
Service and Maintenance ......................... 28-30
Governor System ................................... 30-32
Ignition and Battery Charging .................. 32-34
Starting System .................................... 33-38
Engine Disassembly ................................ 38
Engine Wiring Diagram ........................... 41
Light Wiring Diagram .............................. 45

WORLD WIDE SYMBOLS .................. 46-49

C. FUEL SYSTEM ..................................... 47-50
Table of Contents (Fuel System) ............ 48
Gasoline Carburetor .............................. 49-50

Fuel Pump .......................................... 49-49

D. HYDROSTATIC SYSTEM ......................... 51-51
Table of Contents ................................ 52
Specifications ....................................... 52
Trouble Shooting ................................... 53-55
Hydrostatic Nomenclature ........................ 55
Principle of Hydrostatics ......................... 56-58
Pump/Motor ......................................... 57
Charge Pump ........................................ 57
Towing the Loader .................................. 57
Inlet Filter ......................................... 58
Repair of Hydrostatic Components ............. 58-59
Charge Pump Service ............................... 59-60
Charge Pump Relief Valve Service .............. 60-61
Charge Check Valve Service ....................... 61-63
Transmission Service .............................. 64-64
Hydrostatic Unit Pressure Check ................. 64

E. HYDRAULIC SYSTEM ......................... 65-76
Table of Contents ................................ 66
Torques ............................................. 66
Hydraulic Circuit Description .................... 66
Trouble Shooting ................................... 67
Boom & Bucket System Pressure Check ........... 68
Pump & Control Valve System Pressure Check ... 68-69
Hydraulic Pump ..................................... 69-70
Hydraulic Control Valve ......................... 70-73
Lift and Tilt Valve ................................ 70
Auxiliary Valve ..................................... 71-71
Hydraulic Control Valve - Repair ............... 70-71
Reassembly Procedure ............................. 71-73
Replacing with U-Cup Seal ....................... 71-73
Replacing with Quad Seal ........................ 71-73
Hydraulic Cylinders ............................... 73-75
Bucket Cylinder - Repair ......................... 75

F. MECHANICAL DRIVE ......................... 77-82
Table of Contents ................................ 78
Idler Hub ........................................... 78-79
Wheel Hub .......................................... 79-80
Transmission ........................................ 80

SPECIAL TOOLS USED IN REPAIR AND SERVICE OF HL2500

1 1/4" dia.
2 1/8" dia.
1 1/2" dia.
2 2/8" dia.
2 1/8" Square
2" x 4" x 8" Stock
2" x 6" x 10" Stock
23"
1 1/4"
3/16" Thickness

Valve Seat Driver .................................. 420A308
Valve Seat Staker, intake .......................... 420A309
Valve Seat Staker, exhaust ....................... 420A310
Valve Seat Cutter ................................... 420A311
Oil Seal Guide and Driver ......................... 420B118
Bearing Plate ....................................... 420B118
Gear Cover .......................................... 420B313
Timing Advance Mech. Cover Driver ............. 420B196

These tools are available from Onan to aid service and repair work.

Crankshaft Gear Pulling Ring .................... 420A248
Flywheel Puller .................................... 420A100
Combination Bearing Remover, Main and Cam .. 420A325
Combination Bearing Driver, Main and Cam ..... 420B324
Valve Guide Driver .................................. 420A300
## Table of Contents

**Introduction (Chassis Repair & Service)** ........................................ 11-20

- Table of Contents .............................................................................. 12
- Torques .......................................................................................... 12
- Wheel and Tire Service .................................................................... 12
- Seat Assembly .................................................................................. 12-13
- Overhead Guard .............................................................................. 13
- Control Lever Console ..................................................................... 13
- Load Arms and Attachments ............................................................. 14
- Mounting Attachments ..................................................................... 14
- Hydraulic Kit ................................................................................... 14-15
- Post Hole Auger ............................................................................. 15-16
- Grapple Fork ................................................................................... 16-17
- Scarifier ........................................................................................... 17
- Light Kit ........................................................................................... 18-19
- Flotation Tires ................................................................................ 19
- Fuel Tank .......................................................................................... 19-20
- Drive Chain Cover ........................................................................... 20

## Torques

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque (Ft. lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis and Mechanical Drive</td>
<td></td>
</tr>
<tr>
<td>Wheel Bolts</td>
<td>80</td>
</tr>
<tr>
<td>Cylinder Mounting Bolts</td>
<td>170</td>
</tr>
<tr>
<td>Auxiliary Hydraulic Valve Mounting Bolts</td>
<td>20</td>
</tr>
<tr>
<td>Idler Hub Bolts</td>
<td>55</td>
</tr>
<tr>
<td>Wheel Hub Bolts</td>
<td>120</td>
</tr>
</tbody>
</table>

## Wheel and Tire Service

Wheels are easily removed after blocking up the machine. The front of the machine can be raised by using the boom, but it is still necessary to block up the machine.

Standard 7.00 x 13 6-ply tires are used and inflated to 35 lbs.

## Seat Assembly - Removal and Installation

**Removal**

1. Remove the 5/16 x 1 capscrews retaining seat back plate to seat mounting bar. Remove nut from center support stud.
2. Roll seat assembly up and forward to dislodge stud and control lever latch pivot linkage. Continue forward and up with seat assembly over the T-Lever control console.

Equal pressures must be kept on all tires to prevent uneven tire wear, hard turning, or excessive drive chain, or sprocket wear.

When replacing tires replace with the same size as are on the machine. Should two new tires be replaced, install both new tires on the same side of the machine and both used tires (same diameter) on the opposite side.
3. Position and fasten Hydraulic Cylinder to center Grapple hinge. Attach 34" hose to top port of the Cylinder – 24" hose to lower port.

4. Connect Hydraulic hoses to the Control Valve and attach to the Left Load Arm as instructed under Post Hole Auger Assembly.

5. Mount Grapple Fork as other Buckets are mounted. Connect Cylinder Hoses to the Quick Couplers.

SCARIFIER
(Unloader Must Be Equipped With Hydraulic Kit To Use Scarifier Attachment)
Scarifier mounting described below is for machines prior to the hinged rear grill.

The Scarifier can be mounted on all HL2500 Loaders equipped with Hydraulic Kit; however, Lower Mounting Brackets must be added to the Loader Frame before installing the kit of parts.

Position Lower Mounting Bracket flush with bottom and rear of the Side Frame Member and weld in place as shown. NOTE: Brackets must be added on both right and left sides of the machine.

Remove nut and lock washer from the Rear Lift Cylinder Bolt and Load Arm Bolt on each side. Position the Scarifier Cylinder Mounting Brackets as shown. Fasten with nuts removed from the Cylinder and Load Arm Bolts. It is not necessary to use the lock washers. NOTE: There are Right and Left Hand Mounting Brackets.

Position the Tool Beam on Lower Mounting Brackets and fasten with special 1 inch x 3 inch hexagon head bolts. Fasten the Hydraulic Lift Cylinders with 3/4 x 4-1/2 hexagon head bolts as shown. NOTE: Be sure grease fitting is on lower end if facing toward the rear.

Before connecting the Hydraulic Lines, it will be necessary to add a tapped hole to the Outer Counterweight. Locate position of hole. Center punch and drill 7/32" diameter hole 1" deep. Tap 1/4" - 20 thread 7/8" deep.

Turn end of 45 inch hose into each port of the Right Hydraulic Cylinder. Connect other end of the hose to straight adapter union on the Left Hydraulic Cylinder. IMPORTANT: Hoses must be assembled exactly as shown in the photograph. Position Clamp over the hose and fasten to the counterweight with 1/4 x 3/4 hexagon head bolt.
Engine Service and Repairs

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Warranty</td>
<td>22</td>
</tr>
<tr>
<td>Model and Specification No.</td>
<td>23</td>
</tr>
<tr>
<td>Specifications</td>
<td>23</td>
</tr>
<tr>
<td>Torques</td>
<td>23-24</td>
</tr>
<tr>
<td>Dimensions and Clearances</td>
<td>25</td>
</tr>
<tr>
<td>Trouble Shooting</td>
<td>26-27</td>
</tr>
<tr>
<td>Service and Maintenance</td>
<td>28-29</td>
</tr>
<tr>
<td>Maintenance Schedule</td>
<td>28</td>
</tr>
<tr>
<td>Crankcase Oil</td>
<td>28-29</td>
</tr>
<tr>
<td>Crankcase Breather</td>
<td>29</td>
</tr>
<tr>
<td>Air Cleaner</td>
<td>29</td>
</tr>
<tr>
<td>Governor Linkage</td>
<td>29</td>
</tr>
<tr>
<td>Engine Removal</td>
<td>29-30</td>
</tr>
<tr>
<td>Governor System</td>
<td>30-32</td>
</tr>
<tr>
<td>Ignition and Battery Charging</td>
<td>33</td>
</tr>
<tr>
<td>Breaker Points</td>
<td>33</td>
</tr>
<tr>
<td>Ignition Timing</td>
<td>33</td>
</tr>
<tr>
<td>Spark Plugs</td>
<td>33</td>
</tr>
<tr>
<td>Ignition Coils</td>
<td>33</td>
</tr>
</tbody>
</table>

How to Interpret MODEL and SPEC NO.

1. Factory code for general identification purposes.
2. Specific Type:
   - S-Manual starting with stub shaft power take off.
   - MS-Electric starting with stub shaft, starter and generator.
3. Factory code for optional equipment supplied.
4. Specification (Spec Letter) advances with factory production modification.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cylinders</td>
<td>4</td>
</tr>
<tr>
<td>Displacement (cubic inch)</td>
<td>366</td>
</tr>
<tr>
<td>Cylinder Bore</td>
<td>3-9/16in.</td>
</tr>
<tr>
<td>Piston Stroke</td>
<td>3 Inch.</td>
</tr>
<tr>
<td>Horsepower</td>
<td>25 BHP @ 3600 rpm</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>7.0 to 1</td>
</tr>
<tr>
<td>Ventilation Required (cfm @ 3600 rpm)</td>
<td>1808</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>3-1/2 Qt.</td>
</tr>
<tr>
<td>Oil Capacity with Filter Change</td>
<td>4 Qt.</td>
</tr>
<tr>
<td>Starting Fuel</td>
<td>Gasoline (regular grade)</td>
</tr>
<tr>
<td>Ignition Fuel</td>
<td>Electric</td>
</tr>
<tr>
<td>Combustion Air (cfm @ 3600 rpm)</td>
<td>80</td>
</tr>
<tr>
<td>Fuel Pump Standard before serial number 2374</td>
<td>Disengaged</td>
</tr>
<tr>
<td>Fuel Pump electric standard after serial number 2373  (Auto 4 ft. lift)</td>
<td>Pulse not part of the Onan engine</td>
</tr>
<tr>
<td>Compression Pressure</td>
<td>100-120 P.S.I.</td>
</tr>
<tr>
<td>RPM (No Load)</td>
<td>3000</td>
</tr>
<tr>
<td>RPM (Idle)</td>
<td>500</td>
</tr>
</tbody>
</table>

Tune-Up Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark Plug Gap</td>
<td>.025&quot;</td>
</tr>
<tr>
<td>Breaker Point Gap</td>
<td>.020&quot;</td>
</tr>
<tr>
<td>Ignition Timing (Fixed), Electric Start Units</td>
<td>25° BTC</td>
</tr>
<tr>
<td>Tappets (Cold) Intake</td>
<td>.003&quot;</td>
</tr>
<tr>
<td>Exhaust</td>
<td>.012&quot;</td>
</tr>
</tbody>
</table>

Battery Inspection                          | Page 33 |
Flywheel Insulation                          | Page 34 |
Starting System                              | Pages 35-38 |
Engine Disassembly                           | Page 38 |
Vitres                                       | Pages 38-39 |
Flywheel                                    | Page 39 |
Gear Cover                                   | Page 40 |
Governor Cups                                | Page 40 |
Piston and Rings                             | Pages 40-42 |
Connecting Rods                              | Page 42 |
Crank Shaft                                  | Page 42 |
Oil Sump                                     | Page 43 |
Oil Sump End Play                            | Pages 43-44 |
Cylinder                                    | Page 44 |
Cylinder Heads                               | Page 44 |
Oil Pump                                     | Page 44 |
Engine Wiring Diagram                        | Page 45 |
Light Wiring Diagram                         | Page 45 |

ASSEMBLY TORQUES

Assembly torques as given here require the use of torque wrench. These assembly torques will assure proper tightness without danger of stripping the threads. If a torque wrench is not available, you will have to estimate the degree of tightness necessary for the stud, nut or screw being installed and tighten accordingly. Be careful not to strip the threads. Check all studs, nuts and screws often with the engine cold. Tighten as needed to prevent them from working loose.

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Head Nuts</td>
<td>17 - 19</td>
</tr>
<tr>
<td>Rear Bearing Plate</td>
<td>20</td>
</tr>
<tr>
<td>Connecting Rods</td>
<td>26 - 27</td>
</tr>
<tr>
<td>Flywheel Center</td>
<td>35 - 48</td>
</tr>
<tr>
<td>Starter Mounting Bracket to Oil Base Screws</td>
<td>43 - 48</td>
</tr>
<tr>
<td>Gear Case Cover</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Oil Pump</td>
<td>7 - 9</td>
</tr>
<tr>
<td>Other 3/8 Cylinder Block Nuts</td>
<td>18 - 23</td>
</tr>
<tr>
<td>Intake Manifold</td>
<td>18 - 20</td>
</tr>
<tr>
<td>Exhaust Manifold</td>
<td>10 - 12</td>
</tr>
</tbody>
</table>

NOTE: For gaseous fuel operation set spark plugs at .018" and Ignition timing at 26° BTC exhaust valve lash at .014".

How to Order

Order at Jensales or Call 800-743-0625

23
bore. The oil passage must be at least 1/2 open.

The cold oiled precision bearing should require only light taps to position it.

NOTE: Engines shipped from the factory have separate thrust washers and main bearings for both front and rear of engine. Front bearing replacement part is a one piece bearing (with attached thrust washer) as shown.

Do not add an additional thrust washer to this front bearing.

In the rear bearing plate, install the bearing flush to 1/64" below the end of the bore using combination driver 420B324 (same one used for camshaft bearing).

WARNING: Breathing vapor from towelette and prolonged contact with skin can be harmful. Be sure area is well ventilated.

After allowing three to four minutes for drying, apply the Locktite Bearing Mount from the small tube to the mating surfaces of the bearing and bearing bore. Install the bearing flush with the block using the combination driver just used for the rear bearing. Wipe off any excess Locktite around the bearing. Allow at least one hour for hardening at room temperature.

Lubricate the front main bearing lightly with oil and insert the crankshaft. With the rear bearing plate gasket in place and the rear plate bearing lubricated, slide the thrust washer (grooves toward crankshaft) and plate over the end of the crankshaft. Line up the notches of the thrust washer with the lock pins before tightening the end plate or the lock pins will be damaged.

NOTE: A light film of oil on the thrust washer may hold it in place while installing the crankshaft.

CRANKSHAFT ENDPLAY
After the rear bearing end plate has been tightened using the torque recommended in Assembly Torques and Special Tools, check the crankshaft endplay as shown in illustration. If there is too much endplay (see Dimensions and Clearances for minimum and maximum endplay), remove the rear bearing end plate and add a shim between the thrust washer and plate. Reinstall the end plate making sure the thrust washer and shim notches line up with the lock pins. Torque and recheck endplay of the crankshaft.

OIL SEALS
The bearing plate must be removed to replace its oil seal. Drive the oil seal out from the inside using bearing plate driver 420B181 and gear cover driver 420B313.
TABLE OF CONTENTS

FUEL SYSTEM

INTRODUCTION ........................................................ 47-50
Gasoline Carburetor .............................................. 48-49
Fuel Pump .......................................................... 49-50
Electric Fuel Pump ................................................ 50

GASOLINE CARBURETOR
For correction of problems traced to the gasoline carburetor, use the appropriate procedures selected from the following sequence:

Adjustment Under Load: Adjust the carburetor as follows when a full load can be applied.
1. Make sure the ignition system is working properly and that the governor is adjusted.
2. Start the engine and allow it to warm up. If the carburetor is so far out of adjustment that the engine will not start, close both needle valves gently to their seats. Then open each 1 to 1-1/2 turns, first the idle and then the main adjustment.
3. With no load applied to engine, turn the idle adjustment out until the engine speed drops slightly below normal. Then turn the needle in until the engine speed returns to normal.
4. Apply a full load to the engine and then carefully turn the main adjustment in until the speed drops slightly below normal. Turn the needle out until the engine speed returns to normal.

Adjustment Under "No Load" Conditions: When a load cannot be applied, adjust the carburetor as follows:
1. Perform steps 1 and 2 as given under Adjustment Under Load.
2. Pull out on the governor mechanism to slow the unit down to about 400-500 rpm.
3. Set the idle adjustment screw for even operation (so the engine is firing on both cylinders and is running smoothly).
4. Release the governor mechanism to allow the engine to accelerate. If the engine accelerates evenly and without a lag, the main adjustment is correct. If not, adjust the needle outward about 1/4 turn and again slow down the engine and release the mechanism. Continue until the engine accelerates evenly and without a time lag after releasing the governor.
5. With the carburetor and governor adjusted, set the throttle stop screw at the desired idle speed.

Float-Level Check: If the carburetor adjustment fails to provide satisfactory operation, remove the carburetor and check the float level as follows:
1. Remove the fuel line, air cleaner hose, governor linkage and choke wires.
2. Remove the two carburetor mounting nuts and remove the carburetor.
3. Unthread the float bowl nut and remove the entire main fuel adjustment assembly from the float bowl.
4. Invert the carburetor and check that the float surface nearest the gasket is 1/8 ± 1/16 inch from the gasket. Bend the float tab as required to produce this spacing.

NOTE: If the carburetor utilizes an internally spring loaded fuel inlet valve, the float surface should be 1/8 ± 1/16 inch from the gasket with the full weight of the float compressing the spring in the needle.

5. Reassemble, install and test.
TABLE OF CONTENTS

HYDROSTATIC SYSTEM

Page

INTRODUCTION (Repair & Service) ........................................ 51-64
Table of Contents ............................................................ 52
Specifications ........................................................................ 52
Spring Specifications ......................................................... 52
Trouble Shooting ................................................................. 53-55
Hydrostatic Nomenclature .................................................... 55
Principle of Hydrostatics ...................................................... 56
Pump/Motor .......................................................................... 57
Charge Pump ........................................................................ 57
Towing the Loader ................................................................ 57
Inlet Filter ............................................................................ 58

Page

Charge Pump Service .............................................................. 59-60
Inspection and Repair ............................................................. 59
Reassembly and Installation .................................................... 60
Charge Pump Relief Valve Service ........................................ 60
Transmission Service ............................................................. 61-63
Disassembly ......................................................................... 61-62
Inspection and Repair ............................................................. 62
Cylinder and Slipper Assembly ............................................... 62-63
Reassembly ......................................................................... 63
Start-Up Procedure ............................................................... 63
Hydrostatic Unit Pressure Check ............................................ 64

SPECIFICATIONS - HYDROSTATIC

Pump Displacement ......................................................... 0.913 in³/rev
Pump Input Speed ............................................................. Up to 4000 RPM
Motor Displacement .......................................................... 0.913 in³/rev
Motor Output Speed ........................................................... Up to 4000 RPM
Max. Operating Pressure .................................................. 3000 PSI
Charge Pump Displacement ................................................ 0.19, 0.30 or 0.33 in³/rev
Charge Relief Setting .......................................................... 70-150 PSI
Max. Inlet Vacuum ............................................................ 5 in. hg.
Max. Case Pressure ............................................................ 15 PSI
Filtration ............................................................................ 25 Micron (nominal)
Slipper thickness ............................................................... 0.121

Hydrostatic Unit

Charge Pump Capscrew .................................................... 52 Ft. - lbs.
Center Section to Transmission Case Capscrew ...................... 35 Ft. - lbs.
Motor Swashplate (Fixed) Hexagon Socket Head Capscrews ...... 67 Ft. - lbs.

All slippers in block assembly MUST be within .002 inch thickness of each other.

SPRING SPECIFICATIONS

<table>
<thead>
<tr>
<th>Spring Description</th>
<th>Free Length (inches)</th>
<th>Test Length (inches)</th>
<th>Test Load (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor and pump block</td>
<td>1-3/64</td>
<td>19/32</td>
<td>63.75</td>
</tr>
<tr>
<td>assemblies</td>
<td>1-1/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge pump relief valve</td>
<td>1.05</td>
<td>0.525</td>
<td>70.76</td>
</tr>
</tbody>
</table>

JENSALES.COM

of Call 800-443-0625
Oil is drawn into the gear hydraulic pump (A) (driven by engine sheave) from the reservoir. A flow of 7.25 GPM is directed to the control valve (B) located under the operator's seat. The control valve is an open center 2 spool 4-way valve having 4 positions for the boom control (lift, hold, lower and detented float) and 3 positions on the bucket valve (lift, hold and lower). Load checks are built in for each spool giving excellent holding characteristics.

The relief pressure is controlled in the valve at a maximum of 2000 PSI. Oil is directed to the double acting cylinders on both the boom or bucket depending on whether one or both valves are actuated.

An auxiliary valve can be put in to the system when attachments such as grapple fork, backhoe or scarifier are added.
TABLE OF CONTENTS
MECHANICAL DRIVE

INTRODUCTION (Repair & Service) .......... 77-82
Table of Contents .................................. 78
Idler Hub .............................................. 78-79
Removal and Installation ..................... 78
Idler Hub Repair ................................. 79-80
Wheel Hub ............................................ 79-80
Removal .............................................. 79
Installation ......................................... 80
Transmission ...................................... 80
Removal .............................................. 80
Installation ........................................ 81
Re-Building ........................................ 81-82

IDLER HUB

REMOVAL AND INSTALLATION

1. To remove the idler hub it is necessary to remove the chain cover (refer to chassis section on Drive Chain Cover removal and installation.)
2. Remove the four (4) capscrews 1/2" x 1-1/2" NF from the idler hub and take up washer.
3. Remove the chain from the sprocket after hub and sprocket are removed from the main frame.

INSTALLATION

1. Install drive chain on sprocket and insert idler hub assembly through main frame location.
2. Install washer and four (4) 1/2"NF x 1-1/2" capscrews. Do Not tighten at this time.
3. Use Handyman or Automobile jack and raise the idler until the tires are slightly off the ground. Wheel can now be turned releasing slack in the drive chain on the back side of the sprocket.
4. Tighten idler hub bolts securely. Torque 55 ft. lbs.
5. Remove jack.

NOTE: Failure to maintain proper chain adjustment will result in damage to chain, axles, and sprockets.

IDLER HUB REPAIR

Replacement of sprocket, shaft, bearings or hub is possible.

To replace the 15 tooth sprocket, remove the 3/8 x 3/8 set screw and the sprocket can be removed from the shaft. Use of a gear puller will greatly facilitate removal of sprocket from shaft.

Replacement of bearings in the hub is accomplished as follows:

1. Removal of dust cup.
2. Removal of cotter pin.
4. Press shaft free of inner and outer bearing cone and remove the shaft from the hub.
5. Removal of seal, inner bearing cover and outer races can be done with a brass punch as shown in illustration or by the use of a slide hammer and puller arrangement.

Lubrication of chains with a good quality chain lubricant each time chains are adjusted is recommended as well as regular intervals as the operator has been instructed to do.
The most efficient and smoothest operation is achieved when the engine operates from half to full throttle and speed is controlled by means of the T-Bar and Hydrostatic transmission. The T-Bar should be moved slowly and positive with a firm hand grip and rigid arm extension. Good coordination of loader forward or backward movement, controlled by the left hand, in relation to lift arm and bucket operation, controlled by the right hand, is necessary to obtain the most efficiency from the loader.

**LATCH ADJUSTMENT**

Two (2) eye bolts locate the safety latch in the console. The same two (2) eye bolts are used to adjust the safety latch to neutral position in the control console.

1. Locate the two (2) T-Bar control levers in the neutral position.
2. Should the latch notch not engage the two T-Bars lock pins in neutral adjustment of safety, latch is needed.
3. Loosen eye bolts and set latch over T-Bar lock pins.
4. Tighten lock nuts on both sides of console to locate the latch.

**HYDRAULIC CONTROL LINKAGE ADJUSTMENT**

1. Check that right T-Bar is in the neutral position and locked by the safety latch. (Refer to Latch Adjustment)
2. Disconnect the control linkage from the control valve.
3. Allow control valve spool to position in neutral.
4. Loosen linkage and lock nuts on both ends.
5. Adjust both ends equally till linkage can be fastened to the control valve.
6. Tighten the lock nuts and linkage attaching nuts.