Operator’s Manual
Safety, Assembly, Operating, and Maintenance Instructions

Please Read and Save These Instructions
For Safety, Read All Safety and Operation Instructions Prior to Operating Machine

Beginning S/N: 134382
P/N 7000-14
Foreword

Thank you. . .for purchasing a Walker mower. Every effort has been made to provide you with the most reliable mower on the market, and we are sure you will be among our many satisfied customers. If for any reason this product does not perform to your expectations, please contact your local dealer. Every customer is important to us. Your satisfaction is our goal.

Please. . .read this manual thoroughly! This manual is to be used in conjunction with the engine manufacturer’s manual for the specific engine on the mower model you have purchased. Before you operate your new mower, please read this entire manual. Some of the information is crucial for proper operation and maintenance of this mower - it will help protect your investment and ensure that the mower performs to your satisfaction. Some of the information is important to your safety and must be read and understood to help prevent possible injury to the operator or others. If anything in this manual is confusing or hard to understand, please contact your local authorized dealer or call our service department, at (970) 221-5614, for clarification before operating or servicing this mower.

This manual covers Model D21d with the Kubota D722 (20.9 HP) diesel engine (liquid cooled).

All shields and guards must be in place for the proper and safe operation of this machine. Where they are shown removed in this manual, it is for illustration purposes only. Do not operate this machine unless all shields and guards are in place.

Specifications given are based on the latest information available at the time this manual was produced for a tractor with standard equipment. Optional equipment is available and may affect the standard specifications listed.

Walker Mfg. Co. is continually striving to improve the design and performance of its products. We reserve the right to make changes in specifications and design without thereby incurring any obligation relative to previously manufactured products.

Sincerely,
WALKER MANUFACTURING COMPANY

Bob Walker, President
# Table of Contents

## General Information
- Highlighted Information ______________ 1
- Glossary __________________________ 1
- Identifying Number Locations _______ 1
- Engine Serial Number Location _______ 2
- Servicing of Engine and Drivetrain Components ____________ 2

## Specifications
- Engine __________________________________ 3
- Electrical System _____________________ 3
- Transmission ___________________________ 3
- Blade Drive ______________________________ 4
- Tire Size __________________________________ 4
- Tire Pressure ____________________________ 4
- Drive Belts ______________________________ 4
- Seat ___________________________________ 5
- Frame/Body Construction _______________ 5
- GHS System (Optional) ________________ 5
- Mower Deck ____________________________ 5
- Dimensions (Tractor and Mower) __________ 6

## Component Identification
- Safety Instructions _____________ 11
  - Before Operating ___________ 11
  - Operating ___________________ 13
  - Maintenance _____________ 15
  - Safety, Control, and Instruction Decals ___________________________ 16

## Assembly Instructions
- Assembly Instructions ___________ 20
  - Setup Instructions __________ 20
  - Tire Installation (Tractor) __________ 20
  - Battery Service ___________________ 20
    - Wet Battery Service _____________ 20
    - Dry Battery Service _____________ 20
    - Battery Charging _______________ 21
    - Battery Installation ______________ 21
  - Mower Deck Assembly ___________ 22
    - Deck Caster Wheels Installation ___________ 22
    - Deck Discharge chute Installation ___________ 22
    - Deck Discharge Deflector ___________ 22
    - Shield Installation ___________ 23
    - PTO Shaft Guard Installation ___________ 23
    - Tilt-Up Roller Wheel Installation ___________ 23
  - Mower Deck Installation on Tractor ___________ 24
    - Deck Installation _______________ 24
    - Deck Leveling _______________ 26
- Preoperating Checklist __________ 27

## Operating Instructions
- Operating Instructions __________ 29
  - Control Identification, Location, and Function __________________________ 29
    - Operating Controls ___________ 29
      - Engine Throttle ___________ 29
      - Forward Speed Control (FSC) ___________ 30
      - Steering Levers ___________ 30
      - Blade Clutch (PTO) ___________ 30
      - Parking Brake ___________ 30
      - Front Body Latch Release ___________ 32
      - Transmission Lockout Levers ___________ 32
      - Cold Start Lever ___________ 32
      - (Jackshaft Drive Belt Release) ___________ 32
      - Suspension Seat ___________ 33
    - Instrument Panel ___________ 35
      - Voltmeter ___________ 36
      - Water Temperature Gauge ___________ 36
      - Oil Pressure Warning Light/Horn ___________ 36
      - Water Temperature Warning Light/Horn ___________ 36
      - Ignition Switch ___________ 36
      - Light Switch (For Optional Lights) ___________ 37
      - Hourmeter ___________ 37
      - Circuit Breakers ___________ 37
      - Warning Horn ___________ 37
    - Starting the Engine ___________ 37
    - Adjusting Ground ___________ 39
    - Speed and Steering ___________ 39
    - Engaging the Blade Drive ___________ 41
    - Stopping the Machine ___________ 42
    - Adjusting Cutting Height ___________ 43
    - Transmission Lockout ___________ 43
    - Recommendations for Mowing ___________ 44
    - Recommendations for Tilt-Up Deck Operation/Transport ___________ 45
  - Grass Handling System (GHS) __________ 46
    - General Information ___________ 47
    - Clogging Checklist ___________ 48
    - Using the Tilt-Up Deck ___________ 49
    - Using the GHS Catcher ___________ 49
    - Powerfil® ___________________ 49
    - “Full” Signal Horn ___________ 49
    - Cleaning the GHS Exhaust Screen ___________ 50
    - Dumping the Catcher ___________ 50
    - Tailgate Dumping ___________ 50
    - Using the Dump Bag ___________ 51
    - Power Dump Option ___________ 52
    - Hi-Dump® Option ___________ 52
## Table of Contents

**Maintenance Instructions**  
MAINTENANCE SCHEDULE CHART __________  56  
IMPORTANT TIPS FOR CARE  
OF THE KUBOTA ENGINE __________ 57  
- Fuel System __________ 57  
- Starting/Stopping __________ 57  
- Cooling System __________ 57  
- Air Cleaner System __________ 57  
- Oil __________ 57  
**LUBRICATION** __________ 58  
- Engine Oil __________ 58  
  - Engine Break-In Oil __________ 58  
  - Checking Engine Crankcase Oil Level __________ 58  
  - Changing Engine Crankcase Oil/Oil Filter __________ 58  
- Grease Fitting and Oil Point Lubrication __________ 59  
- Mower Deck Gearbox Lubrication __________ 62  
  - Checking Gearbox Oil Level __________ 62  
- DS52 or DS62 Mower Deck Lubrication __________ 62  
- Mower Deck Spindle Lubrication __________ 63  
- Tractor PTO Gearbox Lubrication __________ 63  
  - Checking Gearbox Oil Level __________ 63  
  - Changing Gearbox Oil __________ 63  
- Gear Axle Lubrication __________ 63  
- Hydrostatic Transmission Fluid __________ 64  
  - Checking Hydrostatic Transmission Fluid Level __________ 64  
**CLEANING** __________ 65  
- Engine Air Cleaner System __________ 65  
  - Turbine Precleaner __________ 65  
  - Donaldson Radialseal™ Air Cleaner __________ 66  
- Engine Cooling System __________ 67  
  - Radiator Screen and Cooling Fins __________ 67  
  - Flushing Radiator and Changing Coolant __________ 68  
- Grass Buildup in Mower Deck Housing __________ 68  
- GHS Blower __________ 69  
- GHS Exhaust Screen __________ 69  
- Hydrostatic Transmission Cooling Fins __________ 69  
**CHECKING/SERVICING** __________ 70  
- Engine Cooling System __________ 70  
  - Coolant Level __________ 70  
  - Alternator Belt Tension __________ 71  
- Security of Air Filtration Components __________ 71  
- Battery __________ 71  
  - Electrolyte Level __________ 71  
  - Cleaning the Terminals __________ 71  
  - Charging the Battery __________ 72  
- Tire Pressure __________ 72  
- Wheel Bolt Torque __________ 72  
- Sharpen Mower Blades __________ 72  
- Drive Belts __________ 73  
- Mower Deck Gearbox Oil Seals __________ 74  
- Fuel Lines and Clamps __________ 74  
- Radiator Hoses and Clamps __________ 74  
- Engine Valve Clearance __________ 74  
- Fuel Injection Nozzle Pressure __________ 74  
- Transmission Control Setting __________ 74  
  - Neutral-Park __________ 74  
  - Straight Ground Tracking __________ 74  
- Blade Brake Action __________ 75  
- PTO U-Joints __________ 75  
- Safety Switch System __________ 75  
- Forward Speed Control Friction Lock __________ 75  
**REPLACING/REPAIRING** __________ 76  
- Drive Belts __________ 76  
  - Engine PTO Drive Belt __________ 77  
  - Jackshaft Drive Belt __________ 78  
  - GHS Blower Drive Belt __________ 79  
  - Hydrostatic Ground Drive Belt __________ 80  
  - Engine Alternator Belt __________ 81  
- Fuel Filter __________ 82  
- Blade Overload Shear Bolts __________ 82  
- Mower Blades __________ 83  
**ADJUSTMENTS** __________ 84  
- Transmission Control __________ 84  
  - Set FSC Travel Limits (Stop) __________ 84  
  - Set Maximum Forward __________ 85  
  - Travel Speed (Stop) __________ 85  
  - Neutral Function Adjustment __________ 85  
  - Straight Ground Travel Adjustment __________ 86  
- Blade Clutch (PTO) __________ 87  
  - Clutch Disengagement/Brake Action __________ 87  
  - Clutch Engagement/Belt Tension __________ 87  
- Forward Speed Control Friction Lock __________ 88  
- Steering Handles __________ 89  
- Tilt-Up Deck Adjustable Stop __________ 89  
- GHS “Full” Signal Horn Adjustment __________ 90  
**Warranty** __________ 91
General Information

HIGHLIGHTED INFORMATION

Walker Manufacturing recommends that any service requiring special training or tools be performed by an authorized Walker Mower dealer. There are several general practices to be aware of in the area of safety. Most accidents associated with the operation or maintenance of a Walker Mower are caused by disregarding basic safety precautions or specific warnings. Such accidents, in most cases, can be prevented by being aware of the dangers present.

Information of special importance has been highlighted in bold type in this manual. Refer to Safety Instructions for the meanings of DANGER, WARNING, CAUTION, IMPORTANT, and NOTE.

GLOSSARY

There are many terms that are either unique to this equipment or that are used as acronyms. The following terms and their definitions will help while using this manual:

- **DECK** is the mowing attachment mounted on the front of the tractor which includes the carrier frame, deck housing, belt or gear drive components, and cutter blades.
- **FORWARD SPEED CONTROL (FSC)** controls the maximum forward speed of the tractor; functioning as a cruise control.
- **GRASS HANDLING SYSTEM (GHS®)** collects mowed material and deposits it in the catcher.
- **GRASS-PAK® SWITCH** is mounted on the grass delivery spout (in the catcher) and activates the "full" signal horn when the grass catcher is full.
- **GROUND DRIVE** refers to the dual hydrostatic transmissions which drive the main wheels.
- **HYDROSTATIC TRANSMISSION** transmits and controls power from the ground drive belt to the main drive wheel.
- **LEFT HAND (LH)** refers to the left-hand side of the tractor when the operator is seated facing forward in the tractor seat.
- **POWER TAKE-OFF (PTO)** transmits engine power to run the cutter blades and GHS blower.
- **POWERFIL®** spreads the mowed material throughout the interior of the grass catcher by an oscillating delivery spout.
- **RIGHT HAND (RH)** refers to the right-hand side of the tractor when the operator is seated facing forward in the tractor seat.
- **SIDE DISCHARGE (SD)** discharges mowed material from the right side of the mower deck.
- **STEERING LEVERS** steer the tractor by controlling the dual hydrostatic transmissions.
- **TRACTOR** is the prime mover, including the engine, drivetrain, operator seat, and controls to operate the mower.
- **TRANSMISSION LOCKOUT** releases the hydrostatic transmissions to permit freewheeling the tractor.

IDENTIFYING NUMBER LOCATIONS

The tractor serial number plate is affixed to the tractor body just below the left rear corner of the seat. The mower deck serial number plate is affixed alongside the angle iron framing on the LH side of the LH mower blade drive. Model and serial numbers are helpful when obtaining replacement parts and maintenance assistance. For ready reference, please record these numbers in the space provided.

<table>
<thead>
<tr>
<th>Tractor Model No.</th>
<th>________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor Serial No.</td>
<td>________________________</td>
</tr>
<tr>
<td>Deck Serial No.</td>
<td>________________________</td>
</tr>
<tr>
<td>Engine Model No.</td>
<td>________________________</td>
</tr>
<tr>
<td>Engine Serial No.</td>
<td>________________________</td>
</tr>
<tr>
<td>Date of Purchase</td>
<td>________________________</td>
</tr>
</tbody>
</table>

Fill In By Purchaser
**SERVICING OF ENGINE AND DRIVETRAIN COMPONENTS**

The detailed servicing and repair of the engine, hydrostatic transmission, and gearboxes are not covered in this manual. Only routine maintenance and general service instructions are provided. For the service of these components during the limited warranty period, it is important to find a local, authorized servicing agent of the component manufacturer. **Any unauthorized work done** on these components during the warranty period may void the warranty. If you have any difficulty finding an authorized outlet or obtaining warranty service, please contact our Service Department for assistance:

**Walker Manufacturing Company**
5925 E. Harmony Road
Fort Collins, CO 80528
1-970-221-5614
www.walkermowers.com

Service manuals are available for each of these components from their respective manufacturers as follows:

- **Kubota Engines**
  Kubota Engine America Corp.
  505 Schelter Rd
  Lincolnshire, IL 60069

- **Hydrostatic Transmissions**
  Eaton Fluid Power Group
  Hydraulics Business USA
  14615 Lone Oak Road
  Eden Prairie, MN 55344 USA
  952-937-9800
  www.eaton.com/hydraulics

- **Gearboxes (Deck)**
  Peerless Gear
  1555 South Jackson St.
  Salem, IN 47167 USA
  866-536-8310
  www.peerlessgear.com
Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>D21d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGINE</strong></td>
<td></td>
</tr>
<tr>
<td>Manufacturer/Model</td>
<td>Kubota D722, 3 Cyl., Diesel (Liquid Cooled)</td>
</tr>
<tr>
<td>Displacement cu. in. (cc)</td>
<td>43.9 (719)</td>
</tr>
<tr>
<td>Max. Power HP (kW)</td>
<td>20.9 (15.6) @ 3600 RPM</td>
</tr>
<tr>
<td>Governed RPM</td>
<td>3600</td>
</tr>
<tr>
<td>Max. Torque lb·ft (N·m)</td>
<td>34 (46.1)</td>
</tr>
<tr>
<td>Idle RPM</td>
<td>1000</td>
</tr>
<tr>
<td>Crankcase Capacity qt (L)</td>
<td>3.4 (3.2)</td>
</tr>
<tr>
<td>Crankcase Lubricant</td>
<td>API CF or Higher Grade Oil Only with 10W-30 or 15W-40 Viscosity Above 14° F (-10° C) or 10W-30 Below 14° F (-10° C)</td>
</tr>
<tr>
<td>Oil Filter</td>
<td>Kubota P/N HH150-32430</td>
</tr>
<tr>
<td>Fuel Tank Capacity gal (L)</td>
<td>4.7 (17.8)</td>
</tr>
<tr>
<td>Fuel</td>
<td>Diesel Fuel 2-D</td>
</tr>
<tr>
<td>Cooling System Capacity gal (L)</td>
<td>1.25 (4.74)</td>
</tr>
<tr>
<td>Cooling Fan</td>
<td>Electric Radiator Cooling Fan with Reversible Self-Cleaning Action</td>
</tr>
<tr>
<td>Coolant</td>
<td>50/50 Pre-Mix Antifreeze/Water</td>
</tr>
<tr>
<td>Air Cleaner</td>
<td>Remote Mounted Donaldson Radialseal™ (Walker P/N 5090-1 Primary/5090-3 Safety Filter)</td>
</tr>
<tr>
<td><strong>ELECTRICAL SYSTEM</strong></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>12 Volt, 41AH, 340 CCA (Interstate U1-SP40)</td>
</tr>
<tr>
<td>Charging System</td>
<td>40 Amp Automotive Alternator</td>
</tr>
<tr>
<td>Charging Output</td>
<td>40 Amp DC (Regulated)</td>
</tr>
<tr>
<td>System Polarity</td>
<td>Negative Ground</td>
</tr>
<tr>
<td>Ignition</td>
<td>Diesel with Glow Plugs</td>
</tr>
<tr>
<td>Starter</td>
<td>12 Volt Electric Key and Solenoid Operated</td>
</tr>
<tr>
<td>Interlock Switch</td>
<td>Ignition Lockout by Seat Switch, Transmission Neutral and Blade Clutch</td>
</tr>
<tr>
<td>Circuit Breakers</td>
<td>Auto Reset (40A) - Electric System</td>
</tr>
<tr>
<td></td>
<td>Auto Reset (30A) - Radiator Fan</td>
</tr>
<tr>
<td></td>
<td>Manual Reset (10A) - Instrument Panel</td>
</tr>
<tr>
<td></td>
<td>Manual Reset (7A) - Instrument Panel</td>
</tr>
<tr>
<td><strong>TRANSMISSION</strong></td>
<td></td>
</tr>
<tr>
<td>Manufacturer/Model</td>
<td>Dual Hydrostatic Eaton Model 7, Each Wheel Independently Driven</td>
</tr>
<tr>
<td>Steering</td>
<td>Hand Lever Control / Individual Wheel</td>
</tr>
<tr>
<td>Forward Speed Control</td>
<td>Precision Friction Lock Lever, Cruise Control, with Neutral-Park Position</td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>D21d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSMISSION (continued)</strong></td>
<td></td>
</tr>
<tr>
<td>Service Brake</td>
<td>Dynamic Braking through Hydrostatic Transmissions</td>
</tr>
<tr>
<td>Parking Brake</td>
<td>Mechanical Pin Lock in Transmission Gear</td>
</tr>
<tr>
<td>Neutral</td>
<td>Transmission Release by Manual Dump Valve</td>
</tr>
<tr>
<td>Final Drive</td>
<td>Gear Drive Axle</td>
</tr>
<tr>
<td><strong>Transmission Fluid</strong></td>
<td></td>
</tr>
<tr>
<td>Factory Service</td>
<td>Mobil 1 Synthetic Motor Oil (15W-50)</td>
</tr>
<tr>
<td>Transmission Oil Capacity fl oz (L)</td>
<td>19 (0.56)</td>
</tr>
<tr>
<td>Transmission Cooling</td>
<td>Cooling Fan Mounted on Drive Pulley</td>
</tr>
<tr>
<td><strong>Ground Travel Speed</strong></td>
<td></td>
</tr>
<tr>
<td>Forward MPH (km/h)</td>
<td>0-7 (0-11.3) Infinitely Variable</td>
</tr>
<tr>
<td>Reverse MPH (km/h)</td>
<td>0-5 (0-8) Infinitely Variable</td>
</tr>
<tr>
<td><strong>BLADE DRIVE</strong></td>
<td></td>
</tr>
<tr>
<td>PTO Shaft</td>
<td>Quick Disconnect Splined Shaft with Two (2) High-Speed U-Joints</td>
</tr>
<tr>
<td>Blade Drive Clutch and Brake</td>
<td>Manual Belt Tightener Clutch and Band Brake [Stops Blades within Five (5) Seconds of Disengagement]</td>
</tr>
<tr>
<td><strong>TIRE SIZE</strong></td>
<td></td>
</tr>
<tr>
<td>Deck Caster</td>
<td>8 x 3.00-4 Semi-Pneumatic (Standard)</td>
</tr>
<tr>
<td></td>
<td>8 x 3.00-4 Pneumatic 4-Ply (Optional)</td>
</tr>
<tr>
<td></td>
<td>11 x 4.00-5 (Pneumatic 4-Ply, DS52, DS62, DS74 Only)</td>
</tr>
<tr>
<td>Drive</td>
<td>18 x 9.50-8 (Pneumatic 4-Ply, Standard)</td>
</tr>
<tr>
<td></td>
<td>18 x 10.50-10 (Pneumatic 4-Ply, Optional Low-Profile)</td>
</tr>
<tr>
<td>Tailwheel</td>
<td>13 x 5.00-6 (Pneumatic 4-Ply, Standard Dual)</td>
</tr>
<tr>
<td><strong>TIRE PRESSURE PSI (KPA)</strong></td>
<td></td>
</tr>
<tr>
<td>Deck Caster Wheel*</td>
<td>20 (137)</td>
</tr>
<tr>
<td>Drive</td>
<td>15 (103)</td>
</tr>
<tr>
<td>Tailwheel</td>
<td>20 (137)</td>
</tr>
<tr>
<td>* If equipped with optional pneumatic tires</td>
<td></td>
</tr>
<tr>
<td><strong>DRIVE BELTS</strong></td>
<td></td>
</tr>
<tr>
<td>Engine PTO</td>
<td>Walker P/N 7230</td>
</tr>
<tr>
<td>Jackshaft Drive</td>
<td>Walker P/N 6238</td>
</tr>
<tr>
<td>Ground Drive</td>
<td>Walker P/N 7248</td>
</tr>
<tr>
<td>Blower (GHS Model)</td>
<td>Walker P/N 7234-2</td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>D21d</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAT</td>
<td>Full Spring Suspension with Dampening and Adjustments for Back Angle, Lumbar Support, and Operator Weight; Includes Adjustable/Retractable Armrests.</td>
</tr>
</tbody>
</table>

### FRAME/BODY CONSTRUCTION

<table>
<thead>
<tr>
<th>Frame</th>
<th>All Welded Unitized Steel Chassis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>14 Gauge Steel</td>
</tr>
<tr>
<td>Deck</td>
<td>11 Gauge Steel</td>
</tr>
<tr>
<td>GHS Catcher and Chutes</td>
<td>Molded Cross-Linked Polyethylene (High Impact Material, UV Stabilized)</td>
</tr>
</tbody>
</table>

### GHS SYSTEM (Optional)

| Blower | 10.5 in. Diameter, Three-Blade Paddle Wheel |
| Blower Brake | Band Brake [Works in Combination with PTO Clutch, Stops Blower within Five (5) Seconds of PTO Disengagement] |
| Max. Blower RPM | 4000 |
| Hi-Dump Option | 200 (91) |
| Max. Lift Capacity lb (kg) | 93 / 10 / 352 |
| Grass Catcher Capacity | Oscillating Vane Switch Mounted on Grass Delivery Spout Triggers Horn Signal |
| Powerfil® | Oscillating Delivery Spout Driven by 12 Volt Electric Gearmotor Spreads Material throughout Interior of Catcher @ 35 Cycles/Min |

### MOWER DECK

<table>
<thead>
<tr>
<th>Recommended Cut Width</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection</td>
<td>42 to 52 in. (107 to 132 cm)</td>
</tr>
<tr>
<td>Side Discharge</td>
<td>42 to 74 in. (107 to 188 cm)</td>
</tr>
<tr>
<td>Mulch</td>
<td>42 to 48 in. (107 to 122 cm)</td>
</tr>
<tr>
<td>Cutting Height</td>
<td>1.5 to 4 in. (4 to 10 cm) or 1.5 to 4.5 in. (4 to 11.5 cm) (DS52 &amp; DS62 Belt Driven Decks Only)</td>
</tr>
<tr>
<td>Deck Suspension</td>
<td>Independent Torsion-Flex Frame with Caster Wheels and Counterweight Springs</td>
</tr>
</tbody>
</table>
# Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>D21d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIMENSIONS (Tractor and Mower)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Length in. (cm)</strong>  </td>
<td></td>
</tr>
<tr>
<td>Tractor Only</td>
<td>64.5 (164)</td>
</tr>
<tr>
<td>Tractor Wheel Base</td>
<td>41 (104)</td>
</tr>
<tr>
<td>Tractor with Tilted Deck (Approximate)</td>
<td>77 (195.5)</td>
</tr>
<tr>
<td>Tractor with 48&quot; Collection Deck (DC48-1)</td>
<td>93 (236)</td>
</tr>
<tr>
<td><strong>Width in. (cm)</strong>  </td>
<td></td>
</tr>
<tr>
<td>Tractor Only (Outside Tire)</td>
<td>39.25 (100)</td>
</tr>
<tr>
<td>Tractor with 48&quot; Collection Deck (DC48-1)</td>
<td>49.25 (125)</td>
</tr>
<tr>
<td><strong>Height in. (cm)</strong>  </td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td>50 (127)</td>
</tr>
<tr>
<td><strong>Weight lb (kg)</strong>  </td>
<td></td>
</tr>
<tr>
<td>NC Tractor Only</td>
<td>787 (357)</td>
</tr>
<tr>
<td>GHS Tractor Only</td>
<td>959 (435)</td>
</tr>
<tr>
<td>NC Tractor with 48&quot; Side Discharge Deck (DS48-1)</td>
<td>991 (450)</td>
</tr>
<tr>
<td>GHS Tractor with 48&quot; Collection Deck (DC48-1)</td>
<td>1178 (534)</td>
</tr>
</tbody>
</table>

**NOTE:** The manufacturer reserves the right to make changes in specifications shown herein at any time without notice or obligation. The specifications listed are for a standard configuration tractor, and may change with the addition of optional equipment.
Component Identification

NOTE: Control Identification shown in Operating Instructions section.

- Anti-Scuff Roller
- Catcher Lift / Dump Handle
- Fuel Tank and Cap
- Transmission Control Rod Adjustment Nut (RH)
- Deck Support Arm
- Deck Lift Handle (Cutting Height Adjustment)
- Tilt-Up Hook (Not Visible)
- Turbine Pre-cleaner
- Grass Handling System 10.0 Bushel Catcher
- Tilt-Up Latch
- Spring Clip
- Counterweight Spring and Protective Cover
- Transmission Control Rod Adjustment Nut (LH)
- Deck Support Pins and Height Adjustment Hitch Pins
- Tilt-Up Deck Handle
- Footrests
- Deck Caster Wheels

Front View and Right Side View
Component Identification

Rear View and Left Side View

- Component Identification
- Left Hand Drive Wheel
- Radiator Guard
- Radiator Screen
- Muffler and Tailpipe
- Fuel Filter
- Catcher
- Anti-Scuff Roller
- Coolant Recovery Tank
- Tailwheel Fork and Wheels
- Left Hand Drive Wheel
- Radiator Cap
- Gas Spring Cover
- Catcher Lift / Dump Handle
- Instrument Panel Guard
- Instrument Panel Box (Shock Mounted)
- Gas Spring Cover (Not Visible)
- Catcher Door Gas Spring (Not Visible)
- Removable Grass Catcher Screen (Not Visible)
- Catcher Door
- Catcher Air Exhaust
- Dump Plate
- Catcher Door Handle
Component Identification

Top View (Engine Compartment)
Pay particular attention to any information labeled DANGER, WARNING, CAUTION, IMPORTANT, and NOTE in this manual.

When you see the Safety Alert Symbol (⚠️), read, understand, and follow the instructions. Failure to comply with safety instructions may result in personal injury.

The seriousness or degree of importance of each type of information is defined as follows:

**DANGER**

An IMMEDIATE hazard that WILL result in severe personal injury or DEATH, if warning is ignored and proper safety precautions are not taken.

**WARNING**

A POTENTIAL hazard that COULD result in severe personal injury or DEATH, if warning is ignored and proper safety precautions are not taken.

**CAUTION**

Possible hazards or unsafe practices that MAY result in MODERATE personal injury or property damage, or machine damage, if warning is ignored and proper safety precautions are not taken.

**IMPORTANT:** Identifies mechanical information demanding special attention, since it deals with the possibility of damaging a part or parts of the machine.

**NOTE:** Identifies information worthy of special attention.

Walker Manufacturing cannot predict every potentially dangerous situation. Therefore, items labeled as such in this manual do not cover all conceivable situations. Any person using procedures, tools, or control techniques not recommended by Walker Manufacturing must take full responsibility for safety.

The Walker Rider Lawnmower has been designed with many safety features to protect the operator from personal harm or injury. However, it is necessary for the operator to use safe operating procedures at all times. **Failure to follow safety instructions contained in this manual may result in personal injury or damage to equipment or property.**

If you have any questions concerning setup, operation, maintenance, or safety, please contact your authorized Walker Mower dealer or call Walker Manufacturing Company at (970) 221-5614.

**BEFORE OPERATING**

1. Read and understand the contents of this Operator’s Manual before starting and operating the machine. Become thoroughly familiar with all machine controls and how to stop the machine and disengage the controls quickly. Replacement Operator’s Manuals are available by sending the Model and Serial Number to:

   **Walker Manufacturing Company**
   5925 East Harmony Road
   Fort Collins, CO 80528

2. **Never allow children to operate rider mower.** Do not allow adults to operate without proper instruction.

3. **Clear the area to be mowed of any foreign objects** which may be picked up and thrown by cutter blades. Pick up all sticks, stones, wire, and any other debris.

4. Keep everyone, especially children and pets, a safe distance away from the area being mowed. **Do not mow with bystanders in the area.**

5. Do not operate the machine barefoot or wearing sandals, sneakers, tennis shoes, or similar lightweight footwear. **Wear substantial protective footwear.**
6. Do not wear loose fitting clothing that could get caught in moving parts. Do not operate this machine while wearing shorts; always wear adequate protective clothing, including long pants. Wearing safety glasses, safety shoes, and a helmet is advisable and required by some local ordinances and insurance regulations.

7. Prolonged exposure to loud noise can cause impairment or loss of hearing. Operator hearing protection is recommended; particularly for continuous operation of the GHS Model due to blower noise level. Wear a suitable hearing protective device, such as earmuffs or earplugs.

8. Keep all protective shields and safety devices in place. If a protective shield, safety device, or decal is damaged, unusable, or missing, repair or replace it before operating the machine.

9. Be sure interlock switches are functioning correctly, so the engine cannot be started unless the Forward Speed Control lever is in the NEUTRAL-PARK position, and the PTO clutch is in the DISENGAGED position. Also, the engine should stop if the operator lifts off the seat with either the Forward Speed Control (FSC) out of the NEUTRAL-PARK position or the PTO clutch in the ENGAGED position.

   **NOTE:** There is a 1/2 second time delay function on the seat switch to avoid engine power interruption when driving over bumps.

10. Handle diesel fuel with care:
    
    a. Use an approved fuel container.
    
    b. Never add fuel to a running engine or hot engine (allow hot engine to cool several minutes).
    
    c. Keep matches, cigarettes, cigars, pipes, open flames, or sparks away from the fuel tank and fuel container.
    
    d. Always fill the fuel tank outdoors using care. Fill to about one inch from the top of the tank. Use a funnel or spout to prevent spilling.
    
    e. Replace the machine fuel cap and container cap securely and clean up any spilled fuel before starting the engine.

11. Never attempt to make any adjustments while the engine is running, except where specifically instructed to do so.

12. The electrical system battery contains sulfuric acid. Avoid any contact with skin, eyes, and clothing. Keep the battery and acid out of reach of children.

---

**WARNING**

This product can expose you to chemicals including Di-(2-ethylhexyl) phthalate which is known to the State of California to cause cancer, and Di-(2-ethylhexyl) phthalate, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
Safety Instructions - Operating

1. **Operate the mower only in daylight** or in good artificial light with good visibility of the area being mowed.

2. Sit on the seat when starting the engine and operating the machine. Keep feet on the deck footrests at all times when the tractor is moving and/or mower blades are operating. **Never operate the tractor without a deck or implement installed.**

3. For a beginning operator, **learn to steer (maneuver) the tractor with a slow engine speed before attempting any mowing operation.** Be aware that, with the front mounted mower configuration, the back of the tractor swings to the outside during turns.

   **DANGER**

   Do not mow around overhanging tree branches or bushes at the same height as the operator's torso and head where inadvertent contact may cause injury.

4. Remember, for an emergency stop, the forward motion of the tractor can always be stopped by pulling the Forward Speed Control (FSC) into the **NEUTRAL-PARK** position.

5. In case either of the transmission drive belts break during operation, and if the machine is on a slope, the machine will freewheel down the slope. **To maintain control,** immediately (1) Release the steering levers and simultaneously (2) Move the FSC to the **NEUTRAL-PARK** position. When the machine is stopped or moving slowly, engage the parking brake.

   **NOTE:** The emergency stop procedure is exactly the same procedure as used to normally stop and park the machine.

6. Disengage the blade clutch and put the FSC in the **NEUTRAL-PARK** position before starting the engine (an ignition interlock switch normally prevents starting of the machine if these controls are in the **OPERATING** position).

7. **Do not operate machine if the operator presence safety switch system is not working.** Verify proper operation by having the operator lift off the seat with the engine running and moving two controls, one at a time; (1) Move the FSC lever out of the **NEUTRAL-PARK** position, and (2) Engage the PTO Clutch. Moving either control should stop the engine after a 1/2 second delay.

8. **Do not run the engine in a confined area without adequate ventilation.** Exhaust fumes are hazardous and can be deadly.

9. **Do not carry passengers** - maximum seating capacity is one (1) person.

10. Watch for holes, rocks, and roots in the terrain and for other hidden hazards. When mowing tall grass, mow higher than desired to expose any hidden obstacles. Then, clean the area and mow to the desired height.

11. **Avoid sudden starts or stops.** Before backing the machine up, look to the rear to be sure no one is behind the machine. Watch carefully for traffic when crossing or working near roadways.

12. When moving forward, do not suddenly put the tractor in reverse by rapidly pulling on the steering levers, especially when going downhill, as this can lift the tractor tail wheel off the ground and set up a bucking motion due to operator overcontrol. If bucking does occur, immediately stop the bucking action by pulling the Forward Speed Control (FSC) lever into the **NEUTRAL-PARK** position.

13. Disengage the blade drive when transporting the machine across drives, sidewalks, etc. **Never raise the mower deck while blades are rotating.**

   **DANGER**

   Do not mow or dump grass within 5 feet (1.5 meters) of an embankment or retaining wall with drop off.
14. The maximum recommended slope operating angle is 15 degrees or 26% grade. When operating the machine on a slope, reduce speed and use caution to start, stop, and maneuver. To prevent tipping or loss of control of the machine, avoid sharp turns or sudden changes in direction. **Do not operate the machine on a slope greater than 15 degrees.**

15. Never adjust cutting height with the engine running. **Before** adjusting cutting height or servicing, disengage the blade clutch (PTO), stop the engine, and remove the ignition key. Wait for all movement to stop before getting off the seat. **NOTE:** A blade/blower brake should normally stop drive line rotation within five (5) seconds of disengaging the PTO clutch.

16. For side discharge mower decks, **do not operate with the grass deflector shield removed.** Keep the deflector in the lowest possible position.

17. For tractors equipped with tilt-up deck, **observe the following:**
   a. Do not move tractor with deck in tilt-up position.
   b. Never tilt body forward with deck in tilt-up position.

18. For GHS equipped models, **do not operate the machine with the grass catcher in the DUMP position or with the back door OPEN.** Dangerous projectiles may be thrown out of the discharge chute or the back of the grass catcher.

19. For GHS equipped models, **use care when closing the grass catcher door.** Keep fingers and hands away from the hinge and pinch points when the door is being closed. Also, keep fingers and hands clear of the door frame. The door may slam shut with considerable force.

20. In case of a clogged or plugged mower deck or GHS catching system:
   a. Disengage the blade clutch (PTO), engage the parking brake, and turn the engine off before leaving the seat.
   b. **LOOK** to make sure blade drive shaft and blower drive pulley movement has stopped before trying to unclog the system.
   c. Disconnect the electrical plug on the fuel shut-off solenoid.
   d. Never place hands under the deck or in the GHS blower - use a stick or similar tool to remove clogged material.

21. If the cutting blades strike a solid object or the machine begins to vibrate abnormally, **immediately disengage the blade clutch (PTO), stop the engine, and wait for all moving parts to stop.** To prevent accidental starting, disconnect the electrical plug on the fuel shut-off solenoid. Thoroughly inspect the mower and repair any damage before restarting the engine and operating the mower. Make sure cutter blades are in good condition and blade nuts are torqued to 60 lb·ft (81 N·m) for gear driven decks, and blade bolts torqued to 70 lb·ft (95 N·m) for belt driven decks.

22. **Do not touch the engine or muffler while the engine is running** or immediately after stopping the engine. These areas may be hot enough to cause serious burns.

23. Never remove the radiator pressure cap when the engine is hot (hot water may spray and cause burns).

24. **Do not use ether or any starting fluid** to assist starting the engine in cold weather.

25. When leaving the machine unattended, **disengage the blade clutch (PTO), stop the engine, and remove the key.**

---

**CAUTION**

Use leg muscles and firm footing when lifting the catcher to dump; avoid bending at the waist and using back muscles in order to prevent back injury.
1. To prevent accidental starting of the engine when servicing or adjusting the machine, remove the key from the ignition switch and disconnect the electrical plug on the fuel shut-off solenoid.

2. To reduce fire hazards, keep the engine free of grass, leaves, excessive grease, and dirt.

3. Keep all nuts, bolts, and screws tight to ensure the machine is in a safe, working condition. Check the blade mounting nuts frequently, making sure they are tight.

4. Perform only maintenance instructions described in this manual. Unauthorized maintenance operations or machine modifications may result in unsafe operating conditions.

5. If the engine must be running to perform a maintenance adjustment, keep hands, feet, and clothing away from moving parts. Do not wear jewelry or loose clothing.

6. Always use the proper engine service manual when working on the engine. Unauthorized maintenance operations or modifications to the engine may result in unsafe operating conditions.

7. Do not attempt to service the engine fuel injection system, which contains high pressure fuel and may cause injury if mishandled. For service of the pressurized fuel system, including the fuel pump, fuel lines, and fuel injectors, contact your Walker dealer or authorized Kubota service dealer.

8. Altering the equipment or engine in any manner which adversely affects its operation, performance, durability, or use will VOID the warranty and may cause hazardous conditions.

9. Never attempt to disconnect any safety devices or defeat the purpose of these safety devices.

10. Do not change the engine governor settings or overspeed the engine. The governor has been factory-set for maximum-safe engine operating speed.

11. Use genuine factory replacement parts. Substitute parts may result in product malfunction and possible injury to the operator and/or others.

12. Use care when charging the battery or performing maintenance on the battery and electrical system:
   a. Make sure the battery charger is unplugged before connecting or disconnecting cables to the battery.
   b. Charge the battery in a well-ventilated space, so gases produced while charging can dissipate. Make sure the battery vents in the caps are open.
   c. Keep sparks, flames, and smoking materials away from the battery at all times. To avoid sparks, use care when removing battery cables from posts.
   d. Disconnect both battery cables before unplugging any wiring connectors or making repairs on the electrical system.

IMPORTANT: Keep all applicable manuals immediately accessible to anyone who may operate or service this machine.
SAFETY, CONTROL, AND INSTRUCTION DECALS

Safety, Control, and Instruction Decals are installed on the machine; if any are missing, illegible, or damaged, a replacement should be ordered and installed before putting the machine into operation. The Decal Part Number is listed below and in the Parts Manual.

   ● Engage parking brake.
   ● Remove ignition key.

2. Forward Speed Control
   ● Move lever forward to increase speed; back to stop.

3. Warning – do not operate the machine without a deck or other implement attached.

4. PTO Clutch Lever
   ● Move lever forward to disengage PTO clutch; back to engage.

5. Warning – do not engage PTO clutch with PTO shaft disconnected.

---

Location: Rear Cross Member of Front Body
Part Number: 8600-16

1. Important - Lower front body before lowering catcher box.

Location: Rear of Grass Catcher Exhaust Screen
Part Number: 5869

---

Location: Adjacent to Blower Discharge Chute through Body
Part Number: 8600-4

1. Warning - rotating impeller is a cutting/dismemberment hazard to fingers and hands.
   ● Never reach down into the blower discharge chute.

2. Warning - thrown object hazard
   ● Never engage the PTO with grass catcher raised.

Location: RH Fender
Part Number: 8600-33

   ● Engage parking brake.
   ● Remove ignition key.

2. Forward Speed Control
   ● Move lever forward to increase speed; back to stop.

3. Warning – do not operate the machine without a deck or other implement attached.

4. PTO Clutch Lever
   ● Move lever forward to disengage PTO clutch; back to engage.

5. Warning – do not engage PTO clutch with PTO shaft disconnected.
Safety Instructions

SAFETY, CONTROL, AND INSTRUCTION DECALS

Safety, Control, and Instruction Decals are installed on the machine; if any are missing, illegible, or damaged, a replacement should be ordered and installed before putting the machine into operation. The Decal Part Number is listed below and in the Parts Manual.

Location: Each End of Mower Deck
Part Number: 8600-28

1. Warning – thrown object hazard.
   - Keep bystanders away from the machine when operating.
   - Clear lawn of debris before operating.
   - Keep any discharge deflector in place and in the lowest position.
2. Warning – rotating mower blades are a cutting/dismemberment hazard to hands and feet.
   - Keep all body parts away from rotating mower blades.
   - Do not step on end of deck.

Location: Deck Carrier Frame
Part Number: 8600-14

1. Warning – do not operate the machine with the deck tilted up.

Location: Deck Discharge Shield
(SD Decks Only)
Part Number: 5848-3

1. Warning – thrown object hazard.
   - Always keep the discharge shield in the lowest position when operating.
   - Do not remove the discharge shield.

Location: Deck Gearbox Cover
Part Number: 8600-39

1. Warning - stop engine and remove ignition key before adjusting deck cutting height.

Location: Gear Axle
Part Number: 5810-1

1. Warning – lock deck tilt-up hinge before operating the machine.
SAFETY, CONTROL, AND INSTRUCTION DECALS

Safety, Control, and Instruction Decals are installed on the machine; if any are missing, illegible, or damaged, a replacement should be ordered and installed before putting the machine into operation. The Decal Part Number is listed below and in the Parts Manual.

Location: Right Side, Behind Operator Seat
Part Number: 8600-23

1. Warning - entanglement hazard.
   - Remove ignition key before raising front body.
2. Body Tilt Latch
   - Raise lever to release.
   - Lift at back of body to raise.

Location: Catcher Door Hinge Bar, LH and RH Sides
Part Number: 8600-10

1. Caution - Pinch point.
   - Keep all body parts clear when closing grass catcher door.

Location: LH Gear Axle
Part Number: 5810-3

1. Parking Brake
   - Move lever forward to engage Parking Brake; back to disengage.

Location: Front Body, RH Side Adjacent to Operator Seat
Part Number: 8600-30

1. Throttle
   - Move lever forward to increase engine speed; back to idle.
Safety Instructions

SAFETY, CONTROL, AND INSTRUCTION DECALS

Safety, Control, and Instruction Decals are installed on the machine; if any are missing, illegible, or damaged, a replacement should be ordered and installed before putting the machine into operation. The Decal Part Number is listed below and in the Parts Manual.

Location: Instrument Panel
Part Number: 7823-5

Location: Front Body Adjacent to RH Steering Lever
Part Number: 8600-34

   Warning – wear eye and ear protection when operating the machine.

2. Warning – roll-over hazard.
   • Do not operate on slopes greater than 15 degrees.

   • Keep bystanders away from the machine when operating.

   • Keep all guards in place while engine is running.

Location: Gearbox Cover
(Gear Drive Decks Only)
Part Number: 8600-9

1. Tighten blade nuts on gear driven decks to 60 lb·ft (81 N·m).

Location: Radiator Guard
Part Number: 8600-12

1. Warning – carbon monoxide (CO) poisoning hazard.
   • CO emitted by a running engine can be deadly.
   • Do not operate indoors or in other enclosed areas.
Assembly Instructions

SETUP INSTRUCTIONS

Walker Mowers are shipped partially assembled to our distribution network, and are typically assembled by the selling dealer. For any additional assembly besides the following, contact your Walker dealer.

Tire Installation (Tractor)

- Install the drive tires using the eight (8) lug bolts supplied with the Owner’s Packet of materials. Bolts are torqued to 75 to 85 lb·ft (102 to 115 N·m). Drive tires are 18 x 9.50-8, 4-ply; rear tires are 13 x 5.00-6, 4-ply.
- Check and adjust the inflation of the tires. The tire inflation recommendations are:
  
<table>
<thead>
<tr>
<th>Component</th>
<th>PSI (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>15 (103)</td>
</tr>
<tr>
<td>Tailwheel</td>
<td>20 (137)</td>
</tr>
</tbody>
</table>

Battery Service

Raise front mower body up for battery access (refer to Front Body Latch Release in Operating Instructions). Check the battery for electrolyte level and charge. The electrolyte level should be at the bottom of the vent wells [1/4 to 1/2 in. (6 to 13 mm) above plates]. If the specific gravity is less than 1.225, the battery needs charging. If the battery has been shipped dry, or is wet but needs service, refer to the following instructions.

IMPORTANT: Make sure battery is securely mounted in the frame. A loose battery may cause damage to the case resulting in acid leakage and severe damage to the machine. A hazard may be created by damage to critical working parts and safety systems.

Wet Battery Service

If the battery has been shipped wet, but the electrolyte level is low or the battery needs to be charged then:

1. Fill each battery cell with distilled water to the bottom of the vent wells.
2. Charge battery. Refer to Battery Charging in this section.

Dry Battery Service

Activating a battery can be dangerous. The battery should be taken to a reliable service station, battery store, or power equipment dealer where a trained technician can activate the battery safely. DO NOT attempt to activate the battery unless you are experienced in battery service work. The following activation and charging instructions are provided for use by a trained battery technician.

DANGER

Battery electrolyte is a poisonous and corrosive sulfuric acid solution.

- Avoid spillage and contact with skin, eyes, and clothing - causes severe burns.
- To prevent accidents, wear safety goggles and rubber gloves when working with electrolyte.
- Neutralize acid spills with baking soda and water solution.

To fill (activate) battery with electrolyte (if battery has been shipped dry):

1. Remove the battery hold-down bar, disconnect the battery cables and lift the battery out of the tray.

IMPORTANT: Battery must be removed from the mower before filling with electrolyte.

IMPORTANT: Obtain and use only battery grade sulfuric acid electrolyte with a 1.265 specific gravity to activate the battery. DO NOT use water or any other liquid during initial activation.

2. Remove the filler caps and carefully fill each cell until the electrolyte is just above the plates.

3. After the battery is filled with electrolyte, replace the filler caps and charge the battery. Refer to Battery Charging.
Battery Charging

**DANGER**

**BATTERIES PRODUCE EXPLOSIVE GASES**

- Charge the battery in a well-ventilated area, so that gases produced while charging can dissipate.
- Keep sparks, flames, and smoking materials away from the battery at all times.
- Make sure the battery cap vents are open after the battery is filled with acid (check manifold vent on each cap).
- Make sure the battery charger is unplugged before connecting or disconnecting cables to the battery.

1. Charge the battery at 15 amps for 10 minutes. **DO NOT** exceed 20 amps maximum recommended charging rate. Charge until specific gravity is at least 1.250. Total charging time should not exceed one (1) hour.

2. After charging the battery, adjust the electrolyte level to the bottom of the vent wells [1/4 to 1/2 in. (6 to 13 mm) above the plates].

**IMPORTANT:** **DO NOT** overfill the battery. Electrolyte will overflow through the vented caps onto parts of the machine and **WILL** result in severe corrosion.

3. Install battery.

Battery Installation

**IMPORTANT:** Make sure battery is securely mounted in the frame. A loose battery may cause damage to the case resulting in acid leakage and severe damage to the machine. A hazard may be created by damage to critical working parts and safety systems.

Install the battery in the mower as shown in Battery Installation photo. Connect the positive (+) first and then the negative (−) cable to the proper battery terminal [red cable and boot connects to the Positive (+) terminal]. Slide the rubber boot up and over the battery post, making sure it covers the post completely to prevent an electrical short.

**WARNING**

Make sure the battery cap vents are open. Improper venting of the battery **COULD** cause a battery explosion.
Assembly Instructions

Mower Deck Assembly

Deck Caster Wheels Installation

1. Remove the bolt, nut and axle spacer tube from each deck caster wheel fork.

2. Fit the axle spacer tube through the wheel hub, and fit the assembly into the wheel fork.

3. Insert the 3/8-16 x 4-1/2 in. bolt through the wheel fork with the bolt head to the outside and install the 3/8-16 in. Keps nut.

4. Tighten the bolt and nut until the inner bearing race bottoms against the inside of the wheel fork (will not turn) while the wheel spins freely without binding.

5. Grease the caster pivot bearings - one grease fitting for each pivot.

Deck Discharge Chute Installation

(GHS Collection Models Only)

Mount the discharge chute hinge on top of the deck discharge opening using two (2) 1/4-20 x 1/2 in. carriage bolts and 1/4-20 ESNA nuts. Position the screws with the heads inside of the chute and the nuts on the outside. Attach spring for tilt-up action from chute to bracket on deck.
Assembly Instructions

Deck Discharge Deflector Shield Installation (Side Discharge Models Only)
Attach the side discharge deflector shield using two (2) 3/8-16 x 1-1/4 in. bolts, 3/8-16 ESNA nuts, and 3/8 in. wave spring washers. The wave washers fit between the two hinging surfaces. Tighten the nuts until the shield moves freely but is not loose.

WARNING
DO NOT operate the machine without the grass deflector shield attached and in the lowest possible position.

PTO Shaft Guard Installation
Position the shaft guard as shown and mount with two (2) 1/4-20 x 1/2 in. bolts.

PTO Shaft Guard Installation

Tilt-Up Roller Wheel Installation
Mount the two (2) tilt-up roller wheels on the brackets on the rear skirt of the deck housing using the P/N 8490 axle bolt, 3/8 in. wave spring washer and 3/8-16 in. Whiz locknut. Tighten the axle bolt until the wheel rolls freely, but is not loose.
Assembly Instructions

**Mower Deck Installation on Tractor**

*Deck Installation*

1. Lightly grease each deck support arm (2) on the tractor. Refer to Mower Deck Installation photo for location of deck support arm.

2. Engage the deck carrier frame tube sockets on the tractor support arms (refer to Discharge Chute and PTO Shaft Guard Installation photo for socket location), slide the deck onto the support arms approximately 3 in. (76 mm).

3. Retract the spring-loaded quick disconnect ring on the PTO Coupler and insert the Coupler Installation Tool (provided in Owner’s Packet) as shown in the photo below.

**NOTE:** The Coupler Installation Tool is provided for convenience, but is not required for installation.

4. Reaching under the tractor, slide the PTO coupler tube onto the deck drive shaft (align arrow decals), then install the coupler quick disconnect onto the tractor PTO drive shaft.

**IMPORTANT:** When installing the DS52 or DS62 Mower decks, make sure to retract the dolly wheel after mounting the deck on the tractor.

5. Remove Installation Tool from quick disconnect ring and make sure the ring has “snapped” securely on the spline shaft.

**IMPORTANT:** DO NOT operate tractor with Coupler Installation Tool installed.

**IMPORTANT:** To prevent damage to the mower, make sure the PTO quick disconnect is securely locked on the tractor, with the locking balls fully seated in the groove and the ring in the locked position (refer to the Quick Disconnect Ring “Locked” Position illustration). After installation, pull on the PTO coupler to check for security.

**PTO Shaft Connection**
Assembly Instructions

Quick Disconnect Ring “Locked” Position

6. Slide the deck the rest of the way on the deck arms. If the deck is collection style (GHS equipped model), the discharge chute will need to be aligned and connected to the blower inlet during the last 2 in. (51 mm) of slide action on the support arms.

NOTE: Raising the mower body may be helpful in fitting and guiding the deck chute into the blower.

7. Install the hitch pin through the hole on the end of each support arm to lock the deck in place (refer to Deck Counterweight Spring Installation photo). Two (2) hitch pins are included in the Owner’s Packet of materials.

8. Raise the mower body (instead of lifting the front of deck) and clip the counterweight springs to the receptacle on front of body. Lower the body to tension the springs. (Refer to Deck Counterweight Spring Installation photo.)

9. With the counterweight springs connected, the weight on the deck caster wheels should be 15 to 25 lb (6.8 to 11.3 kg); this adjustment is preset at the factory. If required, the spring tension can be adjusted by tightening or loosening the elastic stop nuts located underneath the lower spring hook, or contact your local dealer if additional help is required. Refer to Deck Counterweight Spring Installation photo.
**Assembly Instructions**

**Deck Leveling**

The mower deck and support frame are jig welded; within normal tolerances, very little, if any, shimming should be required to level the deck. Tire pressure will influence the levelness of the deck. Check the tire pressure of all pneumatic tires as a possible cause of the deck not being level.

1. Position mower on a smooth, level surface. Set the cutting height to the highest position - 4 in. (102 mm) - for easy access under the deck to measure blade height. Refer to **ADJUSTING CUTTING HEIGHT** in Operating Instructions.

   **NOTE:** A block of wood cut 4 in. (102 mm) high is a convenient gauge to measure blade height above ground during the leveling process.

   **WARNING**

   The machine must be shut off during this procedure.

2. Check the side-to-side level. **Rotate each blade sideways** and measure the distance from blade tip to ground on each side. If measurements vary more than 1/8 in. (3 mm), add a washer shim under the deck support pins on the low side to level the deck.

3. Check the front-to-rear level. **Rotate the blades to point forward.** Measure the distance from blade tip to ground on the front and rear. The rear of the blade should be 1/8 to 1/4 in. (3 to 6 mm) higher than the front of the blade; shim the rear (or front) deck support pins equally to achieve at least 1/8 in. (3 mm) difference.

**NOTE:** For the DS52, DR52 and DS62 decks with three (3) staggered blades, the front-to-rear level should be set using the middle blade pointing forward, and either outside blade pointing back.
Assembly Instructions

PREOPERATING CHECKLIST

Before operating the mower for the first time, and as a routine before daily operations, it is important to make sure the mower is properly prepared and ready for operation. The following is a list of items to be checked. (For a mower with frequent operation, some of these items will not need to be checked every day, but the operator should be aware of the condition of each.)

For proper fuel and lubricants refer to Specifications.

☐ FILL FUEL TANK

Fill the fuel tank with clean, fresh fuel. Clean diesel fuel is particularly important since contaminated fuel will damage the fuel injectors and injection pump.

NOTE: An electric fuel pump makes it unnecessary to bleed (purge out air bubbles) the diesel fuel injection system when initially fueling an empty fuel tank.

☐ CHECK ENGINE CRANKCASE OIL LEVEL

Check the engine crankcase oil level before use and after each 5 hours of continuous operation. Refer to LUBRICATION for Checking Engine Crankcase Oil Level in Maintenance Instructions.

☐ CHECK AND SERVICE ENGINE AIR CLEANER SYSTEM

- Check air filter restriction gauge to make sure the yellow indicator disk is in the safe operating (green) range.
- Check condition, cleanliness, and security of the complete air cleaner system (inspect air filter paper element every 100 hours). For detailed procedures, refer to CLEANING the Engine Air Cleaner System in Maintenance Instructions.

☐ CHECK ENGINE COOLING SYSTEM

- Check the radiator air intake screen to make sure the screen is clean and free of obstruction. Also, the radiator cooling fins should be inspected and cleaned if there is any buildup of dirt or debris. (Remove the intake screen assembly to inspect and clean.)
- Check the coolant levels in the radiator and overflow tank. If additional coolant is needed, refer to CHECKING/SERVICING the Engine Cooling System in Maintenance Instructions.

☐ WARNING

DO NOT remove the radiator pressure cap when engine is hot.

- Check operation of electric radiator fan by turning ignition key to the ON (RUN) position.

☐ CHECK GEAR AXLE OIL LEVEL

Refer to LUBRICATION for Gear Axle Lubrication in Maintenance Instructions.

☐ INSPECT FIVE (5) BELTS

Engine PTO Drive, Jackshaft Drive, Hydrostatic Ground Drive, Engine Alternator Belt, and GHS Blower Drive (if equipped).

DANGER

Handle diesel fuel with care. Use safe refueling procedures:

- DO NOT fill fuel tank with the engine running.
- If the engine is hot, allow to cool before refueling.
- Use an approved fuel container.
- Fuel the mower outdoors.
- DO NOT smoke while refueling.
- Avoid spilling fuel; use a funnel or spout.
- DO NOT overfill the fuel tank; fill up to about 1 in. (25 mm) below the top of tank.

IMPORTANT: DO NOT permit dirt or other foreign matter to enter the fuel tank. Wipe dirt from around the filler cap before removing. Use a clean fuel storage container and funnel.

WARNING

DO NOT remove the radiator pressure cap when engine is hot.

- Check operation of electric radiator fan by turning ignition key to the ON (RUN) position.
Assembly Instructions

☐ CHECK HYDROSTATIC TRANSMISSION OIL LEVEL

Refer to LUBRICATION for Checking Hydrostatic Transmission Fluid Level in Maintenance Instructions.

☐ CHECK FUNCTIONS OF INSTRUMENT PANEL AND WARNING HORN

Turn the ignition key to the ON (RUN) position. Voltmeter, Oil Pressure Warning Light, and Warning Horn should all operate, indicating normal function.

☐ CHECK FUNCTION OF SAFETY INTERLOCK SWITCHES

Refer to Operating Instructions to check for proper operation of safety switches, both during engine starting and with the operator leaving the seat with tractor moving forward or with the mower blades engaged.

☐ CHECK TIRE PRESSURE

Deck Caster Wheel* = 20 PSI (137 kPa)
Drive = 15 PSI (103 kPa)
Tailwheel = 20 PSI (137 kPa)
* If equipped with optional pneumatic tires

☐ CHECK AND CLEAN GRASS BUILDUP UNDERNEATH MOWER DECK (and inside GHS blower, if equipped)

Refer to CLEANING the GHS Blower in Maintenance Instructions for blower cleaning information.

⚠️ DANGER

Never operate cutter blades with deck in raised position because it is hazardous.

The tilt-up deck can be secured in the raised position by unlocking the deck lock levers on each side of the carrier frame and inserting the deck hook into the tilt-up latch on the tractor body. Before operating the tractor, make sure to re-engage the deck lock levers after lowering the deck to the normal operating position.

⚠️ DANGER

Do not operate machine with deck tilt-up pivot joint unlocked.

Do not operate the mower with deck in tilt-up position. Do not move the tractor with the deck in the tilt-up position.

☐ CHECK MOWER BLADE CONDITION, SHARPNESS, AND SECURITY OF MOUNTING

The blade mounting nuts on gear driven decks should be torqued to 60 lb·ft (81 N·m), and the blade mounting bolts on belt driven decks torqued to 70 lb·ft (95 N·m). If blade sharpening is required, refer to CHECKING/SERVICING for Sharpen Mower Blades in Maintenance Instructions.

☐ CHECK DRIVE WHEEL BOLT TORQUE

The eight (8) lug bolts mounting the drive tires should each be torqued to 75 to 85 lb·ft (102 to 115 N·m).

☐ ADJUST MOWER CUTTING HEIGHT, IF REQUIRED

Position the hitch pins in the four deck support pins. Refer to the “Cutting Height Adjustment” decal on the deck gearbox cover.

☐ PERFORM ANY ADDITIONAL PROCEDURES called for on the MAINTENANCE SCHEDULE CHART in Maintenance Instructions.
Before operating the mower, become familiar with the location and function of all operator controls. Knowing the location, function, and operation of these controls is important for safe and efficient operation of the mower.

**Engine Throttle**

The throttle control lever (red knob) is located on the left side of the seat and is used to control engine speed. Moving the lever forward toward the **FAST** position increases engine speed; moving it backward toward the **IDLE** position decreases engine speed.
Operating Instructions

**Forward Speed Control (FSC)**

Forward Speed Control (FSC) has two functions: One is to set forward travel speed, and the other is to establish the NEUTRAL-PARK position. When the FSC lever is moved into the FORWARD position, a friction lock holds any forward speed setting from 0 to 7 mph (0 to 11.3 km/h). The ground speed is proportional to the lever position; the further the lever is advanced forward, the faster the tractor moves. It is not necessary to hold the FSC in position since the friction lock maintains the selected lever position. Pulling back on the steering levers overrides the FSC setting and slows or stops forward travel. Releasing the steering levers allows the tractor to resume forward travel at the speed set by the FSC lever. To stop and park the machine, the FSC lever is moved backward to the NEUTRAL-PARK position.

**Steering Levers**

Each drive wheel is controlled by its own independent steering lever, for both steering function and FORWARD/REVERSE motion. The FSC lever sets the maximum forward speed, and also sets the forward position of the steering levers. The steering levers operate only with a backward pulling movement of the lever, which causes the drive wheel for that lever to first slow down, stop, and then reverse with a full backward lever stroke. The levers are released to the FORWARD position for "straight-ahead" ground travel.

**NOTE:** Pushing forward on the steering levers will not cause any change in tractor motion - there will be no steering lever reaction and there will be no machine damage.

**Blade Clutch (PTO)**

The blade clutch lever has two positions. Pulling the lever UP engages the PTO that drives the mower blades. Pushing the lever DOWN disengages the PTO and engages the blade brake.

**NOTE:** On GHS equipped models, the Powerfil® motor and Grass-Pak® full signal switch are activated by engaging the blade clutch. Refer to Using the GHS Catcher in this section for a complete description of GHS operation.

**Parking Brake**

The parking brake functions by locking a pin into the hydrostatic transmission pinion gear teeth. Moving the lever FORWARD engages the parking brake; moving the lever BACKWARD releases the brake.

**IMPORTANT:** Stop the tractor completely before engaging the parking brake. The parking brake uses a positive mechanical lock similar to the PARK position on an automotive automatic transmission. If the tractor is moving when the brake is engaged, it will result in sudden stoppage and possible internal damage to the axle drive.

**NOTE:** If pressure on the parking brake pin (e.g. parked on a hill) makes it impossible to release the parking brake with the parking brake lever, move the mower gently forward or backward to release the pin.
Operating Instructions

The Forward Speed Control also Establishes the **Neutral-Park** Position of the Steering Levers

**LEFT WHEEL STEERING LEVER**
- **Forward Position (No Control Change)**
- **Neutral-Park Position**
- **Reverse Drive Wheel Motion Position**

**RIGHT WHEEL STEERING LEVER**

**FORWARD SPEED CONTROL LEVER (FSC)**
- **Full Forward Ground Speed Position**
- **Intermediate Ground Speed Position**
- **Neutral-Park Position**

**PARKING BRAKE**
- **Engaged Position**
- **Disengaged Position**

**THROTTLE**
- **Fast Throttle Position**
- **Idle Position**

**BLADE CLUTCH (PTO)**
- **Pull Up to Engage**

Operating Controls (Top View from Drivers Point of View)
Operating Instructions

Front Body Latch Release

The front portion of the tractor body hinges forward for maintenance access and is latched down in the OPERATING position. To raise the body, pull the latch release up and forward.

Transmission Lockout Levers

The transmission lockout levers disengage the hydrostatic transmissions. By lifting the lever on top of the transmission and locking it into place with the lockout cam, the hydrostatic transmissions are released to permit freewheeling. By releasing the cam and lowering the lever, the transmissions are engaged for normal operation. The transmission lever in the LOCKOUT position is used to enable moving the machine without the engine running (e.g., for service). Refer to TRANSMISSION LOCKOUT in this section for operating instructions.

NOTE: The transmission plunger on the side of the transmission case (activated by the LOCKOUT LEVER) must be completely released during operation of the mower, otherwise operation of the transmission will be erratic.

Cold Start Lever (Jackshaft Drive Belt Release)

The cold start lever is used for starting the machine in cold weather [below 40° F (4° C)]. Pulling the lever DOWN disengages the jackshaft drive belt. When the jackshaft drive belt is released, the hydrostatic transmissions are removed from the engine starter cranking load.
Operating Instructions

Suspension Seat

A fully adjustable suspension seat is standard on Model D21d. This seat is adjustable for back pitch, weight, lumbar support and armrest inclination. Proper adjustment for each operator is essential to safe operation and operator comfort.

Read operating instructions in full before you use the seat.

NOTE: Driver seats that have been adjusted incorrectly have little or no vertical travel with the operator in the seat. To prevent damage to the driver’s back and to the seat, the seat must be adjusted for the driver’s weight before use and before every change of driver. To prevent injury, no objects should be placed within the moving area of the driver seat.

CAUTION: Before the tractor is used, the safety switch must be checked for proper function. The operation of the switch is checked by having the operator lift off the seat with the tractor moving forward and/or the blades engaged -- this action should cause the machine to stop. If a malfunction is detected, the tractor must not be driven; the safety switch system should be repaired or replaced before operating the mower.

CAUTION: Before the tractor is used, the safety switch must be checked for proper function. The operation of the switch is checked by having the operator lift off the seat with the tractor moving forward and/or the blades engaged -- this action should cause the machine to stop. If a malfunction is detected, the tractor must not be driven; the safety switch system should be repaired or replaced before operating the mower.

CAUTION

To eliminate any risk of accident, the seat settings must be checked to ensure they are correctly engaged before the mower is driven.

Adjustments must not be made while driving.

If you make any changes to the suspension seat (for example fitting parts which are not original GRAMMER parts) it may no longer meet the safety standards to which it is tested. Functions may be impaired, threatening your safety. For this reason, any change in design of the seat must be approved by GRAMMER (Seat Manufacturer).

IMPORTANT: Fasteners must be checked regularly for tightness. If the seat wobbles there may be loose bolts or other faults.

If you note that the seat does not function correctly (for example a defective seat suspension; improper curving of the lumbar support or damaged bellows), contact your Walker dealer immediately to arrange for repairs to be carried out. If you fail to do so, your health may be affected and the risk of accident increased.

For armrest inclination adjustment, the inclination of the armrests can be modified by turning the adjustment knob. Refer to Figure 1.

Turning the knob to the right lifts the armrest in front, turning it to the left, lowers it in front.

For weight adjustment, the weight of the respective driver must be set while sitting on the seat. Fold out the weight adjustment handle completely, hold it at the front and move it upwards or downwards (10 movements from minimum to maximum).

Before every new movement, bring the handle back to the starting position (audible locking sound). The driver’s weight has been set correctly, when the arrow is in the middle of the viewing window. Refer to Figure 2.

IMPORTANT: To prevent injury to the operator and/or damage to the seat, the setting for the driver’s weight must be checked and adjusted as necessary before the mower is driven.

When the minimum/maximum weight adjustment has been reached, you will notice an empty movement in the handle.

When you have set the weight, fold the handle completely into the locking position.
Operating Instructions

For Backrest adjustment, moving the adjustment handle upwards loosens the notching of the backrest adjustment. Refer to Figure 3.

After the adjustment, the handle must lock in the desired position. It should not be possible to move the backrest into another position when it is locked.

For Armrest height adjustment, the armrests can be folded back if required and the height individually adjusted.

For adjusting the height of the armrest, pry out the round cap (arrow) of the cover and loosen the hexagon nut (size 13mm) situated behind it. Set the armrests in the desired position (5 steps) and tighten the hexagon nut. Replace the cap onto the nut. Refer to Figure 4.

For Lumbar Support adjustment, turning the knob upwards sets the curve in the upper part of the back upholstery. Turning the knob downwards sets the curve in the lower part of the upholstery. Refer to Figure 5.

IMPORTANT: Dirt can impair the function of the seat, so make sure you keep your seat clean!

For cleaning, use a standard commercially available upholstery or plastics cleaning agent. Test first for compatibility on a small, concealed area.
Instrument Panel

This illustration shows the configuration of the switches and indicators located on the instrument panel.
Operating Instructions

Voltmeter

The voltmeter displays battery and charging system voltage. An indication of low or high voltage (the red area) indicates an electrical system failure. The cause of the failure should be determined and corrected.

Water Temperature Gauge

The water temperature gauge monitors engine cooling system temperature. If engine coolant temperature exceeds 230° F (110° C), an overheat condition exists; the water temperature light will come on and the warning horn will sound.

WARNING

If engine cooling system overheating is indicated, continued operation of the engine, even for a short time, COULD result in fire, risk of personal injury, and severe damage to equipment.

Oil Pressure Warning Light/Horn

The oil pressure warning light and horn indicate that engine oil pressure is below the safe operating level [below 7 PSI (48 kPa)]. This light (and warning horn) will come on when the ignition is turned ON, but should go off after the engine is started. If the light fails to come on when the ignition switch is turned ON, it could indicate a burned out bulb. If the light comes on during engine operation, stop the engine immediately and correct the source of the problem before further engine operation.

IMPORTANT: Continued operation of the engine with an illuminated oil pressure warning light MAY cause severe engine damage (if a low oil pressure condition exists).

Water Temperature Warning Light/Horn

The water temperature warning light and horn indicate that engine coolant temperature is above the safe operating limit and the engine is overheating. If this light comes on, there may be a problem with:

- Radiator cooling air flow (material packed into radiator cooling fins, clogged air intake screen)
- Low coolant quantity in cooling system

- Engine alternator belt
- Thermostat function
- Cooling fan not operating

Stop the engine and correct the source of the problem before further operation.

IMPORTANT: Continued operation of the engine with an illuminated water temperature warning light MAY result in severe engine damage.

Ignition Switch

The ignition switch is used to start and stop the engine (and preheat the diesel engine). The switch has four positions: OFF is the glow plug preheat position; "O" is the OFF position, "I" is the ON (RUN) position the key returns to after starting; is the START position. When starting the engine, turn the key clockwise to the START position. Do not hold the key in the START position longer than 10 seconds. If the engine does not start, return the key to the "O" position for at least 60 seconds before making a restart attempt. Prolonged cranking can damage the starter motor and shorten battery life. Release the key when the engine starts, and it will return to the ON (RUN) position. To stop the engine, rotate the key counterclockwise to the "O" position.

NOTE: When starting the engine, turn and hold the ignition key in the glow plug preheat position. The time required is approximately 10 to 30 seconds, depending on engine temperature. Refer to STARTING THE ENGINE in this section.

Glow Plug Preheat OFF ON (RUN) START

Ignition Switch
**Light Switch (For Optional Lights)**

Operates headlights (when installed).

**Hourmeter**

The hourmeter, which is located on the instrument panel, displays operating time accumulated while the ignition switch is in the **ON (RUN)** position.

The hourmeter provides maintenance reminders after certain hours of operation. The hourmeter screen will start flashing the reminder one hour prior to the recommended interval and will continue until one hour after the recommended interval (two hours). The hourmeter does not have a manual reset function.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Interval*</th>
<th>Reminder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Change (Break-In)**</td>
<td>4-6 Hours</td>
<td>CHG OIL</td>
</tr>
<tr>
<td>Lubricate and Check Levels</td>
<td>24-26 Hours</td>
<td>LUBE</td>
</tr>
<tr>
<td>Oil Change</td>
<td>49-51 Hours***</td>
<td>CHG OIL</td>
</tr>
</tbody>
</table>

* These intervals reflect the actual time that the reminder will flash (one hour prior to and one hour after the recommended interval).

** This reminder is only used one time.

*** In normal operating conditions, oil changes in 100-hour intervals are acceptable. Walker and the engine manufacturers recommend engine oil changes every 50 hours in extremely dirty or dusty conditions or for units with less than 100 hours annual use.

**NOTE:** The blinking hour glass on the display means that the meter is operating properly.

**Circuit Breakers**

Two manual reset circuit breakers are located on the instrument panel. Each has a button that pops out if the circuit breaker trips. The 10 amp circuit breaker protects the circuits to the (optional) headlights and fuel pump. The 7 amp circuit breaker protects the instrument panel circuits to the meters, warning lights and warning horn, plus the safety switch circuits, fuel valve solenoid, and the GHS. In addition, both an auto-reset 30 amp circuit breaker protecting the radiator cooling fan system and an auto-reset 40 amp master circuit breaker are mounted near the battery.

**Warning Horn**

The warning horn sounds to alert the operator that an unsafe engine condition is being indicated - when engine coolant temperature is too high or engine oil pressure is too low. If the horn sounds, check the indicator lights and correct the problem before further operation.

**STARTING THE ENGINE**

**CAUTION**

Before operating the mower, read and understand all Safety Instructions and Operating Instructions.
WARNING

NEVER run the engine in an enclosed or poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

1. Before attempting to start the engine, make sure the operator is in the seat, the Forward Speed Control is in NEUTRAL-PARK position, and the blade clutch and parking brake are DIS-ENGAGED.

NOTE: Release parking brake to prevent extra load on the starter if the transmission neutral is slightly out of adjustment.

CAUTION

A safety interlock switch system PREVENTS CRANKING the engine with either the Forward Speed Control out of neutral, or the blade clutch (PTO) engaged. If the engine cranks otherwise, the safety system is not working and should be repaired or adjusted before operating the mower. DO NOT disconnect safety switches; they are for the operator's protection.

NOTE: For starting in cold weather [below 40° F (4° C)], use the cold start lever to release the jackshaft drive belt and remove the hydrostatic transmission from the starter cranking load. After the engine has been started and warmed up, raise the lever to re-engage the jackshaft drive belt.

2. Turn and hold the ignition key in the PREHEAT position to preheat the engine glow plugs. For temperatures below 35° F (2° C), the time required is approximately 10 seconds. For temperatures 35° F (2° C) or higher, the time required is approximately 5 seconds.

3. Move the throttle 1/4 to 1/2 open (toward FAST) and turn the ignition switch to the START position to start the engine. Release the key to the ON (RUN) position as soon as the engine starts.

IMPORTANT: If the engine fails to start after approximately 10 seconds of cranking, the engine should be checked before further cranking. Turn the key to the OFF position and allow a 60 second cool-down period between starting attempts. Failure to follow these guidelines can damage the starter motor and shorten battery life. Consult your Walker dealer or authorized Kubota dealer for additional help.

TROUBLESHOOTING NOTE: If the engine cranks but does not start, check the following:

- The fuel valve solenoid is operating. Look at the exhaust pipe when cranking the engine - no smoke indicates no fuel is reaching the cylinder. If the solenoid is not operating, contact your Walker dealer.

- The glow plugs are operating. Look at the exhaust pipe when cranking the engine - white smoke indicates improper glow plug operation and inadequate preheat. Consult the Kubota Workshop Manual to check glow plug function.

4. After the engine starts, make sure the oil pressure light goes off. If not, stop the engine immediately and find the cause of the problem. Make sure the oil pressure light is off prior to engaging the mower blades and beginning operation.
ADJUSTING GROUND SPEED AND STEERING

IMPORTANT: If the DS52 or DS62 mower deck is installed on the tractor, make sure the dolly wheel is retracted BEFORE moving.

CAUTION

Learn to START, STOP, and MANEUVER the mower in a large, open area.
If the operator has not operated a machine with LEVER STEERING OR DUAL HYDRO-STATIC TRANSMISSIONS, steering and ground operation should be learned and practiced until the operator is completely comfortable handling the machine BEFORE ATTEMPTING TO MOW.

DANGER

Keep feet on footrests at all times when the machine is moving. Never operate the tractor without a deck or implement installed.

1. Move the FSC out of NEUTRAL-PARK position to the desired forward speed. DO NOT hold forward on steering levers. It is not necessary to hold the FSC lever in position since a friction lock maintains the selected lever position (and forward travel speed).

WARNING

In case either of the transmission drive belts break during operation, and if the machine is on a slope, the machine will freewheel down the slope. To maintain control, immediately (1) Release the steering levers and simultaneously (2) Move the FSC to the NEUTRAL-PARK position. When the machine is stopped or moving slowly, engage the parking brake.

NOTE: This is exactly the same procedure used to normally stop and park the machine.

NOTE: If the FSC lever will not stay in the selected position, the friction lock needs to be adjusted. Refer to ADJUSTMENTS for FSC Friction Lock in Maintenance Instructions or contact your Walker dealer.

CAUTION

An operator presence switch (seat switch) will cause the engine to stop if the FSC is out of the NEUTRAL-PARK position and the operator is not in the seat. The function of this switch should be checked by the operator raising off the seat with the tractor moving forward (allow 1/2 second “off the seat” for the time delay function); the engine should stop. If the safety system is not working, it should be repaired or replaced before operating the mower. DO NOT disconnect the safety switches; they are for the operator’s protection.

2. Steer by pulling the lever on the side of desired direction of turn, e.g., pull the LH lever to turn left. To minimize the possibility of overcontrol, use only one hand on both steering levers.
Operating Instructions

Beginning Recommendations are:
♦ Learn operation of the mower in an open area away from buildings, fences, and obstructions. Learn operation on flat ground BEFORE operating on slopes.
♦ Start maneuvering the mower with SLOW engine speed and SLOW Forward Speed Control setting until familiar with all operating characteristics.
♦ Remember it is not necessary to hold the steering levers forward (a unique Walker feature); always PULL on the levers for steering or for reverse motion of the mower.
♦ Learn to operate the mower with your left hand on the steering levers and right hand on Forward Speed Control. The use of two hands on the steering levers tends to cause overcontrol.
♦ Learn to operate the steering levers with smooth action. Jerky movements are hard on the transmission and lawn. For sharp turns, do not allow the inside wheel to stop and twist on the grass. Pull the steering lever controlling the inside wheel into reverse for a smooth “rolling” turn (one wheel rolling forward while the other rolls backward).
♦ Practice maneuvering the mower until you can make it go exactly where you are aiming.
♦ Remember, for an emergency stop, or in case of loss of control, machine movement can always be stopped quickly by pulling the Forward Speed Control into the NEUTRAL-PARK position.

WARNING

When moving forward, DO NOT suddenly put the tractor in reverse by rapidly pulling on the steering levers, especially when going downhill, as this can lift the tractor tail wheel off the ground and set up a bucking motion due to operator overcontrol. If bucking does occur, immediately stop the bucking action by pulling the Forward Speed Control (FSC) lever into the NEUTRAL-PARK position.

3. Reverse direction of the mower by pulling both levers backward.

NOTE: Smooth action on the steering levers will produce smooth mower operation. Remember to keep the engine and ground speed slow until learning the control response.

4. The FSC may be adjusted forward for faster ground speed and backward for slower ground speed. When mowing, ground speed should be adjusted to match the load on the cutter blades, i.e., as the engine pulls down in heavy cutting, pull back on the FSC lever to reduce ground speed. Adjusting ground speed helps maintain a balance between engine power and blade speed for high-quality cutting action.
Operating Instructions

5. Stop ground travel by pulling both steering levers backward to the NEUTRAL position (tractor not moving) and then moving the FSC lever to the NEUTRAL-PARK position.

NOTE: If the tractor creeps forward or backward with the FSC lever in the NEUTRAL-PARK position, the transmission control needs to be adjusted. Refer to ADJUSTMENTS for Transmission Control and Neutral Function Adjustment in Maintenance Instructions or contact your Walker dealer.

ENGAGING THE BLADE DRIVE

1. Set the engine throttle at about 1/3 speed. DO NOT attempt to engage the blade clutch at high engine speeds. This will drastically shorten drive belt life. Use only moderate engine speed when engaging the blade clutch.

2. Engage the blade clutch by pulling the blade clutch lever SLOWLY up. For disengagement, push the blade clutch lever down SLOWLY.

CAUTION

An operator presence switch (seat switch) will cause the engine to stop if the blade clutch is engaged and the operator is not in the seat. The function of this switch should be checked by the operator raising off the seat and engaging the blade clutch; the engine should stop. If the switch is not working, it should be repaired or replaced before operating the mower. DO NOT disconnect the safety switches; they are for the operator’s protection.

IMPORTANT: DO NOT engage the blade clutch when transporting the mower across drives, sidewalks, loose materials, etc. DO NOT engage the blade clutch with the PTO shaft disconnected (the mower deck removed from tractor).

CAUTION

If the cutting blades strike a stationary object while mowing, stop the mower immediately, disconnect the electrical plug on the fuel shut-off solenoid, lift the deck, and inspect the deck and blades thoroughly for damage. Make sure that the blade timing has not been disturbed (the blades should be at 90 degrees to each other). Refer to REPLACING/REPAIRING the Blade Overload Shear Bolts in Maintenance Instructions if blades are out of time. Also, make sure the blade retaining nuts are torqued to 60 lb·ft (81 N·m).
Operating Instructions

STOPPING THE MACHINE

1. Pull the steering levers to the NEUTRAL position and then move the FSC lever backward to the NEUTRAL-PARK position.

2. Slow the engine to a fast idle; put the throttle in the 1/2 throttle position.

3. Disengage the blade clutch.

   IMPORTANT: DO NOT disengage the blade clutch with high engine speed (above 1/2 throttle) since the brake action on the blade drive will cause premature wear of the brake band.

4. Slow the engine to Idle, put throttle in IDLE position; and turn the ignition switch OFF.

   WARNING

   Remove the key from the ignition switch when leaving the mower unattended. This will prevent children and inexperienced operators from starting the engine.

5. Engage the parking brake. Also, engaging the parking brake is recommended when stopping or parking the machine in a confined space with little tolerance for movement.

   IMPORTANT: The hydrostatic transmissions lock to prevent the mower from rolling freely with the engine stopped. However, if the mower is parked on a slope, it is necessary to ENGAGE the parking BRAKE to prevent the mower from creeping. This is due to a small amount of slippage in the hydrostatic transmissions, especially when transmission fluid is warm.

   WARNING

   In case either of the transmission drive belts break during operation, and if the machine is on a slope, the machine will freewheel down the slope. To maintain control, immediately (1) Release the steering levers and simultaneously (2) Move the FSC to the NEUTRAL-PARK position. When the machine is stopped or moving slowly, engage the parking brake.

   NOTE: The emergency stop procedure is exactly the same procedure as used to normally stop and park the machine.
Operating Instructions

ADJUSTING CUTTING HEIGHT

**WARNING**

The engine must be stopped before adjusting cutting height. Disengage the blade clutch (PTO), stop the engine, and remove the ignition key. Wait for all movement to stop before getting off the seat.

Cutting height is adjusted by positioning the four (4) retainer hitch pins in a series of six vertical holes on the deck support pins. Lift handles have been provided on each end of the deck to assist in raising the deck while positioning the hitch pins. Cutting heights range from 1.5 in. (38 mm) [top holes] to 4 in. (102 mm) [bottom holes] in 1/2 in. (13 mm) increments.

TRANSMISSION LOCKOUT

**IMPORTANT:** DO NOT TOW this mower with the transmission lockout engaged. Towing can produce excessive internal pressure and damage the transmission.

To move the mower with the engine NOT running (dead battery, maintenance, etc.), the hydrostatic transmissions are unlocked (released).

1. Raise the front body.

2. Lift the transmission lockout lever on both the RH and LH transmissions and secure into place with the locking cam.

3. The mower will “freewheel” with the levers in the LOCKOUT position. The levers must be in the highest position to completely unlock the transmissions.

4. After moving the mower, release the locking cam, placing the lever DOWN in the normal OPERATING position. Make sure the transmission lockout plunger on the side of the transmission case (activated by the lockout lever) is completely released, otherwise the transmission operation will be erratic.
RECOMMENDATIONS FOR MOWING

**DANGER**

Do not mow around overhanging tree branches or bushes at the same height as the operator’s torso and head where inadvertent contact may cause injury.

Avoid Low Hanging Branches

**IMPORTANT:** Operate the engine at full throttle when mowing, to allow the engine to produce full horsepower and to increase efficiency of the engine cooling system.

- Keep the mower deck and discharge chute clean.
- Mow with sharp blades. A dull blade tears the grass (resulting in poor lawn appearance) and uses extra power (slowing the mowing speed).
- It is preferable to cut grass when it is dry and not too tall. Mow frequently and do not cut grass too short. (For best appearance, cut off 1/3 or less of existing grass height.)
- When mowing, operate the engine at full throttle for the best cutting action and performance of the grass handling system (GHS). Mowing with a lower engine RPM causes the mowing blade to not cut clean and tear the grass. The engine is designed to be operated at full speed.
- When mowing in adverse conditions (tall and/or wet grass), mow the grass twice. Raise the mower to the highest setting - 4 in. (102 mm) - for the first pass and then make a second pass cutting to the desired height.
- Use a slow setting on the FSC for trimming operations.
- Make sure the mower is leveled properly for a smooth cut. Refer to Deck Leveling in Assembly Instructions.
- Use an alternating stripe mowing pattern for best appearance and vary the direction of the stripe each time the grass is mowed to avoid wear patterns in the grass.
- Avoid damage to the grass by slipping and skidding of the drive tires. Use smooth control movements of the steering levers since the hydrostatic transmissions are “power boosted controls” and jerking the levers can easily slip the tires. For sharp turns, do not allow the inside wheel to stop and twist on grass; pull inside steering lever into reverse for a smooth “rolling” turn (one wheel rolling forward while the other rolls backward).
- When using a side discharge mower deck, the side discharge shield must not be removed and must be kept in the lowest possible position to deflect grass clippings and thrown objects downward. Orient the side discharge away from sidewalks or streets to minimize cleanup of clippings. When mowing close to obstacles, orient the side discharge away from obstacles to reduce the chance of damage to property by thrown objects.
- When operating on a slope, reduce speed and use caution to start, stop, and maneuver. Avoid sharp turns or sudden changes in direction. The maximum recommended slope operating angle is 15 degrees or 26% grade.
Maximum Recommended Slope - Do Not Operate on Steep Slopes

Maximum Recommended Slope

DANGER

Do not mow or dump grass within 5 feet (1.5 meters) of an embankment or retaining wall with drop off.

RECOMMENDATIONS FOR TILT-UP DECK OPERATION/TRANSPORT

To avoid potential deck and/or tractor damage while using the tilt-up deck, the following recommendations are offered:

- **Do not move the tractor** with the deck in the tilt-up position since both the roller wheels (on the back of the deck) and the GHS discharge chute may be damaged by moving the tractor. The tilt-up configuration should only be used when the tractor is parked.

- The tractor **body should never be tilted forward** with the deck in the tilt-up position. This can cause the deck to unhook from the tractor and fall with considerable force, potentially causing deck or tractor damage and/or bodily injury.

- When transporting a tractor with the deck in the tilt-up position (on a truck or trailer), the **deck should be secured** to the vehicle with a strap or rope (stop vertical movement). This will prevent the deck from bouncing on the rear roller wheels (causing breakage). This will also prevent the deck from unhooking from the tractor and falling, potentially causing deck or tractor damage. Damage to other items parked in front of the deck may also occur.

No Driving Zone

No Driving Zone
GRASS HANDLING SYSTEM (GHS)
GHS Model Only
Operating Instructions

General Information

The Grass Handling System (GHS) consists of a rear discharge mower deck connected to a 10.5 in. (27 cm) blower and a rear mounted grass catcher with 10.0 bushel (352 liters) capacity. The GHS blower operates any time the mower blade clutch is engaged and moves grass through the rear discharge deck chute into the grass catcher. Blower airflow is exhausted out the back of the grass catcher, through a filtering screen. When the grass catcher is full and needs to be emptied, a “full” signal horn alerts the operator. IMPORTANT: Normally, the GHS blower operates with no maintenance or cleaning required. However, under certain operating conditions, the inside of the blower housing may accumulate a deposit of dirt, causing wear and binding of the blower wheel. Normally, dirt buildup occurs when mowing a combination of dirty and damp grass, especially in the springtime. When operating in these conditions, check the blower wheel frequently for binding and clean the blower housing as required. Refer to CLEANING the GHS Blower in Maintenance Instructions.

NOTE: In Autumn, when using the GHS mower to vacuum leaves, it is recommended to raise the front of the mower deck 2 to 3 notches [1 to 1-1/2 in. (25 to 38 mm)] higher than the rear. This will avoid “bulldozing” leaves, particularly when the leaves are piled in a thick layer. To make this adjustment, the hitch pins in the two (2) front deck support pins are repositioned 2 to 3 notches higher while leaving the rear pins in their original position.

NOTE: When a side discharge or mulching mower deck is installed on the GHS model, a blower intake cover should be installed in the blower intake tube. This cover “unloads” the blower and seals the intake to effectively eliminate power loss and blower noise when the blower is not being used.

DANGER

NEVER operate the GHS catcher with the back door open. Objects may be thrown out the back of the catcher with sufficient force to cause serious injury to bystanders or property damage. NOTE: For non-catching operation, the “No-Catch” Deflector is an available accessory item.

DANGER

ROTATING BLOWER BLADES

NEVER operate the GHS blower with the blower discharge chute uncovered (grass catcher in the dump position) since dangerous projectiles may be thrown. NEVER put hands into the blower discharge chute for any reason. Use a stick or similar instrument to remove any material if clogging has occurred.

CAUTION

NEVER leave grass clippings in the grass catcher after mowing. Damp clippings generate heat as they decompose. This MAY cause spontaneous combustion.
Clogging Checklist

In case of clogging, there will be a distinct change in the sound of the blower, i.e., the blower sound will stop. Also, the mower deck will begin to leave a trail of grass clippings. When this occurs, stop the engine, disconnect the electrical plug on the fuel shut-off solenoid, and make sure all movement has stopped before attempting to unclog.

**DANGER**

NEVER place hands under the mower deck or in the GHS blower discharge chute. Use a stick or similar tool to remove any clogged material.

Normally, any clogging will first develop at the back of the mower deck in the discharge opening into the blower chute. Clogging at this point does not indicate a particular problem in this part of the system, but is a symptom of something restricting the flow of material throughout the entire system. The following list of items should be checked if a pattern of clogging begins to develop. All of these items are capable of causing clogging at the back of the deck.

- Check to see if the mower blades are installed for the correct rotation. The blade cutting edges should move towards each other at the front of the deck on standard rotation decks (e.g., DC48), and towards each other at the back of the deck on reverse rotation decks (e.g., DC52R).

- Check the amount of flat section remaining at blade tip. This is the area that is ground away (removed) when the blades are sharpened. If too much of the flat section is removed, the “air lift” performance or “shovel” effect of the blade deteriorates to the point that discharge of grass clippings into the blower chute is marginal. Replace cutter blades if less than 3/4 in. (19 mm) flat section remains at the blade tip.

- Check that the interior of the deck housing and baffling is reasonably clean and free of grass and dirt buildup. While some degree of material buildup can be tolerated, a point is finally reached where the flow of air and grass clippings is restricted.

**NOTE:** One condition that quickly causes a buildup of material in the deck housing is mowing grass and/or weeds which are “juicy.” The material collects under the deck with sticky, green juice. Clover and weeds are especially a problem. The mower deck will need to be cleaned frequently when operating in these conditions.

- Check the deck cutting height setting. When working in thick, tall grass, lower deck settings [1 to 2 in. (25 to 51 mm) cutting heights] tend to restrict airflow from moving into and under the deck. Raising the deck cutting height will significantly increase airflow and reduce clogging when working in thick, tall grass.

- Check the interior of the chute connecting the mower deck to the blower for smoothness and freedom from obstruction.
Operating Instructions

● Check the blower wheel for bent blades and excessive clearance between the blade tip and the blower housing. A clearance greater than 1/8 in. (3 mm) will cause a significant loss of blower performance.

● Check the blower discharge chute into the grass catcher for smoothness and freedom from obstruction.

● Check the elbow inside the grass catcher for a buildup of material in the radius of the elbow. In certain conditions (damp/dirty grass) a considerable “clump” of material can accumulate at this point, greatly restricting material and airflow.

● Check that the openings in the removable air exhaust screen in the grass catcher are not plugged. If the screen is clogged, refer to Cleaning the GHS Exhaust Screen in this section.

NOTE: An optional exhaust screen with larger holes (3/4") is available for use when mowing in wet grass; the screen provides less airflow restriction and more clog resistance (use standard screen in dry conditions to avoid excessive material blowing out of the catcher).

Remember, anything that restricts airflow or material flow along the entire path from the mower deck to the grass catcher can cause clogging.

Using the Tilt-Up Deck

Refer to CLEANING of Grass Buildup in Mower Deck Housing in Maintenance Instructions.

Using the GHS Catcher

Powerfil®

The GHS catcher has an oscillating grass delivery spout (POWERFIL®) which is designed to spread grass clippings throughout the interior of the grass catcher (even when mowing wet, heavy grass). The oscillating action may be checked by turning the ignition switch to the ON (RUN) position and moving the blade clutch to the ENGAGED position. The spout should oscillate approximately 35 cycles per minute.

NOTE: If the grass spout fails to oscillate, the clutch switch should be checked for function (the switch closure is adjustable).

“Full” Signal Horn

The GHS catcher has a “full” signal horn to alert the operator to dump the catcher when it is full (to prevent overfilling and clogging). The “full” signal horn is activated by a vane switch (Grass-Pak® switch) mounted on the grass delivery spout. Oscillating action of the spout triggers the vane switch as grass begins to fill in around the spout when the catcher is almost full.

The “full” signal function may be checked by turning the ignition switch to ON (RUN), engaging the blade clutch (engine not running), opening the catcher back door, and triggering the Grass-Pak® vane by hand as it oscillates. The horn should sound as the switch is moved in one direction.

WARNING

DO NOT test the Powerfil® oscillation or Grass-Pak® switch with the engine running. Projectiles may be thrown out of the grass delivery spout, and COULD cause serious injury.

The “full” signal horn is designed to operate (sound) when the grass catcher is almost full. The timing of the signal is adjustable by changing the position of the vane on the Grass-Pak® switch. If the signal is coming on too soon (catcher not completely full) or too late (grass clogging in catcher spout and delivery chute), refer to ADJUSTMENTS for GHS “Full” Signal Horn Adjustment in Maintenance Instructions.

NOTE: The horn signal should be adjusted to sound BEFORE the catcher is completely full to give the operator time to react and stop mowing. An indication the horn signal is coming on too late (delayed too much) is if grass clippings are falling out of the grass catcher delivery chute when the catcher is dumped.
Cleaning the GHS Exhaust Screen

To remove the grass catcher screen for cleaning, open the catcher door, push forward and pull down on the grass catcher screen knobs (on either side of the screen), and slide the screen out. Use a high pressure washer or water spray and brush to clean the screen.

Keeping the catcher exhaust screen clean and open is essential to good performance of the catching system. In some mowing conditions, e.g., wet and dirty, it will be necessary to clean the screen frequently to avoid clogging the mower deck, blower, and chutes due to airflow restriction.

Tailgate Dumping

1. Open the back door by lifting on the door handle.
2. Tilt the catcher back to dump by lifting on the catcher lift/dump handle on the lower front corner of the catcher.
3. Lower the catcher smoothly down to the normal operating position. DO NOT allow the catcher to drop down - the gas spring, that holds the catcher in the raised position, is not a shock absorber for lowering the catcher.
4. Close the door by pulling down on the door handle. The door should close smoothly with the assistance of the gas springs. If the dampening springs are not functioning properly, they should be replaced to prevent the door from slamming closed and possibly causing a pinch point.

DANGER

Do not mow or dump grass within 5 feet (1.5 meters) of an embankment or retaining wall with drop off.

For dumping, the catcher either tailgate dumps into a disposal area or dumps into the optional dump bag. The dump bag is a reusable nylon fabric bag designed to conveniently move grass clippings from the catcher to a remote disposal area or container.
Using the Dump Bag

1. Open the back door by lifting on the door handle.

2. Orient the dump bag with one of the handle straps on the bag opening facing up.

3. Hook the bottom of the bag over the rear bumper while lifting on the handle strap on bag opening.

4. Tilt the catcher back to dump into the bag by lifting on the catcher lift/dump handle on the lower front corner of the catcher with the one hand while continuing to hold up on the bag strap with the other hand. Refer to photos for positioning the bag and dumping.

5. Lower the catcher smoothly down to the normal operating position. DO NOT allow the catcher to drop down - the gas spring, that holds the catcher in the raised position, is not a shock absorber for lowering the catcher.

6. Close the door by pulling down on the door handle. The door should close smoothly with the assistance of the gas springs. If the dampening springs are not functioning properly, they should be replaced to prevent the door from slamming closed and possibly causing a pinch point.
Operating Instructions

Power Dump Option
When equipped with the optional power dump system, the operator dumps the catcher while sitting in the seat. A toggle switch operating a power ram is used to raise and lower the catcher. The back door automatically opens and closes during the dump cycle.

Hold the toggle switch **UP** or **DOWN** to **RAISE** or **LOWER** the catcher. When the catcher reaches the full raised or lowered position, the power ram clutch will make a ratcheting sound. Release the toggle switch as soon as this sound is heard. **DO NOT operate the ram with the clutch ratcheting for an extended time** as this will cause extra wear on the clutch mechanism.

⚠️ CAUTION

The operator should be in the seat and bystanders stay clear when the power dump is operating. The power dump is used **ONLY** for tailgate dumping. Do not attempt to use the optional dump bag or any other bag with the power dump.

**NOTE:** If grass tends to hang up in the catcher after raising the catcher with the power dump, "jiggle" the steering levers and make the tractor bounce a little to unstick the grass and make it slide out of the catcher.

**NOTE:** With the power dump mechanism in the normal operating position (catcher down), the catcher can be **manually raised** for access to the engine and the catcher can be **manually dumped**.

Hi-Dump® Option
When equipped with the optional Hi-Dump® system, the operator raises and dumps the catcher while sitting in the seat. Two toggle switches operate independent hydraulic cylinders to raise and lower the catcher. The back door automatically opens and closes during the dump cycle.

**NOTE:** The ignition switch must be in the **ON (RUN)** position for the Hi-Dump® system to operate.

---

**Lift/Dump Control Switches and Auxiliary Power Terminals**

Hold the Lift toggle switch **UP** or **DOWN** to **RAISE** or **LOWER** the catcher. Hold the Dump toggle switch **UP** to **DUMP** the catcher and **DOWN** to return to the normal operating position. The catcher may be dumped at any raised position (Normal Operating - Intermediate - Fully Raised).
Operating Instructions

NOTE: If grass tends to hang up in the catcher after raising the catcher with the Hi-Dump®, “jiggle” the steering levers and make the tractor bounce a little to unstick the grass and make it slide out of the catcher.

NOTE: With the Hi-Dump® mechanism in the normal operating position (catcher down), the catcher cannot be manually raised. In the case of a dead battery, use the auxiliary power terminals to charge/boost the battery to operate the Hi-Dump®.

⚠️ CAUTION

The operator should be in the seat with the machine in the NEUTRAL-PARK Position and the parking brake engaged and by-standers stay clear when the Hi-Dump® is operating. To avoid tipping over, the machine should be parked on LEVEL GROUND when raising/dumping the catcher with Hi-Dump®. Do not attempt to use the optional dump bag or any other bag with the Hi-Dump®.

⚠️ WARNING

When the Hi-Dump® is in the RAISED position for access to the engine and drivetrain, always ENGAGE the safety lock before service or repair work. Remember to DISENGAGE the lock before resuming operation of the Hi-Dump® (to avoid damaging the lock mechanism).
Operating Instructions

Power Dump Components

- Catcher Door
- Upper Arm
- Grass Catcher
- Lift Channel
- Power Dump Ram Actuator
- Fork
- Dog Leg Assembly
- Rubber Bumper
- Actuator Mount Assembly
- Cable Assembly
- Lower Arm
- Door Arm Actuator
- Cable Guide
- Gas Spring
- Actuator Spring
## Maintenance Schedule Chart - Recommended Service Intervals - Model D21d

<table>
<thead>
<tr>
<th>Service Item</th>
<th>Daily</th>
<th>25 Hours</th>
<th>100 Hours</th>
<th>200 Hours</th>
<th>Yearly</th>
<th>Every 2 Years</th>
<th>Ref. Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Engine Crankcase Oil Level</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>Check Coolant Level in Radiator and Overflow Tank</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>Clean Radiator Screen and Cooling Fins*</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>Check Security of Air Filtration Components</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>Check Air Filter Restriction Gauge</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>Clean Grass Buildup Under Deck</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>Clean GHS Exhaust Screen*</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>Clean GHS Blower*</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>Service Mower Blades</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Check Functions of Instrument Panel and Warning Horn</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Lubricate Grease Fittings and Oil Points*</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>Check PTO Gearbox Oil Level**</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Check Battery Electrolyte Level</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>Check Hydrostatic Transmission Fluid ◊</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64</td>
</tr>
<tr>
<td>Check Tire Pressure</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Check Drive Belts (Jackshaft, Engine PTO, GHS Blower, Ground Drive and Engine Alternator Belt)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>Check Deck Gearbox Oil Seal</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Check Safety Switch System</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Check Turbine Pre cleaner*</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>Check/Clean Air Filter Element***</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>Change Engine Crankcase Oil ∆</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>Check Wheel Bolt Torque (75 to 85 lb·ft)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Check Alternator Belt Tension</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>Check Blade Brake Action</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Check Oil Level in Gear Axle</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Clean Hydrostatic Transmission Cooling Fins</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>Change Engine Oil Filter</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>Check Radiator Hoses and Clamps</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Replace Fuel Filters</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>Check Fuel Lines and Clamps</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Replace Air Filter Element, Safety Filter and Dust Ejection Valve***</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>Flush Radiator and Change Coolant</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>Service Battery</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>Check Transmission Control Setting</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Check Fuel Injection Nozzle Pressure</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Check FSC Friction Lock</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Check PTO U-Joints for Wear/Looseness</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Check Engine Valve Clearance</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Check/Adjust Vertical Position of Grass-Pak® Switch</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>Change Gear Axle Oil ∆</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Change Hydrostatic Transmission Fluid ∆</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>△△△△</td>
</tr>
<tr>
<td>Replace Radiator Hoses and Clamps</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Replace Fuel Lines and Clamps</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
</tbody>
</table>

* More often in extremely dusty or dirty conditions (refer to notes about air cleaner element in IMPORTANT TIPS FOR CARE OF THE KUBOTA ENGINE)

** Change PTO gearbox oil after first 100 hours of operation (break-in period)

*** Air cleaner is remote mounted Donaldson Radialseal™ unit, replace filter every year

∆ Change engine oil and filter after first 35 hours of operation of a new engine (break-in period)

ΔΔ Change every 2 years or 1000 hours

ΔΔΔ See your Walker dealer for this service or refer to the Walker Service Manual

◊ Hydrostatic transmissions are sealed - DO NOT OPEN RESERVOIR CAPS - refer to Checking Hydrostatic Transmission Fluid Level in this section
**IMPORTANT TIPS FOR CARE OF THE KUBOTA ENGINE**

**Fuel System**
- Fuel must be clean - free from water, dirt, and organic material. Fuel contamination will greatly shorten the life of the fuel injection pump and injectors.
- Change fuel filters on a regular basis and when contamination is suspected or found in the fuel.
- Model D21d is equipped with an electric fuel pump; therefore it is normally not necessary to bleed air out of the fuel system (after running out of fuel or fuel system maintenance).
- When checking and bleeding the fuel system use the air vent plug on the fuel filter and the injector pump. **DO NOT** attempt to bleed the fuel system by loosening fuel lines on the fuel injection pump as this could damage the pump.

**Starting/Stopping**
- **DO NOT** use ether or any starting fluid in the air intake. This will damage the engine.
- For starting in cold weather [below 40° F (4° C)], use the cold start lever to release the hydrostatic transmissions from the starter cranking load.
- Start engine with the throttle advanced off idle (1/4 to 1/2 throttle). This will aid starting, especially in cold weather.
- Keep the battery fully charged.
- Match crankcase oil viscosity to the ambient temperature, allowing the engine to crank faster and start easier.
- Allow engine to run at idle for a few seconds before stopping engine to avoid run-on or backfiring.

**Cooling System**
- Fill the cooling system with a **pre-mixed** solution of 50/50 antifreeze (ethylene glycol) and distilled water.
- **IMPORTANT:** Solution must be pre-mixed before putting it in the engine (adding pure antifreeze into the radiator may cause damage to the engine by causing overheating).
- **Maintain proper fluid levels** in the radiator and overflow tank.
- Operate the engine at full speed when mowing. This allows the engine to produce full horsepower and move more cooling air through the radiator.

**Air Cleaner System**
- Use **only** Donaldson air cleaner elements. Aftermarket elements may not seal in the air cleaner housing, allowing dirt to enter the engine. Also, aftermarket filters often skimp on the filtration media and require more frequent replacement (see following instructions).
- Use the air filter restriction gauge to indicate the need to service the air filter.
- **DO NOT overservice** or frequently “disturb” the **air filter**. A dirty air filter actually cleans better than a new one. Changing and cleaning the filter too often can actually reduce filter efficiency and increase the opportunity for traces of dust to enter the engine. Wait until the element really needs servicing as indicated by the air filter restriction gauge.
- Do frequently check the **Turbine Precleaner** for free movement of the internal fan.
- When the air filter element is removed or replaced, make sure all dust is cleaned out of the **air cleaner housing and hose**. Use a damp cloth and wipe the interior of the canister and hose clean (a little dirt left here will be sucked into the engine and reduce engine life). When the filter is reinstalled, make sure the element is held tight and straight in the canister for proper seating and sealing.
- Periodically check the air intake hose for cuts, nicks, etc., and the hose clamps for tightness.

**Oil**
- Use any top quality oil with an API classification of CF or higher. **DO NOT** use oil that is rated for gasoline engines only (API SE/SF) as this will cause problems in a diesel engine.
- Single viscosity or multi-viscosity oils may be used with the viscosity matching ambient temperatures for the engine operating conditions. This will **aid starting** in cold weather and assure proper lubrication in hot weather.
- Use only Kubota oil filters. **Aftermarket filters may not seal properly** and/or have the incorrect pressure relief valve for proper lubrication.
LUBRICATION

WARNING

DO NOT attempt to lubricate the machine with the engine running. Disengage the PTO clutch, shut off the machine, and remove the ignition key.

Proper lubrication is an important maintenance procedure. It reduces wear and makes the machine quieter and easier to operate.

Engine Oil

Engine Break-In Oil

No special break-in oil is required. The engine is serviced with 10W-30, Service Class SJ oil from the factory. Change the oil after the initial engine break-in period of 35 hours. Thereafter, change oil after every 100 hours of operation.

Checking Engine Crankcase Oil Level

Check the engine crankcase oil level before use and after each 5 hours of continuous operation.

IMPORTANT: The importance of checking and maintaining the proper crankcase oil level cannot be overemphasized. Check the oil level BEFORE EACH USE.

1. Park the mower on a level surface with the engine stopped. Also, make sure the engine is cool and oil has had time to drain into the sump [allow at least five (5) minutes after stopping the engine].

IMPORTANT: NEVER check or add oil with the engine running.

2. Before removing the dipstick, clean the area around the dipstick to keep any dirt or debris out of the engine.

3. Remove the dipstick, wipe off with a clean rag, then reinsert the dipstick into the tube and press all the way down.

4. Remove the dipstick again and check the oil level on the dipstick. The oil level should be within the “Operating Range” on the dipstick (between the lower mark and the upper mark).

IMPORTANT: DO NOT operate engine without a sufficient oil supply in the crankcase. DO NOT operate with the oil level below the lower mark or above the upper mark on the dipstick.

5. If additional oil is needed, refer to Specifications for proper crankcase lubricant. Fill up to, but not above, the upper mark on the dipstick.

IMPORTANT: DO NOT overfill the crankcase (oil above upper mark) as this CAN result in engine overheating, loss of power, and possible engine damage.

Dipstick Operating Range

Changing Engine Crankcase Oil/Oil Filter

Change the engine crankcase oil after every 100 hours of operation and replace the oil filter every other oil change (every 200 hours of operation).

1. Park the mower on a level surface with the engine stopped. The engine oil should be warm before draining. If not warm from operation, start the engine and run a few minutes to warm the oil.

2. Before removing the dipstick and oil fill cap, clean the area around them to keep any dirt or debris out of the engine.

3. Remove the dipstick, oil fill cap, and oil drain plug and drain the oil into a suitable container. Be sure to allow ample time for complete drainage.
Maintenance Instructions

LUBRICATION

4. Before removing the oil filter, clean the area around the filter to keep dirt and debris out of the engine.

5. Remove the old oil filter and wipe off the filter mounting surface on the engine.

6. Apply a thin coating of clean oil to the rubber gasket on the replacement oil filter.

IMPORTANT: Use ONLY oil filters from the engine manufacturer (Kubota 15841-32439). Aftermarket oil filters may not seal properly and/or may not have the correct pressure relief valve for proper lubrication.

7. Install the new oil filter on the engine. Turn the filter clockwise until the rubber gasket contacts the sealing surface, then tighten the filter an additional 1/2 to 3/4 turn.

8. Reinstall the drain plug. Make sure it is tightened to 10 lb·ft (14 N·m).

9. Fill the crankcase with new, clean oil. Use only crankcase lubricants recommended by the engine manufacturer. Refer to Specifications in this manual or the engine owner’s manual. Use the recommended oil viscosity for the expected ambient temperature. Oil with the correct viscosity will aid starting in cold weather and assure proper lubrication in hot weather. Fill up to, but not above, the upper mark on the dipstick. Crankcase capacity is 3.4 quarts (3.2 liters) plus 1/2 pint (0.24 liters) for the new oil filter.

IMPORTANT: DO NOT use oil that is rated for gasoline engines only (API SE/SF). This will cause problems with a diesel engine.

IMPORTANT: Check the dipstick reading before adding the last 1/2 pint of oil and fill only to the upper mark. DO NOT overfill the crankcase (oil above upper mark) as this CAN result in engine overheating, loss of power, and possible engine damage.

10. Start the engine and check for oil leaks around the oil filter. Stop the engine, recheck the oil level, and add oil if necessary. (When the engine is first operated with a new oil filter, the oil level drops slightly as the filter is filled with oil.)

Grease Fitting and Oil Point Lubrication

Lubricate the grease fittings and oil points after every 25 hours of operation. Lubricate more often when operating in dusty or dirty conditions. Use SAE general purpose lithium or molybdenum base grease for grease fittings and light machine oil (SAE 10) to lubricate oil points. Lubricate the locations shown in the Chassis and Deck Lubrication Points Illustration.

NOTE: PTO universal joints (on the deck and tractor) require routine lubrication after every 25 hours of running time. Remove tractor PTO quick disconnect tube assembly for easy access to grease fittings.

NOTE: The best way to lubricate the PTO tube half of the universal joint assembly is to remove it from the tractor. See instructions for removing and installing PTO quick coupler, refer to Deck Installation in Mower Deck Installation on Tractor in the Assembly Instructions.
LUBRICATION

<table>
<thead>
<tr>
<th>Ident No.</th>
<th>Location</th>
<th>Lubrication Type</th>
<th>No. Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deck Caster Wheel Fork Pivot</td>
<td>Grease</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Deck Caster Wheel Bearing 32</td>
<td>Grease</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Blade Spindle</td>
<td>Grease</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Pivot Assembly, Tilt-Up Deck</td>
<td>Grease</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Deck Support Arm Socket Deck</td>
<td>Grease</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Right Angle Gearbox</td>
<td>Oil **</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Universal Joint Shaft Assembly</td>
<td>Grease</td>
<td>1(2Δ)</td>
</tr>
<tr>
<td>8</td>
<td>Dolly Wheel Retract</td>
<td>Oil Δ</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Dolly Wheel Pivot</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Idler Arm Pivot</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Blade Drive Gearbox</td>
<td>Oil *</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Tee Gearbox, Deck</td>
<td>Oil *</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Body Hinge Point</td>
<td>Oil</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>Steering Lever Pivot</td>
<td>Grease</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>FSC Actuator Rod Pivot</td>
<td>Oil</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>(FSC) Friction Body Pivot</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>FSC Lever Pivot</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Deck-to-PTO Coupling (Grease Spline Slide Area)</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Deck Support Arm Pivot</td>
<td>Grease</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Universal Joint Tube Assembly</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Parking Brake Lever</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Universal Joint Quick Connect Spline (Grease Spline Slide Area)</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Gear Axle</td>
<td>Oil ***</td>
<td>2</td>
</tr>
<tr>
<td>24</td>
<td>Belt Tightener Pivot, Ground Drive</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>PTO Clutch Lever Pivot</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>Clutch Actuator Push Rod</td>
<td>Grease</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ident No.</th>
<th>Location</th>
<th>Lubrication Type</th>
<th>No. Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Brake Band Pivot Pin (Clevis)</td>
<td>Oil</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>Belt Tightener Pivot, PTO Clutch</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>Throttle Control Cable Ends</td>
<td>Oil</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>Belt Tightener Pivot, Jackshaft Drive</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>Cold Start Lever</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>Catcher Hinge Point</td>
<td>Oil</td>
<td>2</td>
</tr>
<tr>
<td>33</td>
<td>Rear Wheel Bearings</td>
<td>Grease</td>
<td>2</td>
</tr>
<tr>
<td>34</td>
<td>Engine Dipstick / Oil Filler</td>
<td>Oil ***</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>Belt Tightener Pivot, Blower Drive (GHS Model Only)</td>
<td>Grease</td>
<td>1</td>
</tr>
<tr>
<td>36</td>
<td>PTO Gearbox Dipstick</td>
<td>Oil ***</td>
<td>1</td>
</tr>
<tr>
<td>37</td>
<td>Hydrostatic Drive</td>
<td>Oil ***</td>
<td>2</td>
</tr>
<tr>
<td>38</td>
<td>Throttle Control Pivot</td>
<td>Oil</td>
<td>1</td>
</tr>
</tbody>
</table>

* Gearboxes are permanently lubricated and sealed requiring no scheduled lubrication. Oil level should be checked only when an oil leak is noted. Refer to Mower Deck Gearbox Lubrication in this section.

** Grease every twenty-five (25) hours.

*** Refer to Gear Axle Lubrication, Engine Oil, Tractor PTO Gearbox Lubrication, and Hydrostatic Transmission Fluid in this section.

Δ Belt Driven Decks Only

NOTE: DC42 and DS62 Tilt-Up Decks are shown for reference. For other Deck Lubrication Points, Refer to Deck and Carrier Frame Illustrated Parts Manual.

Lubrication Points for Optional Belt Driven Decks (DS62 Shown)
Chassis and Deck Lubrication Points (DC42 Shown)
**Mower Deck Gearbox Lubrication**

**NOTE:** These instructions apply to all mower decks with gear-driven blades. Refer to **DS52 or DS62 Mower Deck Lubrication** in this section for the DS52 or DS62 deck with belt-driven blades. Refer to **Mower Deck Spindle Lubrication** in this section for the DS42 Belt Drive deck with belt-driven blades.

On gear driven decks, the mower deck gearboxes (tee gearbox and blade drive gearboxes) are connected as a unitized assembly, and oil flows freely between them. The gearboxes are permanently lubricated (oil filled) and sealed requiring no scheduled lubrication. However, the gearbox oil seals should be checked every 25 hours for indication of an oil leak; particularly the lower seals on the blade drive gearboxes should be inspected, since they operate in a dirty environment. If an oil leak is noted, replace the oil seal and relubricate the gearbox assembly as follows:

1. Remove gearbox cover (footrest). Deck orientation should be the normal operating position.

2. Clean the area around the individual gearbox cover plates to prevent contaminants from entering the gearcase.

3. Remove the screws securing the cover plates on the blade drive gearboxes.

4. Check the level of lubricant in the gearboxes. If the lubricant is low, add SAE E.P. (Extreme Pressure) 80W-90 (API GL-5) gear lube until the oil level is up to (submerges) the horizontal shaft in the gearbox (shaft parallel to cover plate).

5. Check condition of the cover gasket and replace if worn or damaged. Reinstall gearbox cover plates; torque screws to 24 lb·in. (3 N·m).

**DS52 or DS62 Mower Deck Lubrication**

There are several special lubrication requirements for the DS52 or DS62 mower deck in addition to the requirements detailed in the **Chassis and Deck Lubrication Points** illustration. Lubricate the locations shown in the **Gearbox, Dolly Wheel, and U-Joint Lubrication** photo and check and maintain oil in the belt drive gearbox.

1. Check the oil level in the belt drive gearbox every 100 hours (or sooner if a visible oil leak has developed). With the deck in the normal operating position, remove the level plug in the side of the gearcase. Add SAE E.P. (Extreme Pressure) 80W-90 (API GL-5) gear lube to maintain the oil level to the plug. If the oil level is low, check the gearbox for any indication of an oil leak. If an oil leak is noted, the gearbox will need to be removed and rebuilt.

2. Lubricate the dolly wheel pivot every 25 hours with general purpose grease.

3. Lubricate both drive shaft u-joints every 25 hours with SAE general purpose lithium or molybdenum base grease.
Gearbox, Dolly Wheel, and U-Joint Lubrication

Mower Deck Spindle Lubrication

For the DS42 Belt Drive mower deck, lubricate each deck spindle grease fitting every 25 hours. Use SAE general purpose lithium or molybdenum base grease for grease fittings.

Tractor PTO Gearbox Lubrication

Checking Gearbox Oil Level

Check the gearbox oil level every 25 hours, and if necessary, add oil [SAE E.P. (Extreme Pressure) 80W-90 (API GL-5) gear lube] to maintain oil level to the FULL mark on the dipstick.

IMPORTANT: DO NOT overfill the PTO gearbox to avoid oil leakage out of the dipstick standpipe.

If the oil level is low, check the gearbox for any indication of an oil leak. If an oil leak is noted, the gearbox will need to be removed and rebuilt.

Changing Gearbox Oil

The tractor PTO gearbox is oil filled. No scheduled oil change is required. However, changing the oil after the first 100 hour break-in period will extend gearbox life and is recommended.

1. Remove the drain plug in the bottom of the gearcase, drain the oil, and reinstall the plug.

2. Refill the gearbox through the dipstick standpipe using 7 to 8 fl. oz. (21 to 24 cl) of SAE E.P. (Extreme Pressure) 80W-90 (API GL-5) gear lube. Remove plug in top of gearcase to vent air when refilling.

3. Check that the oil level is at the FULL mark on the dipstick. DO NOT overfill.

Gear Axle Lubrication

● The gear axle oil lubrication is SAE E.P. 80W-90 (API GL-5) gear lube.

● Check the axle oil level after every 100 hours of operation by removing the oil level plug. If additional oil is needed, remove the breather vent on top of axle and fill until oil is at the level plug.

● Change axle oil every 1000 hours or two (2) years.
Hydrostatic Transmission Fluid

Checking Hydrostatic Transmission Fluid Level

The hydrostatic transmissions are sealed units and do not need to be opened to check the fluid level. Hydrostatic fluid level should be checked every 25 hours of machine operation. It is preferable to check the fluid when the fluid is cold. Check fluid levels as follows:

IMPORTANT: Removing or breaking the seal on the hydrostatic reservoir cap within the first 1000 hours will VOID THE TRANSMISSION WARRANTY.

1. Park the mower on a level surface. Stop the engine and wipe dirt and contaminants from around the base of the reservoir to better see the COLD mark.

2. The level of the oil can be seen through the side of the opaque reservoir (DO NOT REMOVE RESERVOIR CAP); using a light next to the reservoir will help make the level more visible.

3. The reservoir has a fluid level COLD mark. The reservoir oil level should ALWAYS be at or slightly above the COLD mark.

4. If the fluid is below the COLD mark (or the transmission is not performing properly), contact your local dealer. Attempting to add fluid or service the transmission may VOID THE TRANSMISSION WARRANTY.

NOTE: Loosening the air bleed plug on top of the transmission can be used to verify a low oil condition in the transmission. As the plug is loosened (DO NOT completely remove plug), oil will seep out if the transmission is full of oil. If no oil appears, the transmission oil level is low and the transmission will need to be serviced by an authorized Walker dealer. When a transmission is found to be low on oil, it is highly probable that has been caused by an oil leak either on the input drive shaft or the control arm pivot. Dealer service is required to correct any oil leak along with refilling the transmission oil to the proper level.
If a pressure washer is used on the exposed working parts, avoid water on the electrical parts and the engine cooling system.

### Engine Air Cleaner System

There are two main components in the engine air cleaner system: a turbine precleaner and a Donaldson Radialseal™ air cleaner. Each component is checked, cleaned and maintained on a different schedule based on the filtering action required. Each component is serviced as follows:

#### Turbine Precleaner

The turbine precleaner is mounted on a remote air intake tube connected to the Donaldson air cleaner. A spinning fan driven by the intake airflow separates dust from the air, giving the initial stage of air cleaning. Dust particles are exhausted through a single small vent in the side of the housing. Since no dust is trapped, the precleaner operates without cleaning. The only maintenance required is to check the operation of the internal fan **every 100 hours**. Verify operation:

1. Look into the exhaust vent while shining a light into the intake.
2. Start the engine and watch the fan begin to spin as the throttle is advanced.

If the fan is not spinning, service or replace the precleaner as required.
Donaldson Radialseal™ Air Cleaner

A remote mounted Donaldson Radialseal™ air cleaner provides the air filtering function. The paper filter element slides over an outlet tube inside the air cleaner canister with radial sealing action, reducing the possibility of dust leaks due to improper filter installation. Intake design, internal baffling, and a dust ejection valve provide dust separation and automatic precleaning action. Daily or frequent servicing of the air cleaner is not required. Use the air filter restriction gauge on the air cleaner outlet to indicate when the air filter needs servicing -- a yellow indicator will show when the filter is overly restricting airflow into the engine.

IMPORTANT: Use only Donaldson air filter elements for replacement (Donaldson P822686 or Walker 5090-1). Aftermarket filters may not seal properly or filter efficiently.

Inspect the paper element after every 100 hours of service and replace the element and safety filter yearly (or when dirty or damaged). More frequent replacement may be required when operating in extremely dusty conditions as indicated by the air filter restriction gauge. Service the air cleaner as follows:

1. Release the top and bottom cover latches and remove the air cleaner cover. Wash the cover and dust ejection valve. Check that these components are in good condition. The dust ejection valve is subject to wear and deterioration and should be inspected carefully and replaced yearly or when damaged. The lips of the valve should close and fit together; any cracks, deformation, or wear in the valve is cause for replacement.

2. Remove the filter element by pulling it out of the canister. There will be some initial resistance as the filter seal breaks loose and slides off of the outlet tube. Gently move the end of the filter up and down and side to side or twist to loosen the seal. Use gentle action to minimize the amount of dust dislodged as the filter is removed.

3. Discard the filter element if excessive air flow restriction has been indicated by the air filter restriction gauge and proceed to Step 6. Clean the filter element by gently tapping on a flat, hard surface. If excessive restriction still exists after cleaning the element, it should be replaced.

NOTE: Use care when cleaning the filter element. The filter element and/or seal surface may be damaged by tapping too hard or hitting on an uneven surface or sharp edge. Washing the element in water or cleaning solution is not recommended. Do not try to clean the element with compressed air. Remember, replacing a filter is less expensive than replacing a dusted engine.

4. Use a bright light inside the element to inspect for damage. Check the element very carefully for pin holes or other damage that will allow dirt to leak through the paper media. Replace filter element if dirty or damaged.

5. Check the condition and resilience of the radial sealing surface (inside of the open end) of the filter. Replace the filter if any cracks, tears, or other damage to the sealing surface are noted.
6. Without removing, visually inspect the condition of the safety filter for damage or holes. The safety filter should only be removed for replacement **yearly** (or when dirty or damaged).

**IMPORTANT:** Prior to removing the safety filter, make sure the inside surface of the air cleaner canister is clean. This will minimize the risk of dirt entering the outlet tube which can cause premature engine wear.

7. After removing the safety filter, use a clean, damp cloth and wipe the interior of the air cleaner canister clean. Use special care to clean both the inside and outside surfaces of the outlet tube.

**IMPORTANT:** Any dust left on the inside of the outlet tube will go into the engine and cause wear.

8. Check the outside surface of the outlet tube for smoothness and cleanliness (this is the sealing surface).

9. Insert and seat the safety filter and primary element carefully into the canister, applying pressure at the outer rim of the filter; not at the flexible center. Make sure the filter element is completely in place before installing the cover.

**IMPORTANT:** **DO NOT use** the cover latches to force the filter into the canister -- the cover should fit on with no extra force.

**NOTE:** **DO NOT** use petroleum based lubricants on the sealing surfaces of the filter; use talcum powder or dry silicone lubricants if required for filter installation.

10. Install the cover with the word “TOP” properly oriented to the top of the canister. Give the cover a slight twist as it reaches the canister to make sure the tab inside the cover goes into a slot, otherwise the cover will not fit properly. Make sure both the top and bottom cover latches are securing the cover in place.

**Proper Orientation of Air Cleaner Cover**

11. Check the air intake hose for cuts, nicks, cracks, etc., and the hose clamps for tightness.

12. Reset the air filter restriction gauge (press button on the end of the indicator).

**Engine Cooling System**

**Radiator Screen and Cooling Fins**

To prevent the engine from overheating and possible engine damage, clean grass clippings, chaff, and dirt from the fine mesh radiator intake screen **daily**. In certain mowing conditions (dry grass, leaves, tree “cotton”, etc.), it may be necessary to check and clean the screen several times during use to prevent engine overheating.

1. Lift to remove the screen. To clean the screen, wash with soapy water or blow out with compressed air.

2. Inspect the radiator cooling fins for material lodged in this area which would restrict cooling airflow. Use pressurized air or water to clean. **DO NOT use any tool, like a screwdriver or knife,** to clean material out of the fins as this may damage the cooling fins. **DO NOT** use cold water on a hot radiator.
Maintenance Instructions

**NOTE:** Directing pressurized air or water from the fan side of the radiator outward is recommended to dislodge material packed on the outside of the cooling fins. **DO NOT** use cold water on a hot radiator.

**WARNING**

Radiator and engine parts can become extremely hot during operation. Wear gloves and avoid touching hot parts while cleaning the radiator screen and cleaning debris away from the engine and cooling system.

*Flushing Radiator and Changing Coolant*

Change engine coolant **every year.** Drain the coolant from the engine and radiator:

1. Remove the radiator cap.
2. Open the drain cocks on the engine block and radiator (see the Kubota Owner’s Manual for location of the drain cocks). Also, drain the coolant recovery tank.
3. If there is any **indication of deposits** or scaling inside the radiator, use a commercial scale remover and **flush the cooling system** thoroughly before adding fresh coolant.

Use a pre-mixed 50/50 solution of antifreeze (ethylene glycol) and distilled water to refill the cooling system.

**IMPORTANT:** The solution of antifreeze and water must be thoroughly pre-mixed before putting it in the engine. Adding pure antifreeze into the radiator may cause damage to the engine from overheating.

**IMPORTANT:** Maintain **proper coolant level** in the radiator and coolant recovery tank. The coolant level should be maintained between **FULL** and **LOW** marks on the coolant recovery tank. **Recheck** the coolant level after the first time the engine has been operated after filling the coolant system (it would be normal to add a little coolant after initial operation).

Grass Buildup in Mower Deck Housing

**DANGER**

Before raising or removing the mower deck for cleaning, stop the engine, remove the ignition key, and disconnect the electrical plug on the fuel shut-off solenoid.

1. **Raise** the deck lock lever handle on each side of the carrier frame and **pull out** to release carrier frame for tilting action.
2. Using the carrier frame lift handle, raise deck to the **TILT-UP** position and insert the deck hook into the tilt-up latch on the tractor body.
3. Clean grass buildup underneath the deck using a pressure washer (and scraper if required).

**NOTE:** While some degree of material buildup in the mower deck housing can be tolerated, a point is finally reached where cutting quality deteriorates and clogging begins to occur because of too much buildup on the baffling and housing.
4. Lower the deck to the normal operating position and re-engage the deck lock levers.

**CAUTION**

Do not operate machine with deck tilt-up pivot joint unlocked.

**GHS Blower**

Normally, the GHS blower operates with no maintenance or cleaning. However, when mowing **grass that is dirty and damp** (especially certain springtime mowing conditions), a deposit of dirt may accumulate inside the blower housing, causing wear and binding of the blower wheel. When operating in these conditions, **inspect the blower frequently for dirt buildup.**

**NOTE:** A visual clue of binding of the blower wheel is the blower **blade tips are polished** from rubbing on dirt.

When a dirt deposit is found, use a high pressure washer or water spray to clean the inside of the housing as follows:

**DANGER**

Before attempting to wash the blower, stop the engine, remove the ignition key, and electrical plug on the fuel shut-off solenoid. Wear goggles or face shield.

1. Remove the GHS blower drive belt tension by depressing the idler pulley on the tightener arm. Roll the belt off the blower pulley. The belt should be clear of the blower pulley, allowing free movement of the blower wheel.

**IMPORTANT:** With the belt removed, the blower wheel must spin freely. Any binding or dragging of the wheel is an indication of dirt buildup. This buildup must be cleaned to avoid abrasive wear of the blower blades, excessive power loss and eventual loss of blower performance (clogging).

2. Use a pressure washer or water spray, and direct the spray inside the blower housing against the blower blades. Water pressure will cause the blower wheel to begin to spin and the combination of spinning action and water will effectively wash the inside of the housing. Spray may be directed against the blower blades vertically and horizontally to cause rotation in both directions for thorough washing action. **Wash blower until the blower wheel spins freely** in both directions.

3. Reinstall the GHS blower drive belt by reversing the removal procedure.

**GHS Exhaust Screen**

Refer to Cleaning the GHS Exhaust Screen in Operating Instructions.

**Hydrostatic Transmission Cooling Fins**

Keeping the cooling fins on the hydrostatic transmissions clean and free of obstruction is **essential to avoid overheating** the transmission fluid and shortening transmission life. The cooling fins should be checked **every 100 hours**; and cleaned if necessary.

To clean the fins, use compressed air and/or a pressure washer. The cooling fins extend all the way around the housing -- the fins underneath need to be clean as well as the more visible fins above. Also, pay close attention to the area under the drive pulley.
**Maintenance Instructions**

**IMPORTANT:** In case an oil leak develops on the input shaft, the cooling fan blowing dusty air and oil on the transmission will quickly pack the cooling fins with oily dirt. If this condition occurs, replace the seal immediately to avoid overheating and damaging the transmission. The input shaft assembly and seal are easily replaced without removing the transmission from the machine.

An additional procedure in maintaining transmission cooling is to inspect the cooling fans. Replace the fan(s) if blades are missing or damaged.

**CHECKING/SERVICING**

**DANGER**

To prevent accidental starting of the engine when servicing or adjusting the machine, remove the key from the ignition switch and disconnect the electric plug on the fuel shut-off solenoid.

**Engine Cooling System**

**Coolant Level**

**WARNING**

NEVER remove the radiator pressure cap when the engine is hot — hot water could spray and cause a burn if the cap is taken off too soon.

Check the coolant level in the coolant recovery tank and maintain the coolant level between the FULL and LOW marks on the recovery tank. When the engine is cold, the coolant level should be at or slightly above the LOW mark on the recovery tank.

If the coolant level is low, remove the radiator cap and fill to the overflow port level and then fill the recovery tank above the LOW mark. Use a pre-mixed 50/50 solution of antifreeze (ethylene glycol) and distilled water to fill the cooling system.

**IMPORTANT:** The coolant solution of antifreeze and distilled water must be thoroughly pre-mixed before putting it in the engine (adding pure antifreeze into the radiator may cause damage to the engine by causing overheating).
**Maintenance Instructions**

**CHECKING/SERVICING**

---

**Alternator Belt Tension**

Check and adjust the alternator belt tension to avoid engine overheating and insufficient battery charging. Push on the belt in the middle of the span between the alternator and crankshaft. If properly tensioned, it should deflect about 0.4 in. (10 mm). Also check the belt for cracks or deterioration.

---

**Battery**

**NOTE:** For initial battery service during setup, refer to Battery Service in Assembly Instructions.

**IMPORTANT:** Make sure battery is securely mounted in the frame. A loose battery may cause damage to the case resulting in acid leakage and severe damage to the machine. A hazard may be created by damage to critical working parts and safety systems.

**Electrolyte Level**

The battery electrolyte level should be checked after every 25 hours of operation. To check electrolyte level:

1. Remove battery cell filler caps.
2. Check the electrolyte level. If the level is below the bottom of the vent well, fill with distilled water to the bottom of the vent wells [1/4 to 1/2 in. (6 to 13 mm) above the plates].
3. Replace filler caps.

**IMPORTANT:** DO NOT overfill the battery. Electrolyte will overflow through the vented caps onto parts of the machine and WILL result in severe corrosion.

**Cleaning the Terminals**

If battery terminals are corroded, remove battery from the mower. Using a wire brush, remove corrosion with a solution of one part baking soda and four parts water. Rinse with clean water. Coat the terminals with petroleum jelly or terminal protector spray to retard further corrosion.

---

**Security of Air Filtration Components**

**NOTE:** The following inspection is only an external inspection and should be done without “disturbing” the filtration components.

On a daily basis, visually inspect the external condition of the complete air cleaner system. The following items should be inspected:

1. Check the Donaldson Radialseal™ air cleaner canister for damage. Make sure the cover is in place and the cover latches are secure - do not run the engine without the air cleaner cover in place and secure.
2. Inspect the air intake hose for cracks, nicks, cuts, etc., and check the hose clamps for tightness.
3. Check to make sure the air filter restriction gauge is in place and hose connections are secure.
**Charging the Battery**

Check the battery charge by measuring the specific gravity of electrolyte; if specific gravity is less than 1.225, the battery will need to be charged as follows:

1. Charge the battery at 15 amps for 10 minutes. **DO NOT** exceed 20 amps maximum recommended charging rate. Charge until specific gravity is at least 1.250. Total charging time should not exceed one (1) hour.

2. After charging the battery, use distilled water to adjust the electrolyte level to the bottom of the vent wells [1/4 to 1/2 in. (6 to 13 mm) above the plates].

**DANGER**

**BATTERIES PRODUCE EXPLOSIVE GASES**

- Charge the battery in a well-ventilated area, so that gases produced while charging can dissipate.
- Keep sparks, flames, and smoking materials away from the battery at all times.
- Make sure the battery cap vents are open (check manifold vent on each cap).
- Make sure the battery charger is unplugged before connecting or disconnecting cables to the battery.

**Wheel Bolt Torque**

Check the eight (8) lug bolts that mount the drive tires. **Every 100 hours** they should be torqued to 75 to 85 lb-ft (102 to 115 N·m).

**Sharpen Mower Blades**

Check mower blade(s) for **straightness, sharpness, condition of the cutting edge**, and **balance every 10 hours** of operation (or more often when mowing abrasive type grass or operating on sandy soils). **Replace blades if worn, bent, cracked, or otherwise damaged** (refer to **REPLACING/REPAIRING the Mower Blades** in this section). Use the following procedure to check and sharpen blades:

**NOTE**: Keep blades sharp - cutting with dull blades not only yields a poor mowing job but slows the cutting speed of the mower and causes extra wear on the engine and blade drive by pulling hard.

1. Stop the engine, remove ignition key, and disconnect the electrical plug on the fuel shut-off solenoid **before** raising the mower deck to service blades.

2. Raise the deck and secure it in the TILT-UP position. Refer to **CLEANING the Grass Build-up in Mower Deck Housing** in this section for deck raising instructions.

**DANGER**

**NEVER** operate cutter blades with the deck in the raised position.

**NOTE**: PTO shaft must be **disconnected** before checking blades for straightness.

3. Check the blades for **straightness** by marking the blade tip position inside the deck housing, and then rotating the opposite end of the blade to the same position and comparing. If the difference in blade tip track is **more than 1/8 in.** (3 mm), the blade is bent and **should be replaced**.

**Tire Pressure**

Inflate tires to pressures shown below:

- **Deck Caster Wheel** = 20 PSI (137 kPa)
- **Drive** = 15 PSI (103 kPa)
- **Tailwheel** = 20 PSI (137 kPa)

* If equipped with optional pneumatic tires
4. If the blade cutting edge is **dull or nicked**, it should be sharpened. Remove blades for sharpening by grasping the end of the blade using a rag or a thick, padded glove, while loosening and removing the nut, lock washer, and flat washer that mounts the blade.

5. Grind cutting edge at the same bevel as the original. Sharpen only the top of the cutting edge to maintain sharpness.

**NOTE:** Blades can be sharpened with an electric blade sharpener, conventional electric grinder, or a hand file.

6. Check blade balance by positioning the blade **horizontally** on a blade balancer or use a nail or shaft through the center hole. If either end of the blade rotates downward, grind (remove) metal on that end until the blade will balance. The blade is properly balanced when neither end drops. Balance of a blade is generally maintained by removing an equal amount of material from each end of the blade when sharpening.

7. Mount the blade with wing tips pointing up into the housing. **For gear driven decks** reinstall the blade, washer, lock washer, and nut. **Tighten the nut to 60 lb·ft (81 N·m).** For **belt driven decks** reinstall the spacer (if applicable), blade, washer, and bolt. **Tighten the bolt to 70 lb·ft (95 N·m).**

**NOTE:** When reinstalling blades on **GHS models**, remember, the blades counter-rotate and the LH and RH blades must not be switched. Check for proper blade rotation before installing blades on the deck. Refer to **Blade Rotation** illustrations shown in **Clogging Checklist** in **Operating Instructions** for correct blade rotation.

### Drive Belts

Raise the body and inspect the condition of the five (5) belts (4 belts on SD models) **every 25 hours** of operation - engine PTO drive, jackshaft drive, hydrostatic ground drive, GHS blower drive, and engine alternator belt. If the belts show **signs of cracking or deteriorating**, the belts should be replaced. Refer to **REPLACING/REPAIRING** the **Drive Belts** in this section.
Mower Deck Gearbox Oil Seals

The mower deck gearbox seals should be inspected every 25 hours for evidence of oil leaking; particularly the lower oil seal on the blade drive gearbox. This seal is protected by the trash guard on the blade hub and seal protector plate on the housing, but is still vulnerable to seal damage due to operating in an adverse environment. The mower blade must be removed for inspection of the seal, so it is recommended to inspect the gearbox seals when blades are removed for sharpening. If an oil leak is noted, the seal should be replaced and the gearbox assembly relubricated. Refer to LUBRICATION for Mower Deck Gearbox Lubrication in this section.

Fuel Injection Nozzle Pressure

Check and adjust the Kubota diesel engine fuel injection nozzle pressure yearly or every 1000 hours (or in case of low power). Refer to the Kubota Workshop Manual for specifications and procedures to check nozzle pressure. For engine servicing, contact an authorized Kubota engine dealer or a trained engine technician.

IMPORTANT: Always use the proper engine service manual when working on the engine. Improper engine maintenance or adjustments will adversely affect engine operation, performance, durability, and may VOID the warranty.

WARNING

The fuel oil injection system operates under high pressure and can penetrate the skin and result in serious injury. Unqualified persons should not remove or attempt to adjust a pump injector, nozzle, or any part of the fuel injection system.

Transmission Control Setting

On a yearly interval or when an out-of-adjustment condition is observed, check the transmission control for proper function as follows:

Neutral-Park

With the mower parked on level ground, start and run the engine, first at idle and then normal operating speeds. With the FSC in the NEUTRAL-PARK position, there should be no movement of either drive tire. If the tire(s) are "creeping" forward or reverse, refer to ADJUSTMENTS for the Neutral Function Adjustment - Step 3 in this section.

Straight Ground Tracking

Check for straight ground track by driving on a smooth, level surface with hands off the steering levers. Set the FSC at different speeds and observe if the mower moves in a straight line (use a cement joint or other line on the ground for reference). If the machine is drifting to the right or left, refer to ADJUSTMENTS for Straight Ground Track Adjustment - Step 4 in this section.
Blade Brake Action

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is important to check and maintain blade brake action for safe operation of the machine.</td>
</tr>
</tbody>
</table>

Check the function of the cutter blade brake (and blower brake on GHS models) by engaging the blade clutch (PTO), operating the engine at full throttle, then disengaging the clutch and measuring how quickly the blades stop. Watch the rotation of the blade drive shaft and blower pulley as a visual indication that movement has stopped. If the brake is working properly, all rotation will stop five (5) seconds after disengagement of the clutch. If the brake system malfunctions - blades do not stop in five (5) seconds - adjust or repair the brake before operating the mower. Refer to ADJUSTMENTS for Clutch Disengagement/Brake Action in this section.

PTO U-Joints

The PTO U-joints should be inspected yearly for looseness and wear. If either is noticed, the respective shaft or tube should be replaced. A worn U-joint can cause vibration and extensive damage to the PTO and the whole machine.

Safety Switch System

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is important to check and maintain the safety switch system for safe operation of the machine.</td>
</tr>
</tbody>
</table>

There are three (3) safety interlock switches on the tractor; Seat Switch, FSC Neutral-Park Switch, and PTO Switch.

NOTE: There is a 1/2 second time delay function on the seat switch to avoid engine power interruption when driving over bumps.

If any of the following conditions occur during starting or operating, a safety interlock switch may be malfunctioning. Contact your Walker dealer for troubleshooting and/or replacement.

- With or without an operator in the seat, the engine starts with the Forward Speed Control (FSC) and/or the PTO engaged.
- With an operator in the seat, the engine starts but dies soon after the Forward Speed Control (FSC) or PTO is engaged.
- Without an operator in the seat, the engine starts and continues to run with the Forward Speed Control (FSC) and/or PTO engaged.
- With an operator in the seat, the Forward Speed Control (FSC) and PTO disengaged and oil pressure warning horn sounding, the starter will not engage.

Forward Speed Control Friction Lock

The FSC friction lock is designed to hold the selected forward travel speed when the steering levers are moved and yet the friction is not too heavy to make moving the FSC control difficult (too much friction). The procedure for checking the FSC friction lock is as follows:

1. With the engine off, place the FSC in the full FORWARD position and pull both steering levers back; the FSC lever should not move. If the FSC lever moves back when the steering levers are pulled back, the friction needs to be increased.

2. With the steering levers held back, move the FSC lever back from the FORWARD position. With a proper amount of friction adjusted, the FSC lever should move back with a slight amount of resistance (friction). If the FSC lever movement is “stiff”, the friction needs to be decreased.

If the FSC friction lock needs to be adjusted, refer to ADJUSTMENTS for Forward Speed Control Friction Lock in this section.
REPLACING/REPAIRING

DANGER

To prevent accidental starting of the engine when replacing parts or repairing the machine, remove the key from the ignition switch and disconnect the electrical plug on the fuel shut-off solenoid.

IMPORTANT: ALWAYS use genuine factory replacement parts. Substitute parts CAN result in product malfunction and possible injury to the operator and/or others.

Drive Belts

There are five (5) individual belts on GHS models or four (4) belts on SD models:

- Engine PTO Drive Belt (3 Groove Power Band)
- Jackshaft Drive Belt
- GHS Blower Drive Belt (GHS Model Only)
- Hydrostatic Ground Drive Belt
- Engine Alternator Belt

The belts may be removed and replaced using the procedures described on the following pages.
Engine PTO Drive Belt (3 Groove Power Band)

1. To remove the engine PTO drive belt:
   a. Remove the jackshaft drive belt as described in next section.
   b. Loosen the brake band adjustment nut to allow the clutch idler pulley to drop down against the frame. This provides maximum looseness of the belt to assist removal.
   c. Remove the PTO drive belt by “walking” the belt off of the engine and PTO pulleys one groove at a time until the belt is completely removed.

2. Install the PTO drive belt by reversing the removal procedure.

3. Refer to ADJUSTMENTS of Blade Clutch (PTO) in this section to check and make the following adjustments:
   a. Clutch disengagement (brake band adjustment) and brake action
   b. Clutch engagement for proper belt tension
**Maintenance Instructions**

**REPLACING/REPAIRING**

*Jackshaft Drive Belt*

1. To remove the jackshaft drive belt:
   
   a. Relax the belt by releasing spring tension from the jackshaft drive idler arm using the **cold start lever**.

   
   b. Slide the idler arm release down to unlock the idler arm from the spring lever. Then pivot the arm up and away from the belt.

   
   c. Roll the belt off the jackshaft pulley and remove.

2. Reverse the removal procedure to replace the jackshaft drive belt.
Maintenance Instructions

**GHS Blower Drive Belt**

1. Remove the GHS blower drive belt tension by depressing the idler pulley on the tightener arm. Roll the belt off the blower pulley.

2. Reverse the procedure to install the GHS blower drive belt.

---

**GHS Blower Drive Belt Assembly (Disengaged)**

**GHS Blower Drive Belt Assembly (Engaged)**
Hydrostatic Ground Drive Belt

1. To remove the hydrostatic ground drive belt:
   a. Push down on the spring-loaded belt tightener arm and idler pulley to relax belt.
   b. Slide belt off pulleys, then release the idler.

2. Reverse the procedure to install the hydrostatic ground drive belt.
Engine Alternator Belt

1. To remove the alternator belt:
   a. Loosen the alternator mounting pivot bolt and the alternator bracket tensioner bolt.

   b. Pivot the alternator as shown to relax and remove belt.

2. Reverse the procedure to install the belt. Adjust and check the belt tension by referring to CHECKING/SERVICING the Alternator Belt Tension in this section.
Fuel Filter

Model D21d has two (2) fuel filters. Replace both the in-line filter and the Kubota filter element yearly or every 400 hours of operation.

Fuel Filter Location

IMPORTANT: Replace the fuel filters only in a clean area where the fuel line and connections will not be contaminated by dust and dirt.

1. Close the Kubota fuel filter cock.
2. Remove and replace the in-line filter; expand and slide clamps on either side of the filter away from filter and pull fuel lines off filter.
3. Loosen the ring screw on the Kubota filter assembly, remove the filter pot and filter element.
4. Clean the filter pot and reassemble the filter assembly with a new filter element (use only a Kubota replacement filter #15231-43560).
5. Open the fuel filter cock.

Blade Overload Shear Bolts

NOTE: Blade shear bolts are not used on belt driven decks.

On gear driven decks, each cutting blade is keyed to a blade hub by two (2) shear bolts (10-24 x 5/8 in. stainless steel machine screws). These bolts are designed to shear and protect the blade drive gearbox from damage if the blade encounters a shock load.

Cutting Blade Shear Bolts

NOTE: Tightening the 5/8-18 blade mounting nut to 60 lb·ft (81 N·m) is also important for proper shock load protection. It is important to not overtighten the mounting nut since this defeats (overrides) the function of the shear bolts.

If these bolts shear, remove the blade and install new bolts. Refer to CHECKING/SERVICING in this section for Sharpen Mower Blades which describes the blade removal and installation procedure.

After reinstalling the blade, check blade timing (on gear driven decks) by moving blades through one (1) complete revolution. Make sure blade tips pass clear of each other. If timing is incorrect, contact your Walker dealer.
Mower Blades

Mower blades are removed and remounted as described in Sharpen Mower Blades instructions (refer to CHECKING/SERVICING in this section). During the course of sharpening and inspecting mower blades, if there are any of the following conditions of wear or damage, blades should be replaced for reasons of safety and performance of the machine:

- An excessive amount of the flat section of the blade has been ground away (removed) when the blade is sharpened. Replace the blade when less than a 3/4 in. (19 mm) flat section remains at the blade tip.

- Examine ends of the blade carefully, especially the intersection where the flat section of the blade turns up to form the “wing tip” (refer to CHECKING/SERVICING for Mower Blade Profile for Sharpening illustration in Sharpen Mower Blades instructions). Since sand and abrasive material can wear metal away in this area, the blade should be replaced when metal thickness has worn to 1/16 in. (2 mm) or less.

- Check the blades for straightness by marking blade tip position inside the deck housing and then rotating the opposite end of the blade to the same position and comparing. If the difference in blade tip track is more than 1/8 in. (3 mm), the blade is bent and should be replaced.

- Inspect the blade surface, especially in formed areas, for cracks. Replace the blade if any cracks are found.

DANGER

When blades are operated over sandy soil, and if blades are allowed to wear, a “slot” may be worn into the wing tip of blade. Eventually a piece of the blade may break off creating a serious potential for injury or damage.

WARNING

DO NOT try to straighten a blade that is bent. NEVER weld a broken or cracked blade. ALWAYS replace with a new blade to assure safety.

Reinstall the blades as described in Sharpen Mower Blades instructions in this section. If blades are replaced, always use Walker original equipment blades to ensure safety and optimum performance. The quality and performance of replacement blades offered by other manufacturers cannot be guaranteed, they could be dangerous.

CAUTION

ALWAYS use genuine factory replacement parts. Substitute parts CAN result in product malfunction and possible injury to the operator.
ADJUSTMENTS

Transmission Control

The following instructions reflect the most current transmission linkage configuration with a spring/dampener connected to the steering lever (starting S/N 11-109716) and the FSC using direct linkage instead of a sliding fork disconnect (starting S/N 15-134121). Earlier units will need to use the transmission control adjustment instructions from the P/N 9000-30 Service Manual.

IMPORTANT: The proper adjustment of the transmission control stops is **essential** for efficient operation and life of the transmission. These stops are properly adjusted at the factory and should only require readjustment if the transmission or related control linkage is removed or changed.

NOTE: It would not be unusual for a new machine, after initial 5 or 10 hours of operation, to begin to not travel straight (this is due to the break-in of the transmissions). In this case, proceed to *Straight Ground Travel Adjustment - Step 4*.

IMPORTANT: The following adjustment procedures are sequential. Check and adjust each function in the order given.

Set FSC Travel Limits (Stop) - Step 1

1. Move the Forward Speed Control (FSC) lever to the most FORWARD position.

2. Check clearance of the RH and LH steering lever actuator arms with the frame and adjust **forward stop bolt** so each lever clears the frame by at least 1/16 in. (1.6 mm). Clearance of the arm to the frame should be checked while applying **pressure back** on the arm to remove any slack in the linkage.

3. Tighten the jam nut on the forward travel stop adjusting bolt.
Set Maximum Forward Travel Speed (Stop) - Step 2

1. Position the FSC lever to the most **FORWARD** position.

2. Turn the steering lever adjustment nut(s) until 2 or 3 threads are showing past the end of the nut.

3. Loosen the jam nut at the other end of the control rod (where it connects to the transmission control arm).

4. For each steering lever, use a wrench on the adjustment nut, turn the control rod counter-clockwise (CCW) until the steering lever begins to move backward, then make two additional turns. Next, reverse and turn the control rod clockwise (CW) until the **steering lever stops moving forward** and then make one additional turn. Tighten the jam nut.

**NOTE:** Failure to make at least one extra turn on the control rod can place excessive loads on the transmission internal control stops and cause internal wear and damage to the transmission. Making additional turns beyond one turn reduces the maximum forward travel speed.

Neutral Function Adjustment - Step 3

1. Securely block the tractor up so the drive tires are off the ground.

2. Move the FSC lever to the **NEUTRAL-PARK** position (rear travel limit).

3. Start the engine (operate first at idle and then normal operating speeds) and check for movement of the drive wheels.

**NOTE:** If the engine will not start, check the operation of the neutral safety switch.

**CAUTION**

NEVER attempt to disconnect any safety devices or defeat the purpose of these safety devices.
Neutral Function Adjustment

4. If drive wheels are moving, adjust the FSC neutral stop by adjusting the FSC actuator rod (see Neutral Function Adjustment photo). If the drive wheels are moving backward, loosen the jam nut and lengthen the FSC actuator rod by turning the adjustment nut counterclockwise (CCW). If the drive wheels are moving forward, use the opposite clockwise (CW) adjustment.

5. At this point it may not be possible to adjust both wheels stationary since the differential adjustment has not been made. (This is covered by the Straight Ground Travel Adjustment - Step 4). In this case, the neutral adjustment should be made for one wheel stationary and the other moving forward slightly.

6. Check the neutral safety switch for closure and function with the FSC in neutral (the engine will not start when the switch is open).

Straight Ground Travel Adjustment - Step 4

1. Sit in the seat, start the engine (operate at normal speed), and with the FSC in the NEUTRAL-PARK position check for forward movement of either drive wheel (if either wheel moves backward, refer back to Neutral Function Adjustment - Step 3 and readjust). Tighten the steering lever adjustment nut on the side of the mower with the wheel moving forward until wheel movement stops.

2. Check for straight ground track on a level surface (with hands off the steering levers). Set the FSC at several different speeds and observe if the mower moves in a straight line (use cement joint or other line on the ground for reference).

3. If travel is not straight, tighten the adjustment nut that is on the same side of the mower as the wheel that is moving too fast, e.g., the mower tracks to the right, indicating the LH wheel is moving too fast, tighten the LH adjustment nut.
Blade Clutch (PTO)

**Clutch Disengagement/Brake Action**

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is important to check and maintain blade brake action for safe operation of the machine.</td>
</tr>
</tbody>
</table>

The **declutched or disengaged** position of the blade clutch idler pulley is adjustable and is set to give belt release **without excessive slack** and to apply the blade brake. The blade brake is activated by linkage to the clutch idler pulley mechanism. The brake is designed to stop the blades within five (5) seconds after disengaging the clutch.

Use the following procedure to check and adjust clutch disengagement and brake action:

1. Use the adjustment nut on the brake band (refer to **PTO Clutch Disengagement Adjustment** illustration) to set the position of the clutch idler pulley in the **declutched** position. Adjust the declutched pulley position to give **1/2 in. (13 mm) pulley travel** from "clutch engaged" to "clutch disengaged." To check and adjust the pulley travel, first engage the clutch, then measure the distance the pulley moves down as the clutch is disengaged.

2. After the pulley travel is set, check blade brake action as described in **CHECKING/SERVICING the Blade Brake Action** in this section. If the brake does not stop the blades within five (5) seconds, check the following:

   a. Check clearance between the clutch idler pulley and the motor mount when the pulley is in the declutched position. If there is no clearance and the idler pulley rests on the frame, the blade brake will not be applied when the clutch is disengaged. Normally, this problem would be caused by a short engine PTO drive belt. Change the belt (refer to **REPLACING/REPAIRING the Drive Belts** in this section), and readjust pulley travel as described by step 1 (above).

**PTO Clutch Disengagement Adjustment**

b. Check both the brake band and brake drum on the drive pulley for wear. Replace worn brake parts and readjust pulley travel as described by step 1 (above).

**Clutch Engagement/Belt Tension**

The clutch engagement and PTO belt tension are adjusted using the clutch actuator rod. Initially, after installing a new PTO belt, **after 10 hours and every 100 hours** thereafter, check and adjust for the three dimensions in the clutch linkage as shown.

Adjust the bolt head clearance [1/4 to 3/8 in. (6 to 10 mm)] first, then adjust spring length. If adjustments are needed more frequently than 100 hours to maintain the linkage dimensions, it may suggest problems with pulley wear or belt misalignment.
Forward Speed Control Friction Lock

The FSC friction lock is adjusted to hold the selected forward speed even when the steering levers are moved. The friction should not be so heavy as to make moving the FSC difficult (too much friction). The procedure for checking and adjusting the FSC friction lock is as follows:

1. Place the FSC in the full FORWARD position and pull both steering levers back; the FSC lever should not move. If the FSC lever moves back when the steering levers are pulled back, the friction needs to be increased.

2. With the steering levers held back, move the FSC lever back from the FORWARD position. With a proper amount of friction adjusted, the FSC lever should move back with a slight amount of resistance (friction). If the FSC lever movement is “stiff”, the friction needs to be decreased.

3. The FSC friction is increased or decreased by tightening or loosening the friction adjustment nut. Loosen or tighten the nut and check the control function until conditions of both steps 1 and 2 (above) are met.
**Maintenance Instructions**

**ADJUSTMENTS**

**Steering Handles**
An adjustment range of approximately 3 in. (76 mm) is available on the steering handles - the handles can be adjusted forward or aft depending on the arm length of the operator. The handles can be adjusted by loosening the locknut at the pivot point and the locknut holding the handle in position in the adjustment slide. Adjust handles into most comfortable position and tighten both locknuts.

**Tilt-Up Deck Adjustable Stop**
When the carrier frame hinge joint is properly adjusted, the deck lock levers should move in and out of the engaged and disengaged positions freely. All four (4) hitch pins used for height adjustment should sit flush on the washers above the deck pin bushing. On a level surface, if any pin is sticking up (likely the front pins), tighten the opposite side or loosen the same side to lower the pin. Adjustments are made by loosening the jam nut and tightening or loosening the set screws on the Deck Mount Pivot Brackets. Retighten the jam nut when the adjustment is complete.
GHS “Full” Signal Horn Adjustment

The vertical position of the Grass-Pak® switch is critical to make sure the catcher box does not overfill causing the delivery chute to clog. The vertical position can be adjusted by moving the aluminum shaft and vane on the Grass-Pak® switch.

1. Position the discharge chute so that it is pointing straight back.
   a. Turn the ignition switch to ON (RUN) and move the blade clutch to the ENGAGED position (engine not running).
   b. Open the catcher back door and monitor the spout position (as it oscillates) and move the blade clutch to the DISENGAGED position and turn the ignition switch to the OFF position.

   **DANGER**

   **PINCH POINT - SPRING LOADED DOOR**

   When lowering the door on the GHS catcher, BE VERY CAREFUL to keep hands, fingers, etc. out of the hinging mechanism and away from the door frame as the door closes. The springs that hold the door closed during operation are very powerful, and the door can slam shut with considerable force.

   **WARNING**

   **DO NOT** test the Grass-Pak® switch with the engine running. Projectiles CAN be thrown out of the grass delivery spout and CAN cause serious injury to bystanders or property damage.

2. Measure from the exhaust screen (top of catcher) to the top of the Grass-Pak® switch actuator vane, refer to Adjusting the Grass-Pak® Switch illustration. The proper measurement should be between 4 and 4-1/2 inches (10 and 11.5 cm).

3. If adjustment is required, loosen front adjustment nut then move aluminum shaft and vane to the recommended measurement. Adjustments should be done in very small increments checking the measurement each time until the recommended measurement is achieved.

   **NOTE:** It will not be possible to adjust the switch to give a signal at the precise instant the catcher is full for a wide variety of mowing conditions. For example, wet heavy grass will fill the catcher differently than dry fluffy grass, causing the signal to come on a little sooner or later than usual. Primarily, the switch should be adjusted to give the “full” signal with a little advance warning before overfilling and clogging of the grass delivery chute begins (regardless of mowing conditions).
LIMITED WARRANTY
FOR
WALKER
COMMERCIAL RIDER MOWER

1. WHAT THIS WARRANTY COVERS, AND FOR HOW LONG:

Walker Manufacturing company will, at its option, repair or replace, without charge, any part covered by this warranty which is found to be defective in material and/or workmanship within one (1) year* after date of sale to the original retail purchaser unless the product is used for rental purposes, in which case this warranty is limited to ninety (90) days. At Walker’s request, customer will make the defective part available for inspection by Walker and/or return the defective part to Walker, transportation charges prepaid. All parts and components of the Walker Mower are covered by this warranty except the following components which are warranted separately by their respective manufacturers:

Kubota Engine
Battery

The available warranties covering these items are furnished with each mower. Walker does not assume any warranty obligation, liability or modification for these items, which are covered exclusively by the stated warranty of the respective manufacturers noted above.

* Extended warranties are offered for the following powertrain components:
- A three (3) year unlimited hour warranty is offered for the Walker P/N 6200-9 Gear Axle Assembly.
- A three (3) year or 3000 hour (whichever comes first) warranty is offered for Eaton Model 7 Hydrostatic transmissions; covers full cost of replacement up to 1000 hours of use, and after 1000 hours warranty coverage is prorated against 3000 hours.

2. WHAT THIS WARRANTY DOES NOT COVER:

A. This warranty does not cover defects caused by depreciation or damage caused by normal wear, accidents, improper maintenance, improper use or abuse of the product, alterations, or failure to follow the instructions contained in the Operator’s Manual for operation and maintenance.

B. The customer shall pay any charges for making service calls and/or for transporting the mower to and from the place where the inspection and/or warranty work is performed.

3. HOW TO OBTAIN SERVICE UNDER THIS WARRANTY:

Warranty service can be arranged by contacting the dealer where you purchased the mower or by contacting Walker Manufacturing Company, 5925 East Harmony Road, Ft. Collins, CO 80528. Proof of the date of purchase may be required to verify warranty coverage.

4. WARRANTY LIMITATION:

A. THERE IS NO OTHER EXPRESS WARRANTY. ANY WARRANTY THAT MAY BE IMPLIED FROM THIS PURCHASE INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IS HEREBY LIMITED TO THE DURATION OF THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

B. WALKER WILL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES AND/OR EXPENSES IN CONNECTION WITH THE PURCHASE OR USE OF THE MOWER. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to you.

C. Only the warranty expressed in this limited warranty shall apply and no dealer, distributor, or individual is authorized to amend, modify, or extend this warranty in any way. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by Walker, and should not be relied upon.

D. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.