Continue



```
Page 1 Service and Maintenance Manual Models 450A 450AJ PVC 2001 31215022 December 19, 2019 - Rev A AS/NZS... Page 2 We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto,... • USE ONLY REPLACEMENT PARTS OR
COMPONENTS THAT ARE APPROVED BY JLG. TO BE CONSIDERED APPROVED, R EP L AC E M E N T PA R T S O R CO M P O N E N TS M US T BE... Page 4 INTRODUCTION A - INTRODUCTION - INTR
                                                                                                  . A-1 Hydraulic System Safety . Page 6 Do NOT Do the Following When Welding on JLG Equipment....... . Page 7 TABLE OF CONTENTS SECTION NO. TITLE PAGE NO 3.14 Swing Motor ....
                                                                                                                                                                                                                                                                                                                                                                                                                   ....3-50 Removal . Page 8 TABLE OF CONTENTS SECTION NO. TITLE PAGE NO. Platform
                                      ..4-9 Removal . Page 9 TABLE OF CONTENTS SECTION NO. TITLE PAGE NO SECTION 5 - BASIC HYDRAULICS INFORMATION & SCHEMATICS Lubricating O-rings In The Hydraulic System ......5-1 Cup and Brush . Page 10 To Connect the JLG Control System Analyzer ......
.5-3 5-6. Page 14 LIST OF FIGURES FIGURE
NO. TITLE PAGE NO. 5-62. Wiper Seal Installation ......5-82 5-63. Page 15 LIST OF FIGURES FIGURE NO. TITLE PAGE NO. 7-37. Platform Console Harness (Without SkyGuard) - Sheet 3 of 12 ....
(Software Version P2.7) ......6-25 Machine Configuration Programming Settings - 450AJ (Software Version P2.7) . Page 20 We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto,... SECTION 1 - SPECIFICATIONS SECTION 1
SPECIFICATIONS 1.1 OPERATING SPECIFICATIONS 1.1 OPERATING SPECIFICATIONS 1.3 CAPACITIES Capacity Hydraulic System 38 gal. (143.8 L) Unrestricted 550 lb (249.5 kg) Hydraulic System 38 gal. (119.9 L) Maximum Operating Slope 5° Drive Hub 24 oz. NOTE: Aside from JLG recommendations, it is not advisable to mix oils of different brands or types, as
they may not con- tain the same required additives or be of comparable vis- cosities. SECTION 1 - SPECIFICATIONS Table 1-4. Mobilfluid 424 Specs Table 1-7. Mobil EAL 224H Specs SAE Grade 10W-30 Type Synthetic Biodegradable Gravity, API 29.0 ISO Viscosity Grade 32/46 Density, Lb/Gal. 60°F 7.35 Specific Gravity 0.922 Pour Point, Max -46°F
(-43°C) Pour Point, Max -25°F (-32°C) Flash Point, Min. Page 24 SECTION 1 - SPECIFICATIONS 2WD ONL Y Figure 1-1. Maintenance and Lubrication Diagram - Deutz 2.3L Engine 31215022... Page 26 SECTION 1 - SPECIFICATIONS 2WD ONL Y Figure 1-2. Maintenance and Lubrication Diagram - Deutz 2.9L Engine 31215022... Page 26 SECTION 1
SPECIFICATIONS 2WD ONL Y Figure 1-3. Maintenance and Lubrication Diagram - Kubotas Engine 31215022... Lubrication Diagram - Kubotas Eng
Pressure Gear Lube (oil) meeting API service classification GL-5 or... Page 28 SECTION 1 - SPECIFICATIONS Hydraulic Tank Hydra
SECTION 1 - SPECIFICATIONS Drive Brake Oil Change w/Filter - Deutz 2.9 L4 Lube Point(s) - Fill Plug Lube - EO Capacity - 2.7 oz. (89 mL) Interval - Every Year or 600 hours of operation Lube - Premium Hydraulic Fluid Comments - Check level daily/Change in accordance Interval -
Change as necessary... Page 30 SECTION 1 - SPECIFICATIONS Fuel Filter (Gasoline) Lube Point(s) - Replaceable Element Lube Point(s) - Replaceable Element Lube Point(s) - Replaceable Element Interval - Deutz
D2.9... Page 31 SECTION 1 - SPECIFICATIONS Charge Filter Engine Coolant Lube Point(s) - Fill Cap Interval - Change after first 50 hrs. and every 6 months Capacity (Kubota) - 2.25 gal. (8.5L) Comments - Remove the engine tray retaining bolt and Lube - Anti-Freeze pull out engine tray to
gain access. Page 32 SECTION 1 - SPECIFICATIONS Oil Change w/Filter - Kubota Lube Point(s) - Replaceable Component Interval - Every year or 1000 hours of operation Comments - Replace filter. SECTION 1 - SPECIFICATIONS 1.9 THREADLOCKING
COMPOUND JLG PN Loctite® ND Industries Description 0100011 242™ Vibra-TITE™ 121 Medium Strength (Red) Vibra-TITE™ 121 Medium Strength (Red) Vibra-TITE™ 121 Medium Strength (Red) NOTE: Loctite®... SECTION 1 - SPECIFICATIONS
1.10 TORQUE CHARTS SAE Fastener Torque Chart Values for Zinc Yellow Chromate Fasteners (Ref 4150707) SAE GRADE 5 BOLTS & GRAD
Chromate Fasteners (Ref 4150707) SAE GRADE 8 (HEX HD) BOLTS & GRADE 8 (HEX HD) BOLTS & GRADE 8 (HEX HD) BOLTS & GRADE 8 (Loctite® 242™ or 271™ or Tensile Stress (Loctite® 262™ or 271™ or Tensile Stress (Loctite® 242™ or 271™ or Tensile Stress (Loctite® 262™ or 271™ or Tensile Stress (Loctite® 242™ or 271™ or Tensile Stress (Loctite® 262™ or 271™ or 271
BOLTS & GRADE 2 NUTS Torque Torque (Loctite® 242<sup>™</sup> or 271<sup>™</sup> or Tensile Stress (Loctite® 262<sup>™</sup> or Size Bolt Dia Clamp Load (Dry) Area... SECTION 1 - SPECIFICATIONS SAE Fastener Torque Torqu
(Loctite® 242™ or 271™ or Tensile Stress (Loctite® 262™ or Size Bolt Dia Clamp Load (Dry or Loctite® ... SECTION 1 - SPECIFICATIONS SAE Fastener Torque Chart (Continued) Values for Magni Coating Fasteners (Ref 4150701) SOCKET HEAD CAPSCREWS Torque Torque (Loctite® 242™ or 271™ or Tensile Stress Clamp Load Torque (Loctite®
262<sup>™</sup> or Size Bolt Dia Area See Note 4 (Dry) K=0.17 Vibra-TITE<sup>™</sup> ... SECTION 1 - SPECIFICATIONS SAE Fastener Torque (Loctite® 242<sup>™</sup> or Tensile Stress Clamp Load Torque (Loctite® 262<sup>™</sup> or Size Bolt Dia Area See
Note 4 (Dry) K=0.17 Vibra-TITE™... SECTION 1 - SPECIFICATIONS Metric Fastener Torque Chart Values for Zinc Yellow Chromate Fasteners (Ref 4150707)* CLASS 8.8 METRIC NUTS Torque Torque Torque Torque Torque Torque (Loctite® 262™ or 271™ or Size Pitch Torque (Lube) (Loctite® ...
SECTION 1 - SPECIFICATIONS Metric Fastener Torque Chart (Continued) Values for Zinc Yellow Chromate Fasteners (Ref 4150707)* CLASS 10.9 METRIC (HEX HEAD) BOLTS, CLASS 10.9 METRIC (HEX HEAD) BOLTS, CLASS 10.9 METRIC NUTS CLASS 10.
42 SECTION 1 - SPECIFICATIONS Metric Fastener Torque Chart (Continued) Values for Magni Coated Fasteners (Ref 4150701)* CLASS 8.8 METRIC (HEX/SOCKET HEAD) BOLTS CLASS 8.8 METRIC (Dry or Loctite® 242™ or 271™ Size Pitch (Dry or Loctite® ... SECTION 1 -
SPECIFICATIONS Metric Fastener Torque Chart (Continued) Values for Magni Coated Fasteners (Ref 4150701)* CLASS 10.9 METRIC (HEX HEAD) BOLTS CLASS 10.9 METRI
worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto,... Service Technician as a person who has successfully com- this product will be fit for continued use. pleted the JLG Service Training School for the subject JLG Preparation,
Inspection, and Maintenance product model. Reference the machine Service and Mainte-nance Manual to perform inspections. SERVICE AND GUIDELINES
At any time when air, fuel, or oil lines are disconnected, clear adjacent areas as well as the openings and fittings themselves. SECTION 2 - GENERAL Component Disassembly and Reassembly unless specific torque requirements are given within the text, standard torque values should be used on heat-When disassembling or reassembling a
component, complete treated bolts, studs, and steel nuts, in accordance with the procedural steps in sequence. Hydraulic oil, which has an SAE viscosity of 10W-30 and a viscosity index of 152. NOTE: Start-up of hydraulic system with oil
temperatures below - 15°F (-26°C) is not recommended. SECTION 2 - GENERAL CYLINDER DRIFT TEST Cylinder oil must be at stabilized ambient temperature Theory before beginning this test. When a hydraulic cylinder is supporting a load, cylinder drift Measure drift at cylinder rod with a calibrated dial indicator. may occur
as a result of any of the circumstances below: In an area free of obstructions, cylinder must have load applied and appropriately positioned to detect drift. Filament wound bearings should be replaced if any of • Ground only to structure being welded. the following is observed: Do NOT Do the Following When Welding on JLG a. Frayed or separated
fibers on the liner surface. Equipment b. Cracked or damaged liner backing. Page 51 SECTION 2 - GENERAL NOTE: Refer the Operation and Preventive Maintenance Schedule Inspections Pre-Delivery or Frequent Annual AREA (Quarterly) (Yearly)
Inspection Inspection Boom Assembly Boom Weldments 1, 2 1, 2 Hose/Cable Carrier Installations 1, 2... Page 52 SECTION 2 - GENERAL Table 2-3. Inspection Inspection Functions/Controls Platform Controls return to neutral/off
when released 1, 3, 6, 9 1, 3, 6, 9 Ground Controls return to neutral/off when released 1, 3, 6, 9 Function Control Locks, Guards, or Detents... Page 53 Function Control Locks, Guards, or Detents... Page 53 Function Control Locks, Guards, or Detents...
Out of service for 3 months or more; Purchased used Annually, no later than 13 months from the date of the prior inspection, Includes all daily and quarterly inspections, mandated by regulating body Indicates a 50 hour interval required to perform task after initial use of machine. Page 54 SECTION 2 - GENERAL 1001159163 B Figure 2-1. Engine
Operating Temperature Specifications - Deutz 2.9 2-10 31215022... Page 55 CO2 Conversion > 60% per EPA 560/6-82-003 NOTICE: CO2 Conversion > 80% per CEC-L-33-A-93 MACHINE OPERATION USING NON-JLG APPROVED HYDRAULIC FLUIDS OR OPERATION OUTSIDE OF ** Virtually Non-toxic classification indicates an LC50 > 5000 ppm
per OECD 203 THE TEMPERATURE BOUNDARIES OUTLINED IN *** Fire Resistant classification indicates Factory Mutual Research Corp. Page 56 SECTION 2 - GENERAL 1. MACHINE OPERAT ION USING
NON-JLG APPROVED HYDRAULIC F LUIDS OR OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT LINED IN THE "HYDRAULIC F LUID OPERAT ION OUT SIDE OF THE TEMPERAT URE BOUNDARIES OUT SIDE OF THE SIDE OF
MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto,... Please refer to the ers. If you do not have a service garage or a particular
machine model. SECTION 3 - CHASSIS & TURNTABLE 3.3 LOCKOUT CYLINDER BLEEDING The tightening of the nuts should be done in stages. Fol- lowing the recommended sequence, tighten nuts per wheel torque chart. Start the engine. Table 3-1. Wheel Torque Chart Position the turntable to the normal stowed position. TORQUE SEQUENCE
Attach clear tubing to bleeder valve nipple. Page 61 SECTION 3 - CHASSIS & TURNTABLE 1001164093 C 1. Bolt 4. Keeper Pin 7. Bolt 10. Shim 12. Axle Lockout Cylinder 15. Page 62 SECTION 3 - CHASSIS & TURNTABLE 1001164092 F 1. Thrust Bearing 5.
Keeper Pin 8. Steer Cylinder 11. Kingpin 6. Washer 9. Link 12. Spindle 2. Bolt 3. Bolt 7. Washer 10. Nut 13. Pin 4. Bolt Figure 3-2. Steer Installation (Without Tow Package) 31215022... Page 63 SECTION 3 - CHASSIS & TURNTABLE 1001164095 D 1. Thrust Bearing 6. Bearing 11. Washer 15. Steer Cylinder 19. Spindle 23. Link 2. Bolt 7. Pin 12.
Washer 16. Link 20. Bracket 24. Pin 3. Bolt 8. Keeper Pin 13. Washer 17. SECTION 3 - CHASSIS & TURNTABLE 3.5 OSCILLATING AXLE LOCKOUT TEST 3.6 DRIVE ORIENTATION SYSTEM The Drive Orientation System (DOS) is intended to indicate to the operator conditions that could make the direction of movement of the chassis different than
the direction of move- LOCKOUT SYSTEM TEST MUST BE PERFORMED QUARTERLY, ANY TIME A SYS- ment of the drive/steer control handle. SECTION 3 - CHASSIS & TURNTABLE 3.7 DRIVE SYSTEM Drive speed is varied by a combination of drive pump dis- placement, engine speed, and motor displacement. Traction The four wheel drive
system consists of one variable displace- control is full-time and is present in all drive modes. There are ment closed loop pump, four variable displacement piston three drive modes that can be selected at the platform con- motors, gear reduction hubs, and a traction control manifold... SECTION 3 - CHASSIS & TURNTABLE 3.8 WHEEL DRIVE
ASSEMBLY NOTE: The drive hub and drive motor assembly weighs approxi- mately 149 lb (68 kg). Removal Use a supporting device capable of handling the weight of the drive motor, and unbolt the drive motors can be removed through the axle flange hub from the frame. SECTION 3 - CHASSIS & TURNTABLE 3.9
TORQUE HUB Tightening and Torquing Bolts Roll and Leak Testing USE EXTREME CARE WHEN USING AN AIR IMPACT WRENCH. DO NOT TIGHTEN Always roll and leak test Torque-Hubs after assembly to make sure that the unit's gears and sealants are working properly. BOLTS BEYOND THEIR TORQUE SPECIFICATION. SECTION 3 -
CHASSIS & TURNTABLE Main Disassembly for "B" Drives Hub-Spindle Disassembly Turn hub (1G) on side, Remove coupling (14) from wide NOTE: Start with large end of spin- end of s
(2WD and 4WD) - Sheet 1 of 2 3-11 31215022... Page 70 SECTION 3 - CHASSIS & TURNTABLE Spindle/Housing Ring Bearing Cup Thrust Washer Piston Bearing Cone O-Ring Bolt Ball Bearing 1D Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Bearing Cup Thrust Washer Piston Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Bearing Cup Thrust Washer Piston Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Bearing Cup Thrust Washer Piston Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Bearing Cup Thrust Washer Piston Bearing Cup Thrust Washer Piston Bearing Cup Cover Assembly Dowel Pin Retaining Ring Bearing Cup Thrust Washer Piston Be
Spacer Coupling... Page 71 SECTION 3 - CHASSIS & TURNTABLE Spindle/Housing Assembly Cover Assembly Cover Assembly Shaft Spindle 3A Carrier Thrust Spacer Retaining Ring Seal 3B Retaining Ring Cover Plate
Spring Bearing Cone 3C Needle Bearing O-Ring Thrust Spacer Bearing Cup 3D Thrust Washer Disconnect Rod Gear, Sun Bearing Cup... Page 73 SECTION 3 - CHASSIS & TURNTABLE 1. Hub-Spindle Sub-Assembly 2. Internal Gear A. Cover C. Spring A. Spindle 3. Carrier Sub-Assembly B. Cover Cap D. Spacer A. Carrier Housing B. Seal C. Bolt 8.
Input Gear B. Thrust Washer C. Bearing Cup 9. SECTION 3 - CHASSIS & TURNTABLE Cover Disassembly Assemble Carrier Apply grease to inside of one cluster gear (3F) and line one Remove two bolts (6C) holding disconnect cap (6D) to half of cluster gear with 16 needle rollers (3C). cover (6A). Page 75 SECTION 3 - CHASSIS & TURNTABLE Set
carrier housing (3A) on table, sideways. Insert a Following cluster gear, place one more thrust washer planet shaft (3E), roll pin hole last, into one of the planet shaft (3E) through opposite planet shaft (3E), roll pin hole last, into one of the planet shaft (3E) through opposite planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E) through opposite planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll pin hole last, into one of the planet shaft (3E), roll
Assembly Set cover (6A) on table, exterior side up. Place cover cap (6B) on cover (6A). Align pipe plug hole in cover cap (6B) on cover (6A). Align pipe plug hole in cover cap (6B) on cover (6B) on cover (6B). SECTION 3 - CHASSIS & TURNTABLE With large end down, place disconnect cap (6D) on Apply a light coat of "Never-Seize" to
pipe plug (6H) and cover cap (6B), aligning pipe plug hole in cover (6A). over pipe plug hole in cover cap. Page 78 SECTION 3 - CHASSIS & TURNTABLE Apply a light coat of "Never-Seize" to two pipe plug hole in cover cap. Page 78 SECTION 3 - CHASSIS & TURNTABLE Apply a light coat of "Never-Seize" to two pipe plug hole in cover cap. Page 78 SECTION 3 - CHASSIS & TURNTABLE Apply a light coat of "Never-Seize" to two pipe plug hole in cover cap.
(1G). Oil spindle, then lower hub (1G) small end down, onto spindle (1A). SECTION 3 - CHASSIS & TURNTABLE Main Assembly Place spacer (1H) on spindle (1A) in hub (1G). SHARP EDGES IN COUNTERBORE WHEN REMOVING O-RING. Grease O-ring (5) and place it into
counterbore in hub (1G). Page 80 SECTION 3 - CHASSIS & TURNTABLE Place thrust washer (11) around spindle (1A) so it rests Place other spacer (7D) on smooth end of input shaft (7A). Page 81 SECTION 3 - CHASSIS &
TURNTABLE Place thrust spacer (9) onto input shaft (7). Place carrier sub assembly (3) and ring gear (4) together into mesh with internal gear (2), aligning "X" marked shoulder bolt hole in ring gear (4) over one of the shoulder bolt holes in
cover (6) and hand-tighten. SHARP EDGES IN COUNTERBORE CAN CUT AND CAUSE INJURY WHEN INSTALL- ING O-RING. Set cover (6A) on table, interior side up. Grease O-ring (5) and place in counterbore around edge of cover (6A). Page 83 SECTION 3 - CHASSIS & TURNTABLE Torque shoulder bolts (13) 18 to 25 ft. lbs. (25 to 34 Nm). Roll
test unit in clockwise and counterclockwise direc- Torque bolts (12) 18 to 25 ft. lbs. (25 to 34 Nm). tions. Perform same number of turns in each direction as the ratio of the unit. SECTION 3 - CHASSIS & TURNTABLE Tool List T-140433 ASSEMBLY PRESSING TOOL FOR CUP (1E). The following specialized tools are used to assemble this unit. Tool
diagrams in this manual are intended for the customer who may wish to have a tool made. All tools are one piece and must be made from mild steel. SECTION 3 - CHASSIS & TURNTABLE 3.10 RE-ALIGN TORQUE HUB INPUT COUPLING 3.11 DRIVE MOTOR This procedure applies to torque hubs with integral brakes: Description Equipment
Required Drive motors are low to medium power, two-position axial pis- ton motors incorporating an integral servo piston. They are designed for operation in open and closed circuit applications. SECTION 3 - CHASSIS & TURNTABLE Shaft Seal Replacement Loop Flushing Valve REMOVAL REMOVAL Remove snap ring (1) and support washer (2).
Remove plug (1) and (2) with 11/16 in. internal hex wrench. 1. Snap Ring 2. Support Washer 3. Shaft Seal Figure 3-13. SECTION 3 - CHASSIS & TURNTABLE Troubleshooting Table 3-3. Excessive Noise and/or Vibration Item Description Action Check oil level in reservoir and oil Insufficient hydraulic fluid could lead to cavitation that would cause sys-
Fill reservoir to proper level and ensure oil supply to motor. SECTION 3 - CHASSIS & TURNTABLE Disassembly NOTE: Removal of endcap voids warranty. During assembly, coat all moving parts with a film of clean hydraulic oil. This ensures parts are lubricated during start-up. Replace all O-Rings and gaskets. Lightly
lubricate O-rings with clean petroleum jelly prior to assembly. Page 89 SECTION 3 - CHASSIS & TURNTABLE 22. Screw 25. Valve Plate 27. O-ring 30. Servo Spring 24. O-ring Figure 3-17. End Cap Figure 3-18. Valve Plate & Rear Shaft Bearing Using an 8 mm internal hex wrench, remove endcap
screws (22). Page 90 SECTION 3 - CHASSIS & TURNTABLE 31. Cylinder Kit Assembly Figure 3-19. Cylinder Kit Assembly Figure 
SECTION 3 - CHASSIS & TURNTABLE Lift here 39. Swashplate 40. Servo Piston 41. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-22. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-23. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-23. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 42. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 44. O-ring 43. Journal Bearings Figure 3-24. Swash Plate & Servo Piston 44. Piston Seal 44. O-ring 44. Piston Seal 44. Piston Seal 44. Piston Seal 44.
Inspection Table 3-7. Slipper Foot Thickness & End Play Wash all parts after disassembly (including end-cap and hous- Measurement L Frame K Frame ing) thoroughly with clean solvent and allow to air dry. Blow Slipper Foot Thickness 2.71 4.07... Page 93 SECTION 3 - CHASSIS & TURNTABLE VALVE PLATE Inspect journal bearings for damage or
excessive wear. Replace journal bearings if scratched, warped, or excessively Valve plate condition is critical to motor efficiency. Inspect worn. Polymer wear layer must be smooth and intact. valve plate surfaces for excessive wear, grooves, or scratches. SECTION 3 - CHASSIS & TURNTABLE Assembly Install new O-ring (1) and piston seal (2) to
          piston COMPRESSED SPRING MAY FLY OUT AND CAUSE SERIOUS INJURY. COMPRESS- (3). Install piston seal over O-ring. ING BLOCK SPRING REQUIRES ABOUT 80 TO 90 LBF (350 TO 400 N) OF FORCE. USE A PRESS SUFFICIENT TO MAINTAIN THIS FORCE WITH REASONABLE NOTE: Installing piston seal stretches it, making
difficult to EFFORT. Page 95 SECTION 3 - CHASSIS & TURNTABLE Press front shaft bearing (15) onto shaft (16). Press bear- ing onto shaft with lettering facing out. Lubricate bear- IF REUSING PISTONS, INSTALL THEM IN ORIGINAL BLOCK BORES. ing rollers. Install snap-ring (17) on shaft. Install pistons (11) to slipper retainer (12). Page 96
SECTION 3 - CHASSIS & TURNTABLE Verify swashplate and bearing surface is facing swashplate. Page 97 SECTION 3 - CHASSIS & TURNTABLE Install endcap (25) on
housing with endcap screws (26). Cover shaft splines with an installation sleeve. Install a Check endcap properly seats on housing without interfer- new shaft seal (27) with cup side facing motor. Press seal ence. SECTION 3 - CHASSIS & TURNTABLE Initial Start-Up Procedures Install orifice poppet (30). Follow this procedure when starting up a new
motor or after Install shift spool (31). reinstalling a motor. Install spring retaining washers on springs (32 and 33). Prior to installing motor, inspect for damage incurred during Carefully install centering springs (34, 35, and 36). SECTION 3 - CHASSIS & TURNTABLE 3.12 DRIVE BRAKE Assembly Lightly lubricate the rotary shaft seal (12) and
assemble Refer to Figure 3-35., Drive Brake. it to the housing (2) taking care not to damage the seal Disassembly lip. Apply a ring of Medium Strength Threadlocking Com- Supporting the brake on Face A, remove the socket pound or equivalent adhesive to the outside diameter head capscrews and washers (13 &... Page 100 SECTION 3 - CHASSIS &
TURNTABLE 1. Brake Shaft 2. Housing 3. Inner Friction Plate 4. Pressure Plate 5. Gasket (Not Shown) 6. Outer Plate 7. Gasket 8. Cylinder 9. Piston 10. Ball Bearing 11. Retaining Ring 12. Rotary Shaft Seal 13. Page 101 SECTION 3 - CHASSIS & TURNTABLE 1001165946 B 1. Bolt 4. Washer 7. Swing Motor 2. Bolt 5. Washer 8. Turntable Bearing 3.
Grease Fitting 6. Capscrew Figure 3-36. Swing System 3-43 31215022... SECTION 3 - CHASSIS & TURNTABLE 3.13 SWING BEARING Installation Using an adequate lifting device, place the bearing with the notches in the frame and install the Attach an adequate support sling.
to the boom and draw grease fittings as shown in Figure 3-36., Swing System. Page 103 SECTION 3 - CHASSIS & TURNTABLE Figure 3-37. Swing Bearing Torque Sequence 3-45 31215022... SWING BEARING BOLTS IS A MUST FOR SAFE OPERATION. NOTE: This check is designed to replace the existing bearing bolt torque checks on JLG Lifts in
service. This check must be performed after the first 50 hours of machine operation Figure 3-38. Page 105 SECTION 3 - CHASSIS & TURNTABLE MAIN BOOM UPPER TOWER LINK MEASURING POINT Figure 3-40. Swing Bearing Tolerance Boom Placement - Sheet 1 of 2 3-47 31215022... Page 106 SECTION 3 - CHASSIS &
TURNTABLE 3-48 31215022... Page 107 SECTION 3 - CHASSIS & TURNTABLE 3-49 31215022... SECTION 3 - CHASSIS & TURNTABLE 3-49 31215022... SECTION 3 - CHASSIS & TURNTABLE 3-49 31215022...
SEALING ABILITY. Figure 3-43. Swing Motor - Cutaway 3-50 31215022... Page 109 SECTION 3 - CHASSIS & TURNTABLE Table 3-9. Swing Motor Troubleshooting Trouble Cause Remedy Oil Leakage 1. Hose fittings loose, worn or damaged fittings or "O" Rings. Torque to manufac- turers specifications. 2. Oil seal rings (4)
deteriorated by excess heat. Replace oil seal rings by disassembling unit. SECTION 3 - CHASSIS & TURNTABLE SWING MOTOR Figure 3-44. Swing Motor Removal and Installation Thoroughly clean the area around the swing motor
to prevent any dirt from entering the system. Tag and disconnect the hydraulic lines running to the swing motor. Page 111 SECTION 3 - CHASSIS & TURNTABLE 1001104850 A 1. Bolt 6. Ring 10. Drive Link 14. Thrust Washer 18. Housing 2. End Cover 7. Manifold 11. Coupling Shaft 15. Thrust Bearing 19. Bearing 3. Commutator Seal 8. Rotor Set 12.
Woodruff Key 16. SECTION 3 - CHASSIS & TURNTABLE Preparation Before Disassembly and Inspection • Before you disassembly and Inspection. It provides important infor- (12) pointed down and the vise jaws clamping firmly on
mation on parts and procedures you will need to know to the sides of the housing (18) mounting flange or port... Page 113 SECTION 3 - CHASSIS & TURNTABLE Thoroughly wash end cover for cracks and the bolt head recesses for
good bolt head sealing surfaces. Replace end cover as necessary. Page 114 SECTION 3 - CHASSIS & TURNTABLE Remove commutator, using an air hose to blow air into ing, brinelling or spalling. Replace manifold if any of ring groove
until seal ring is lifted out and discard seal these conditions exist. Page 115 SECTION 3 - CHASSIS & TURNTABLE Remove rotor set (8) and wearplate (9), together to Place rotor set in its assembled form, maintaining degrees apart) and
a roller vane centerline are on the the same rotor vane to stator contact surfaces. Page 116 SECTION 3 - CHASSIS & TURNTABLE Remove thrust bearing (11) from top of coupling shaft Remove coupling shaft learning and seal surfaces.
complement of retained rollers. Page 117 SECTION 3 - CHASSIS & TURNTABLE Remove and discard seal (20). A blind hole bearing or seal puller is Remove thrust bearing (15) and thrust washer (14). required. Page 118 SECTION 3 - CHASSIS &
TURNTABLE NOTE: The depth or location of bearing/bushing (13) in relation to If the housing (18) assembly has passed inspect to this point, inspect the housing wear plate surface and the depth or location and (13) and if they are captured in the housing wear plate surface and the depth or location and (13) and if they are captured in the housing (19) in relation to this point, inspect the housing wear plate surface and the depth or location and (13) and if they are captured in the housing (19) in relation to this point, inspect the housing wear plate surface and the depth or location and (13) and if they are captured in the housing (19) in relation to this point, inspect the housing wear plate surface and the depth or location and (13) and if they are captured in the housing wear plate surface and the depth or location and (13) and if they are captured in the housing (19) in relation to this point, inspect the housing wear plate surface and the depth or location and (13) and if they are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and the depth or location and (19) are captured in the housing wear plate surface and (19) are captured in the housing wear plate surface and (19) are captured in the housing wear plate surface and (19) are captured in the housing wear plate surface and (19) are 
beginning of the two thrust washers (14) and thrust bearing (15). SECTION 3 - CHASSIS & TÜRNTABLE Assembly If the bearing, bushing or thrust washers must be replaced use a suitable size bearing puller to remove bearing/bushings (19) and (13) from housing (18) with Replace all seals and seal rings with new ones each time you out damaging
the housing. Page 120 SECTION 3 - CHASSIS & TURNTABLE NOTE: Bearing mandrel must be pressed against the lettered end Press a new dirt and water seal (20) into the housing (18) of bearing shell. Take care that the housing is
not cocked must be pressed in until its'... Page 121 SECTION 3 - CHASSIS & TURNTABLE Assemble thrust washer (14) then thrust bearing (15) Be sure that a generous amount of clean corrosion resis- that was removed from the motor. tant grease has been applied to the lower (outer) housing bearing/bushing (19). Install the coupling shaft (12) into
housing (18), seating it against the thrust bearing (15). Page 122 SECTION 3 - CHASSIS & TURNTABLE Apply a small amount of clean grease to a new seal ring groove. alignment study onto the housing (18). Apply a small amount of clean grease to a
new seal ring NOTE: One or two alignment studs are light into (4) and assemble it into the seal ring groove on the wear... Page 123 SECTION 3 - CHASSIS & TURNTABLE NOTE: It may be necessary to turn one alignment stud out of the Assemble the manifold (7) over the alignment studs and drive link (10) and onto the rotor set. Be sure
the correct housing (18) temporarily to assemble a new seal ring (3) flat side up, into commuta- tor (5) and assemble a new seal ring (4) into end
cover (2) and assemble end cover over the alignment studs and onto the commutator set. SECTION 3 - CHASSIS & TURNTABLE One Piece Stator Construction Assembled rotor stator and vanes that cannot be readily other bolts are
in place. SECTION 3 - CHASSIS & TURNTABLE Two Piece Stator Construction Assemble into the stator vane pockets. A disassemble into the stator vane pockets in the stator vane pockets in the stator vane pockets. A disassemble into the stator vane pockets in the stator 
TURNTABLE 3.15 GENERATOR Assemble six vanes, or as many vanes that will readily assemble into the stator vane pockets. Grasp the output end of coupling shaft (12) with locking pliers or other appropriate turning device STOP ENGINE BEFORE CARRY OUT SCHEDULE MAINTENANCE. SECTION 3 - CHASSIS & TURNTABLE Overload
Protection Inspecting Brushes, Replacing Brushes, Replacing Brushes and Cleaning Slip Rings, BREAKER, INSPECTING BRUSH POSITION Inspect brush alignment with slip rings, Page 129
SECTION 3 - CHASSIS & TURNTABLE Brush Position On Slip Rings Acceptable Unacceptable Unacceptable Unacceptable Unacceptable Unacceptable Brush Position On Slip Rings Acceptable Unacceptable Unacceptab
parts shown in Figure 3-47. Refer to Figure 3-48. and Figure 3-48. Generator Troubleshooting Circuit Diagram - Sheet 1 of 2 3-74
31215022... Page 132 SECTION 3 - CHASSIS & TURNTABLE Figure 3-49. Generator Troubleshooting Circuit Diagram - Sheet 2 of 2 3-75 31215022... Page 134 SECTION 3 - CHASSIS & TURNTABLE Figure 3-49. Generator Troubleshooting Circuit Diagram - Sheet 2 of 2 3-75 31215022... Page 134 SECTION 3 - CHASSIS & TURNTABLE Figure 3-52
nonconductive electric grease to connectors where factory-applied grease NOTE: Table shows physical lead connections and should be used had been present. with circuit diagram (table replaces wiring diagram). Table 3-10. SECTION 3 - CHASSIS & TURNTABLE 3.16 DEUTZ ENGINE 1001166304 1. Engine 6. Surge Tank 11. Fuel Pre-Filter 2. Gear
Pump 7. Radiator 12. Hydraulic Filter 3. Piston Pump 8. Alternator 13. Exhaust System 4. Pump Coupling 9. Oil Filter 14. Page 139 SECTION 3 - CHASSIS & TURNTABLE 1001166305 1. Gear Pump 5. Engine 8.
Radiator Figure 3-55. Deutz D2011Engine Components - Sheet 1 of 3 3-82 31215022... Page 141 SECTION 3 - CHASSIS & TURNTABLE 1001166305 F 12. Fan 14. Glow Plug Relay 13. Starter Relay 15. Auxiliary Pump Relay Figure 3-56. Deutz D2011Engine Components - Sheet 2 of 3 3-83 31215022... Page 141 SECTION 3 - CHASSIS & TURNTABLE
1001166305 F 16. Air Cleaner 19. ECM 17. Muffler 20. Alternator 18. Exhaust Pipe 21. Air Intake Restriction Indicator Figure 3-57. Deutz D2011Engine Components - Sheet 3 of 3 3-84 31215022... SECTION 3 - CHASSIS & TURNTABLE 3.17 KUBOTA ENGINE 1001210764 1. Engine 5. Engine 7. Engine 7.
Regulator assembly 3. Piston Pump 7. Radiator 11. Forward Solenoid 4. Pump Coupling 8. Coolant Overflow Container 12. Page 143 SECTION 3 - CHASSIS & TURNTABLE 1001210764-H 13. Muffler 16. Air Cleaner 19. Fuel Filter 14. Exhaust Pipe 17. Fuel System Mount 20. Fuel Manifold 15. Fan 18. Fuel Pump 21. Oil Filter Figure 3-59. Kubota
Engine Components - Sheet 2 of 2 3-86 31215022... SECTION 3 - CHASSIS & TURNTABLE 3.18 DEUTZ ENGINE - D2.9L4 Pour in new engine oil. Refer to engine manufacturer's manual for detailed oper- ating and maintenance instructions. Limited engine main- tenance
items are presented here for convenience but detailed engine maintenance items and schedule are included in the engine manufacturer's manual. SECTION 3 - CHASSIS & TURNTABLE Catch any escaping oil. Clean any dirt from filter carrier sealing surface. FUEL IS FLAMMABLE AND CAN CAUSE DEATH OR SERIOUS INJURY. MAKE SURE NO
OPEN FLAMES OR SPARKS ARE IN THE AREA WHEN WORKING ON FUEL Lightly coat new oil filter rubber gasket with clean oil. SECTION 3 - CHASSIS & TURNTABLE 3.19 DEUTZ ENGINE - D2011 NOTE: Refer to engine manufacturer's manual for detailed oper- 0,1,080 2,/ ating and maintenance instructions. Limited engine main- /(9(/ tenance
items are presented here for convenience but detailed engine maintenance items and schedule are included in the engine manufacturer's manual. SECTION 3 - CHASSIS & TURNTABLE Replacing Engine Oil Viscosity for the Allow the engine to warm up. The
engine oil should proper grade. SECTION 3 - CHASSIS & TURNTABLE Using a suitable oil filter removal tool, loosen lube oil filter cartridge and make sure there are no leaks. JLG Boom Lift 450A 450AJ Operation, Service & Parts
Manuals Size: 476 MB Format: PDF Language: English Brand: JLG Type of machine: Telescopic Boom Lift, JLG 450A Telescopic Boom Lift Contents: JLG Boom Lift 450A AJ Operation Manual 3121658 (12/2018) JLG Boom Lift
450A AJ Operation Manual 31215021 (02/2020) JLG Boom Lift 450A AJ Operation Manual 31215022 (04/2020) JLG Boom Lift 450A AJ Operation Manual 3120748 (04/2002) JLG Boom Lift 450A AJ Operation Manual 3120749
(11/2000) JLG Boom Lift 450A AJ Service Manual 3120869 (02/2000) JLG Boom Lift 450A AJ Parts Manual 3120870 (06/2018) JLG Boom Lift 450A AJ Parts Manual 31215023 (02/2020) This is the COMPLETE Service Repair Manual for
the JLG 450A, 450AJ Series II Boom Lifts. It contains deep information about maintaining, assembly, disassembly and servicing your JLG 450A, 450AJ Series II Boom Lifts. Serial Number: Prior To S/N 0300160835 This Manual contains information and data to this model. has specs, diagrams, and actual real photo illustrations, and schemes, which give
you complete step by step operations on repair, Diagnosing, servicing, technical maintenance & troubleshooting procedures for your machine. this manual will enable you to find trouble and to understand how to repair and maintain your machine without going
into service. YOU CAN DO THE REPAIRS YOURSELF AND SAVE MONEY $$$ SERVICE REPAIR MANUAL CONTAINS: ====== SECTION 1 - SPECIFICATIONS SECTION 2 - GENERAL SECTION 3 - CHASSIS & TURNTABLE SECTION 4 - BOOM & PLATFORM
SECTION 5 - HYDRAULICS SECTION 6 - JLG CONTROL SYSTEM SECTION 7 - BASIC ELECTRICAL INFORMATION & SCHEMATICS Download Complete Service Repair Manual for JLG 450A, 450AJ Boom Lifts. The information on this Factory Service Repair Manual for JLG 450A, 450AJ Boom Lifts.
manual covered everything you need to know when you want to repair or service JLG 450A, 450AJ Boom Lifts . Models Covered: JLG Boom Lifts 450A,450AJ ANSI This manual is INSTANT DOWNLOAD. It means no shipping cost or waiting for getting a CD package for several days. you will receive this manual today via instant download on completion
of payment via our secure payment processor. Manual Contents: SECTION 1 SPECIFICATIONS SECTION 2 PROCEDURES SECTION 3 TROUBLESHOOTING Service and Maintenance Manual Model 450A Series II 450AJ Series II 450A
following Serial Numbers: 0300159794, 0300159795, 0300160088, and 0300160456. Page 3 INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG Lift - A-1 SECTION A. INTRODUCTION 3121290 - JLG LIFT - A-1 SECTION A. INTRODUCTION 3121290 - JLG LIFT - A-1 SECTION A. I
utmost importance that maintenance personnel pay strict attention to these warnings and precautions to avoid possible injury to themselves or others, or damage to the equipment. A maintenance program must be followed to ensure that the machine is safe to operate. MODIFICATION OF AN AERIAL WORK PLATFORM SHALL BE
MADE ONLY WITH WRITTEN PERMISSION FROM THE MANUFACTURER. The specific precautions are, for the most part, those that apply when servic-ing hydraulic and larger machine component parts. Your safety, and that of others, is the
first consideration when engaging in the maintenance of equipment. Always be con-scious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided. SINCE THE MACHINE
MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA RESPONSIBIL-ITY OF THE OWNER/OPERATOR. B HYDRAULIC SYSTEM SAFETY It should be noted that the machines hydraulic systems oper-ate at extremely high potentially dangerous pressures. Every effort should be
made to relieve any system pressure prior to disconnecting or removing any portion of the system. C MAINTENANCE FAILURE TO COMPLY WITH SAFETY PRECAUTIONS LISTED IN THIS SECTION COULD RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION. • ENSURE REPLACEMENT PARTS OR
COMPONENTS ARE IDENTICAL OR EQUIVALENT TO ORIGINAL PARTS OR COMPONENTS. • NO SMOKING IS MANDATORY. NEVER REFUEL DURING ELEC-TRICAL STORMS. ENSURE THAT FUEL CAP IS CLOSED AND SECURE AT ALL OTHER TIMES. • REMOVE ALL RINGS, WATCHES AND JEWELRY WHEN PER-FORMING ANY
MAINTENANCE. • DO NOT WEAR LONG HAIR UNRESTRAINED, OR LOOSE-FIT- TING CLOTHING AND NECKTIES WHICH ARE APT TO BECOME CAUGHT ON OR ENTANGLED IN EQUIPMENT. • OBSERVE AND OBEY ALL WARNINGS AND CAUTIONS ON MACHINE AND IN SERVICE MANUAL. • KEEP OIL, GREASE, WATER, ETC. WIPED
FROM STANDING SURFACES AND HAND HOLDS. • USE CAUTION WHEN CHECKING A HOT, PRESSURIZED COOL- ANT SYSTEM. • NEVER WORK UNDER AN ELEVATED BOOM UNTIL BOOM HAS BEEN ENGAGED.
BEFORE MAKING ADJUSTMENTS, LUBRICATING OR PER- FORMING ANY OTHER MAINTENANCE, SHUT OFF ALL POWER CONTROLS. • BATTERY SHOULD ALWAYS BE DISCONNECTEDDURING REPLACEMENT OF ELECTRICAL COMPONENTS.
• USE ONLY APPROVED, NONFLAMMABLE CLEANING SOL-VENTS. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93
94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175
176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 268 277 288 299 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 277 288 299 210 211 212 213 214 215 216 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 219 210 217 218 218 219 210
256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335
336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 389 390 391 392 393 394 395 396 View larger image Show full description Hide full description
```