An Oshkosh Corporation Company

Service and Maintenance Manual

Models
X17JP - X500AJ
X20JP - X600AJ
X26JP - X770AJ

3121623

June 29, 2018 - Rev E

ANSI

An Oshkosh Corporation Company

MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Boom Service Manual | Publication 3121623

Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

SUBJECT - SECTION, PARAGRAPH **PAGE NO.**

INTRODUCTION - MAINTENANCE SAFETY PRECAUTIONS ..... A
GENERAL ..... A
HYDRAULIC SYSTEM SAFETY ..... A
MAINTENANCE ..... A

SECTION 1 - SPECIFICATIONS

1.1 CAPACITIES 1-1
1.2 TRACK SPECIFICATIONS 1-2
1.3 POWER SOURCE 1-3
Honda Engine iGX390 Specifications 1-4
Honda Engine iGX440 Specifications 1-4
Hatz Engine 1B40 Specifications 1-5
Perkins Engine 402D Specifications 1-5
Kubota Engine D902-E3B Specifications 1-6
1.4 SPECIFICATIONS AND PERFORMANCE DATA 1-7
Reach Specifications 1-7
Dimensional Data 1-7
Function Speed Data 1-8
Machine Orientation When Performing Speed Tests 1-8
1.5 HYDRAULIC PRESSURE SETTINGS - PSI (BAR) 1-9
1.6 MAJOR COMPONENT WEIGHTS 1-9
1.7 LUBRICATION 1-10
Hydraulic Oil 1-10
1.8 SERIAL NUMBER LOCATION 1-11
1.9 FASTENER TORQUE CHARTS 1-12

SECTION 2 - GENERAL

2.1 MACHINE PREPARATION, INSPECTION, AND MAINTENANCE 2-1
General 2-1
Preparation, Inspection, and Maintenance 2-1
Pre-Start Inspection 2-1
Pre-Delivery Inspection and Frequent Inspection 2-1
Annual Machine Inspection 2-1
Preventative Maintenance 2-1
2.2 SERVICE AND GUIDELINES 2-2
General 2-2
Safety and Workmanship 2-2
Cleanliness 2-2
Components Removal and Installation 2-2
Component Disassembly and Reassembly 2-2
Pressure-Fit Parts 2-2
Bearings 2-3
Gaskets 2-3
Bolt Usage and Torque Application 2-3
Hydraulic Lines and Electrical Wiring 2-3
Hydraulic System 2-3
Lubrication 2-3
Battery 2-3
Lubrication and Servicing 2-3
2.3 LUBRICATION AND INFORMATION 2-3
Hydraulic System 2-3
Hydraulic Oil 2-4

MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

Changing Hydraulic Oil 2-4
Lubrication Specifications 2-4
2.4 CYLINDER DRIFT TEST 2-4
Cylinder Drift 2-4
2.5 PINS AND COMPOSITE BEARING REPAIR GUIDELINES 2-5
2.6 WELDING ON JLG EQUIPMENT 2-5
Do the Following When Welding on JLG Equipment 2-5
Do NOT Do the Following When Welding on JLG Equipment 2-5

SECTION 3 - CHASSIS & TURNTABLE

3.1 RUBBER TRACK MAINTENANCE 3-1
Checking Track Tension 3-1
Operations For Loosening/tightening The Track 3-1
Checking The Rubber Tracks 3-2
Replacing The Rubber Tracks 3-3
Installing The Rubber Track 3-3
Checking tightness of nuts and bolts 3-4
3.2 UNDERCARRIGE COMPONENTS 3-4
Replacement roller lower wheel and tracks adjuster 3-4
Disassembly 3-4
Assembly 3-4
Replacement sprocket and Gear Motor 3-5
Sprocket remove 3-5
Gear motor remove 3-5
Gear motor installation 3-5
Sprocket installation 3-5
3.3 AXLE EXTENSION REMOVAL 3-6
3.4 FINAL DRIVE 3-7
Product Identification 3-7
3.5 SWING DRIVE (IMO) 3-8
Technical Data – Type Plate 3-8
Structure and function 3-8
Transporting Unpacked Slew Drives 3-9
Positioning The Swing Drive 3-9
Bolting The Slew Drive 3-10
Maintenance Schedule 3-11
Lubrication 3-11
Maintenance Tasks 3-12
Lubricating The Slew Drive 3-13
Inspecting The Seals 3-13
3.6 HONDA ENGINE IGX440 3-14
Serial Number Location 3-14
Specifications 3-15
Wiring Diagrams 3-16
Engines & Controls Adjustments And Troubleshooting 3-17
Engine Harness By-Pass 3-18
Fuel System Check 3-19
Fuel Tank Inspection 3-20
Spark Test 3-21
Replacement Of Engine ECU 3-22
3.7 HATZ ENGINE 3-23
Model: HATZ 1B40 3-23
Description Of The Engine 3-24
Technical data 3-25
Engine Type Plate 3-26
Operation 3-27
Troubleshooting 3-28

MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

3.8 PERKINS ENGINE 3-30
Model: 402D 3-30
Specifications 3-30
Engine Identification 3-30
Fuel Filter Base - Remove and Install 3-31
Troubleshooting 3-32
3.9 KUBOTA DIESEL ENGINE MODEL D902 3-34
Engine Plate 3-35
Troubleshooting 3-37
Engine Speed Sensor 3-38
Speed Sensor Installation and Adjustment 3-38
Diesel Engine RPM control 3-39
All Diesel Actuator Rod Travel Adjustment 3-39
3.10 THERMIC ENGINE REPLACEMENT 3-40
3.11 ELECTRIC MOTOR REPLACEMENT 3-41

SECTION 4 - BOOM & PLATFORM

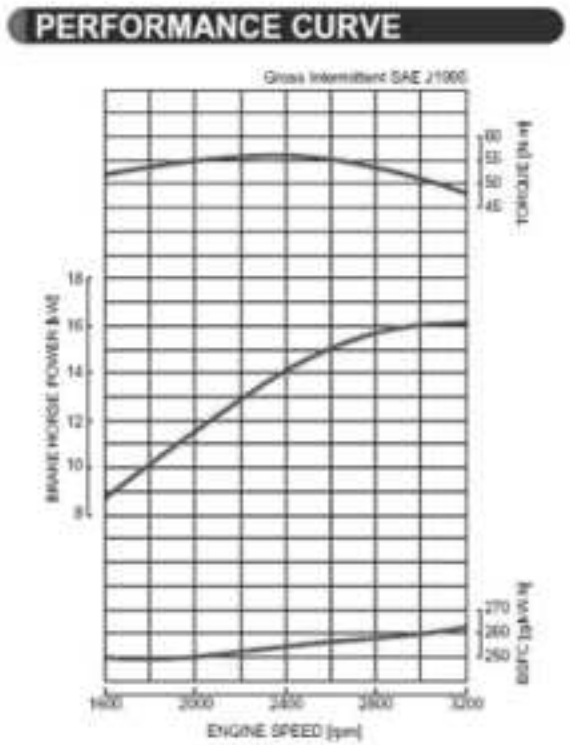
4.1 BOOM MAINTENANCE 4-1
Removal of the Boom Assembly 4-1
Disassembly of the Main Boom 4-1
Inspection 4-3
Assembly of the Main Boom 4-3
Installation of the Boom Assembly 4-4
4.2 BOOM DISASSEMBLY X20JP - X600AJ 4-5
4.3 INSPECTION 4-8
Checking Wear And Deformation Of Ropes And Pulleys 4-8
Assembly 4-9
Installation To Machine 4-10
Three month inspection 4-11
4.4 WIRE ROPE TENSION ADJUSTMENT PROCEDURE 4-11
4.5 ROTARY ACTUATOR 4-13
ARP Series 4-13
Technical Data 4-13
Disassembly 4-16
Assembly 4-18
Installing Counterbalance Valve 4-19
4.6 BOOM ROTATION SENSOR ASSEMBLY - X23JP - X700AJ 4-20
4.7 PROXIMITY SENSOR ADJUSTMENT (X17JP-X500AJ – X20JP-X600AJ) 4-22
4.8 PLATFORM REMOVAL/INSTALLATION 4-23
Platform Installation 4-23
4.9 LOAD CELL AND FOOTSWITCH REMOVAL/INSTALLATION 4-24
Removing Load Cell 4-24
Installing Load Cell 4-24
Removing Footswitch 4-24
Installing Footswitch 4-24
4.10 SKYGUARD INSTALLATION - ONE PERSON PLATFORM 4-25
Procedure: 4-25
Installation: 4-26
Skyguard Anti-Trapping System 4-29
4.11 SKYGUARD INSTALLATION - 2 PERSON PLATFORM 4-31
Procedure: 4-31
Installation: 4-32
Skyguard Anti-Trapping System 4-35

MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

3.9 KUBOTA DIESEL ENGINE MODEL D902







Type	Vertical 4-Cycle Liquid Cooled Diesel
Combustion System	IDI
Intake System	Naturally Aspirated
Diesel fuel intake system	Electric Pump
Number of cylinders	3
Power	16,1 Kw (21,6 Hp) / 3200 rpm
Max rpm	3200 rpm
Direction of rotation	Counter clockwise Viewed on Flywheel
Max torque	56 Nm / 2400 rpm
Displacement	898 cm^3
Bore	72 mm (2,83 in)
Stroke	73,6 mm (2,9 in)
Fuel tank capacity	40 litres
Emission Regulation	Tier 4 F
Dry Weight (according to Kubota's standards)	72 Kg (158,8 Lbs)

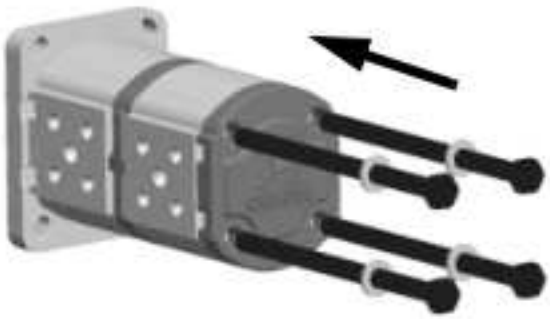
MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

6. Remove the CASAPPA tool pn 06100090.



Final Assembly And Check

1. Put the pump in the vice and tighten the bolts with a torque wrench. Tightening torque 30 Nm.

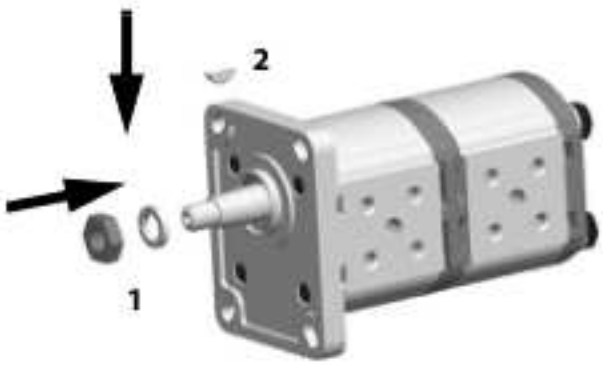


NOTICE

WITH A CLAMP VERIFY THAT THE SHAFT OF THE PUMP CAN ROTATE AFTER THE OPERATION IN BOTH DIRECTIONS. THE SHAFT MUST EASILY ROTATE. IF THE SHAFT IS LOCKED THIS MEANS THAT SOME OF THE SEALS HAVE COME OUT OF THEIR SEATS DURING ASSEMBLY. IF THIS HAPPENS THE WHOLE OPERATION MUST BE DONE AGAIN AND THE DAMAGED SEALS REPLACED.



2. Put back the shaft key (2). Insert the washer and tighten the nut (1). Tightening torque 10 Nm.



MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

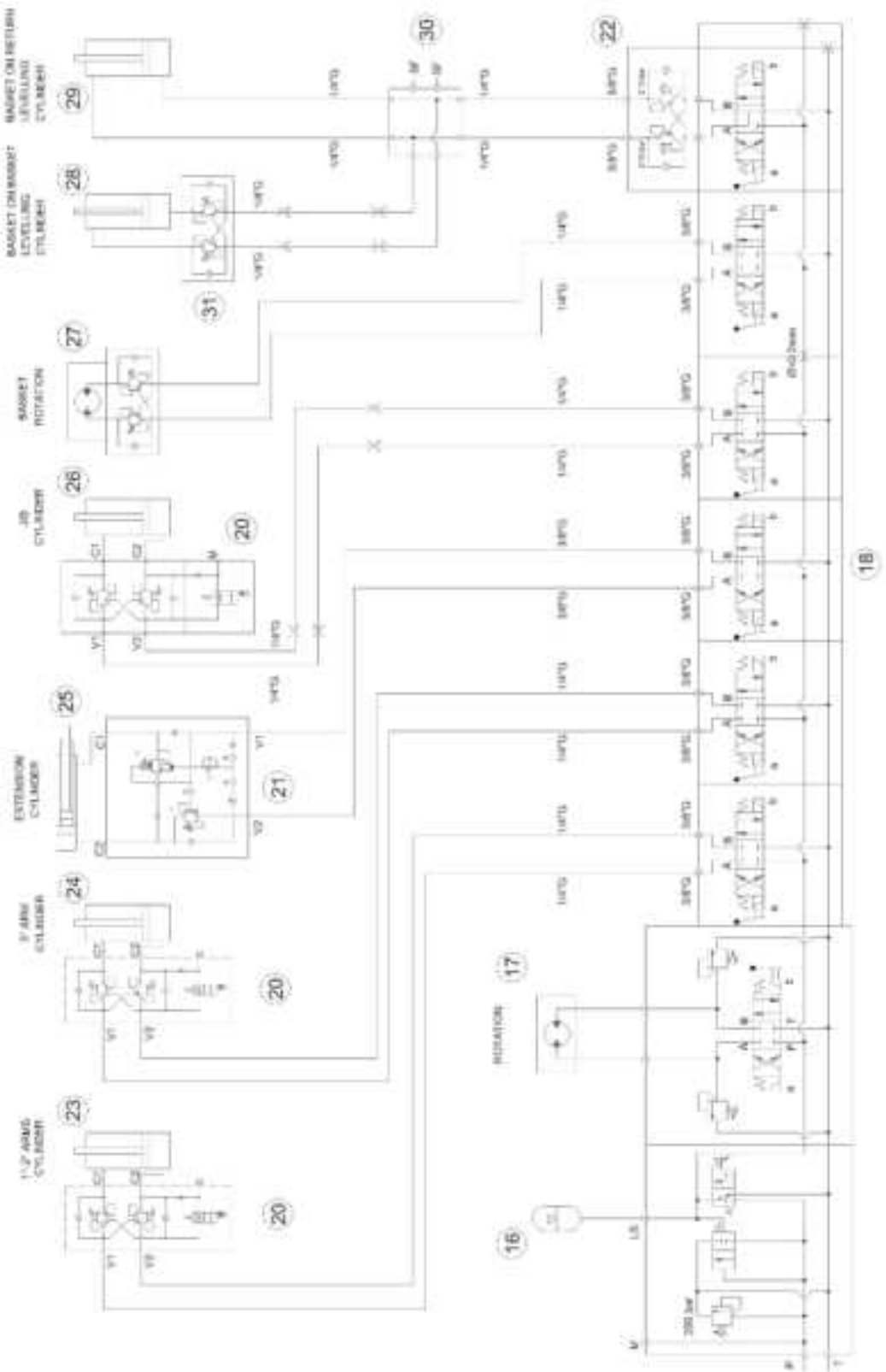


Figure 7-6. X17JP/X500AJ - X20JP/X600AJ - Hydraulic Schematic - 2 of 3

MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

1.8 SERIAL NUMBER LOCATION

A serial number plate is affixed on to the frame a frame. The following illustration showing the position.



Figure 1-2. Serial Number Plate



Figure 1-3. X26JP / X770AJ Serial Number Plate Location
(on side of chassis rear compartment cover)

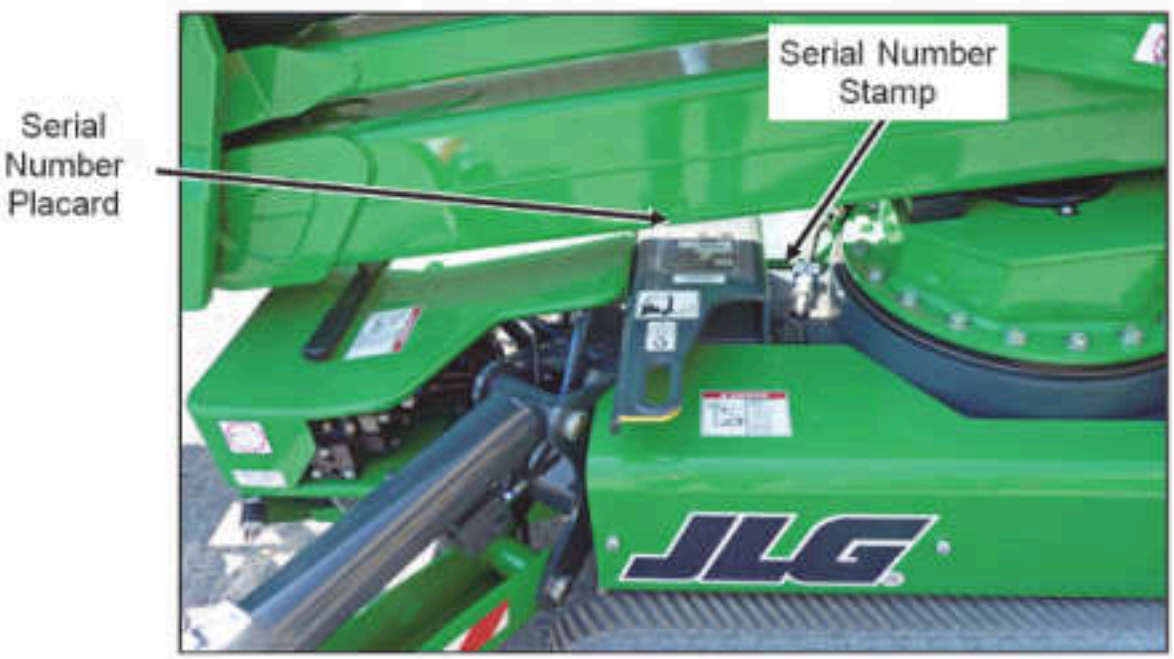


Figure 1-4. X17JP/X20JP - X500AJ/X600AJ - Serial Number Plate Location

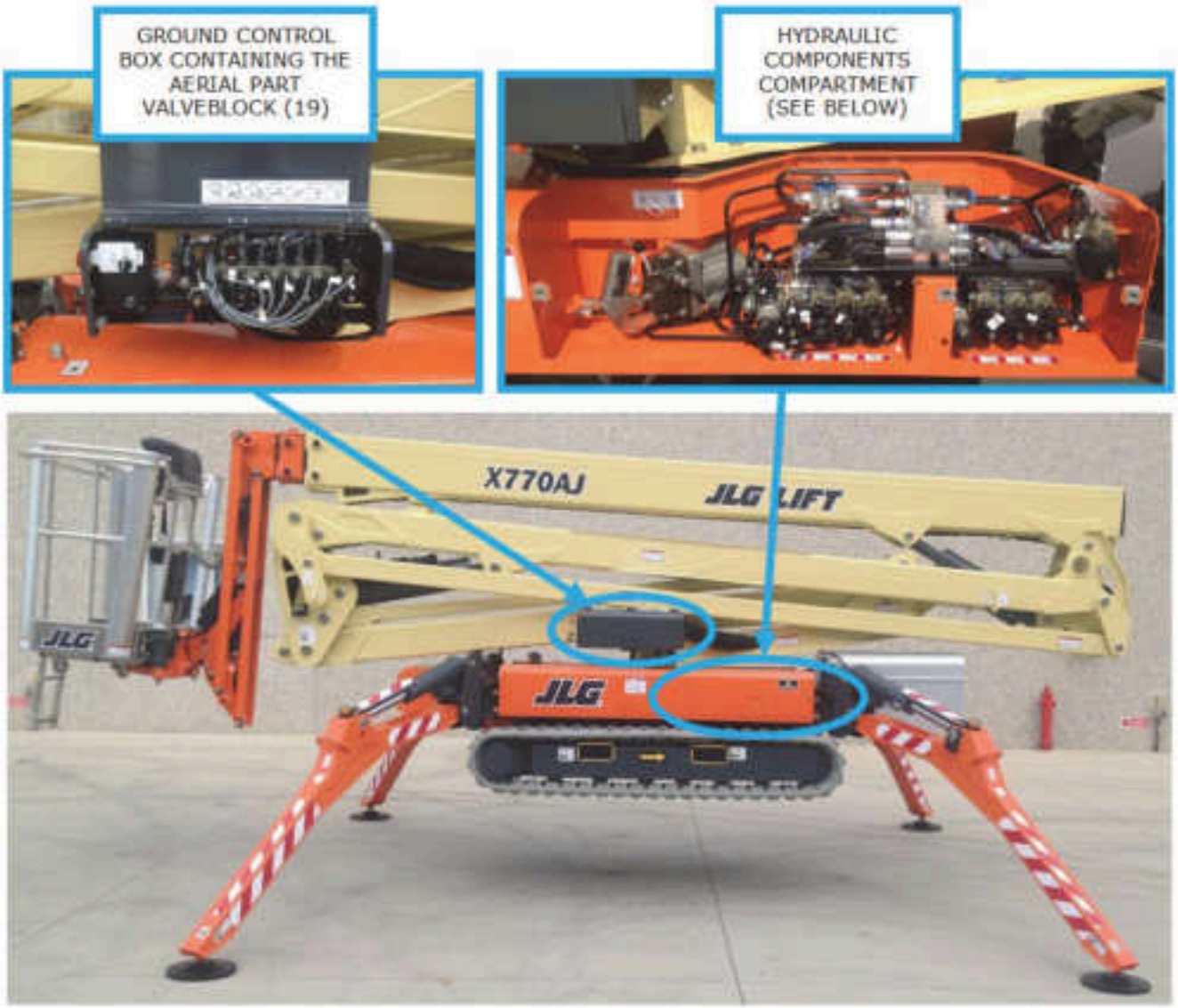
MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >

X26JP-X770AJ

The ground control box located on the right side of the machine contains the aerial part valveblock.

The hydraulic components compartment on the right side inside the bonnet contains the ground valveblocks, the hydraulic manifold, the deviator valve, the double pump valve and the hand pump.

Together with hydraulic components is indicated in brackets the relevant number on hydraulic diagram.



MidWestTech | JLG X17JP, X20JP, X26JP, X500AJ, X600AJ, X770AJ Compact Crawler Bo... Order the manual at mid-west-tech.com >