



Service and Maintenance Manual

Model

VM 3242E

VM 2642E

P/N - 31210043

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SECTION A. INTRODUCTION - MAINTENANCE SAFETY PRECAUTIONS

A GENERAL

This section contains the general safety precautions which must be observed during maintenance of the aerial platform. It is of 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.

⚠ WARNING

MODIFICATION OF THE MACHINE WITHOUT CERTIFICATION BY A RESPONSIBLE AUTHORITY THAT THE MACHINE IS AT LEAST AS SAFE AS ORIGINALLY MANUFACTURED, IS A SAFETY VIOLATION.

The specific precautions to be observed during maintenance are inserted at the appropriate point in the manual. These precautions are, for the most part, those that apply when servicing 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 conscious 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.

⚠ WARNING

SINCE THE MACHINE MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA IS THE RESPONSIBILITY OF THE OWNER/OPERATOR.

B HYDRAULIC SYSTEM SAFETY

It should be noted that the machines hydraulic systems operate 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.

Relieve system pressure by cycling the applicable control several times, to direct any line pressure back into the reservoir. Pressure feed lines to system components can then be disconnected with minimal fluid loss.

C MAINTENANCE

⚠ WARNING

FAILURE TO COMPLY WITH SAFETY PRECAUTIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

- REMOVE ALL RINGS, WATCHES AND JEWELRY WHEN PERFORMING ANY MAINTENANCE.
- DO NOT WEAR LONG HAIR UNRESTRAINED, OR LOOSE-FITTING 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.
- NEVER WORK UNDER AN ELEVATED STRUCTURE UNTIL STRUCTURE HAS BEEN SAFELY RESTRAINED FROM ANY MOVEMENT BY BLOCKING OR OVERHEAD SLING.
- BEFORE MAKING ADJUSTMENTS, LUBRICATING OR PERFORMING ANY OTHER MAINTENANCE, SHUT OFF ALL POWER CONTROLS.
- BATTERY SHOULD ALWAYS BE DISCONNECTED DURING REPLACEMENT OF ELECTRICAL COMPONENTS.
- KEEP ALL SUPPORT EQUIPMENT AND ATTACHMENTS STOWED IN THEIR PROPER PLACE.
- USE ONLY APPROVED, NONFLAMMABLE CLEANING SOLVENTS.

REVISION LOG

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SECTION 1. SPECIFICATIONS

1.1 CAPACITIES

Hydraulic Oil Tank - Main

5.8 gallons (22 liters)

Hydraulic System

Approximately 8 gallons (30 liters)

Hydraulic Oil Tank - Steering Unit

0.25 gallon (1 liter)

Hydraulic System - Steering

Approximately 0.4 gallon (1.5 liter)

1.2 COMPONENT DATA

Battery - Battery Charger

Battery : 3 battery packs of 8 volts, 560 ampHour (5 hour rate) (each pack is composed of 4 two volts cells).

Charger : Input, 110-220 VAC, 50-60 Hz - Output, 24 VDC (65 Amps)

NOTE: *Refer to the appropriate section in this manual for further information.

Main Hydraulic Pump / Electric Motor Assembly

Motor - 24 VDC, 3 kW.

Pump - 0.49 cu.in/rev (8 cm³/t)

Pump Output, 3.1 gpm (12 l/mn) at 2000 psi (138 bar)

Steering Hydraulic Pump / Electric Motor Assembly

Motor - 24 VDC, 0.8 kW

Pump - 0.03 cu.in/rev (0.5 cm³/t)

1.3 PERFORMANCE DATA

Travel speed (Forward and Reverse)

High drive - 2.3 m.p.h. (3.8 km/h) [28-32 sec / 100 ft]
Drive w / mast raised - 0.4 m.p.h. (0.7 km/h) [35-38 sec / 50 ft]

Gradeability

20%.

Turning Radius

Inside - 0 ft (0 m)

Outside - 5.8 ft (1.75 m)

Mast Speed

Lift up - 24-27 seconds

Lift down - 20-29 seconds

Jib Speed

Lift up : 10-16 seconds

Lift down : 15-24 seconds

Turntable Swing Speed (Left and Right)

From rest to rest : 50-65 seconds

Machine Weight

7720 lbs (3500 kg)

Ground Bearing pressure

200 PSI (14 kg/cm²)

Machine Height (Stowed)

6.5 ft (1.99m)

Machine Length (Stowed)

10.5 ft (3.20m)

Machine Width

42 in (1.06 m)

Wheel base

4.26 ft (1.30 m)

Up and Over Platform Height

22 ft (6.70 m)

Horizontal Reach Up and Over

9.5 ft (2.90 m)

Max. Platform Height

26.6 ft (8.10 m)

1.4 TORQUE CHART

		Torque values for bolts, nuts and studs														
Grade	Tensile strength Mpa / Psi	Unit	M4 x70	M5 x80	M6 x100	M8 x125	M10 x150	M12 x175	M14 x200	M16 x200	M18 x250	M20 x250	M22 x250	M24 x300	M27 x300	M30 x350
8.8	785	N.m	2.7	5.2	9.1	22	44	76	121	189	261	370	509	637	944	1280
	113854	lbf ft	2	3.8	6.7	16.2	32.5	56	89.2	139	192	272	375	469	696	944
10.9	981	N.m	3.9	7.7	13.4	32	64	111	178	278	384	544	748	936	1386	1880
	142281	lbf ft	2.9	5.7	9.9	23.6	47.2	81.9	131	205	283	408	551	690	1022	1386*
12.9	1177	N.m	4.6	9	15.7	38	75	130	209	325	449	637	875	1095	1622	2200
	170709	lbf ft	3.4	6.6	11.6	28	55.3	95.9	154	239	331	469	645	807	1196	1622

Torque values for fittings					
JIC	Nm / lb ft	BSPP	N. m / lbf ft	Metric	N. m / lbf ft
JIC 7/16	15	BSPP 1/4	14.8	M14x150	38
	11.1		10.9		28
JIC 9/16	30	BSPP 3/8	34	M18x150	51
	22.1		25.1		37.6
JIC 3/4	50	BSPP 1/2	60		
	36.9		44.3		
JIC 7/8	69	BSPP 3/4	115		
	50.9		84.8		

1.5 LUBRICATION

General



EXERCISE EXTREME CARE AROUND PRESSURIZED HYDRAULIC SYSTEMS WHILE IN OPERATION OR UNTIL ALL PRESSURE IS RELEASED.



HIGH PRESSURE OIL COULD PENETRATE SKIN AND CAUSE INJURIES OR BURNS. LOOSEN FITTINGS OR COMPONENTS SLOWLY TO ALLOW OIL PRESSURE TO DROP GRADUALLY.

When servicing the hydraulic system, use a container to collect the oil from hydraulic lines or components and prevent it from spilling on the work platform or on the ground.

NOTE: Used oils and filter cartridges must be disposed of according to regulation in force.

Contaminants in the hydraulic system will affect operation and will result in serious damage to components working parts. Every precaution must be taken to keep hydraulic oil clean, including reserve oil in storage. If the oil must be poured from the original container into another, be sure to clean all contaminants from the service container.

Before disconnecting a hydraulic line or removing a component, clean fittings and adjacent area. As soon as a hydraulic line is disconnected or a component removed, plug, cap or cover all openings to prevent entry of foreign matter.

Disassemble and reassemble parts on clean work surface. Hydraulic system filters should be replaced at the specified intervals. Examine filter cartridges for evidence

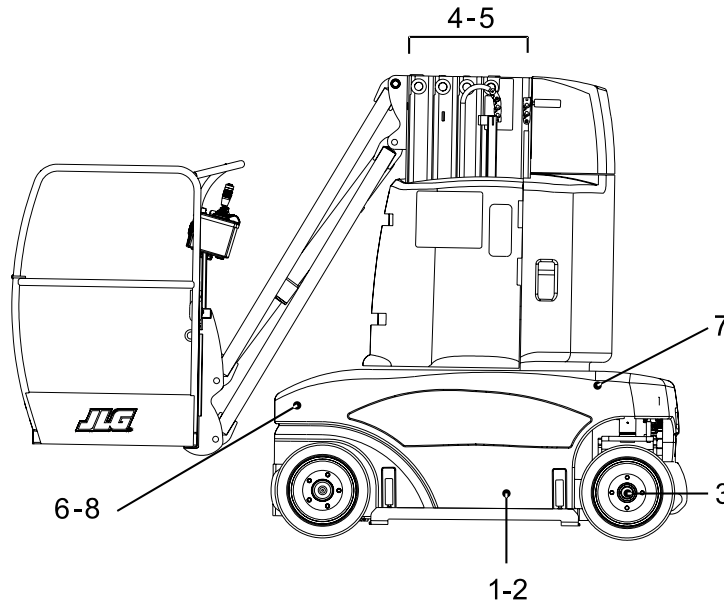
of metal or rubber particles. If evidence of metal or rubber particles are found, drain and flush the entire system.

Recommended hydraulic oil

	NERVOL VERVOFLUID VG32	MOBIL DTE 13M
ISO VG VISCOSITY GRADE	32	32
Cinematic Viscosity at -4°F (-20°C)	1213 mm ² /s (cSt)	1250 mm ² /s (cSt)
Cinematic Viscosity at 32°F (0°C)	254 mm ² /s (cSt)	250 mm ² /s (cSt)
Cinematic Viscosity at 104°F (+40°C)	34 mm ² /s (cSt)	33,3 mm ² /s (cSt)
Pour point, max	-42°F (-41°C)	-51°F (-46°C)
Flash point, min	437°F (225°C)	331°F (166°C)
Viscosity index	148	144
ISO 6743-4 Classification	HV	HV

NOTE: Aside from JLG recommendations, it is not advisable to mix oils from different brands or types, as they may not contain the same required additives or be of comparable viscosities. If use of hydraulic oil other than those recommended, contact JLG Industries for proper recommendations.

Lubrication Chart



Component	Number / Type Lube points	Lube	Interval Hours			Comments	
			125	250	1000		
1	Swing Bearing Race	1 grease fitting	B		X		
2	Swing Bearing Teeth	By brush	C			X	Need swing gear box assembly removal
3	Wheel Hub Bearing	2 grease fittings	B		X		
4	Mast Profiles	By brush	B	X			Remove old grease first
5	Lifting Chains	Spray on or by brush	D	X			Lubricate before first 50 hours
6	Hydraulic Oil	Fill through return filter cap	A			X	Check level daily. Change at least every 2 years
7	Hydraulic Pressure Filter	N/A	N/A		X		Change after first 50 hours
8	Hydraulic Return Filter	N/A	N/A		X		Change after first 50 hours

Table 1-1. Lubrication Chart

NOTE: Lubrication intervals are based on machine operation under normal condition. For machines used in multi shift operations and/or exposed to hostile environments or conditions, lubrication frequencies must be increased accordingly.

(*) to be adapted to the machine's working conditions. Refer to the corresponding section in this manual.

NOTE: Refer to the corresponding sections in this manual for specific lubrication procedures.

Lube Specifications

Table 1-2. Lube Specifications

Lube	Specifications	
A	Hydraulic Oil	Nervol NERVOFLUID VG32 Mobil DTE 13M
B	Extreme Pressure - Multi Purpose Grease	Mobil MOBILUX EP2 Mobil COMPLEX EP2
C	Open Gear Lube	Mobil MOBILTAC 81
D	Non Detergent Mineral Oil*	Mobil DTE 16M

SECTION 1 - SPECIFICATIONS

1.6 MAJOR COMPONENTS WEIGHT**⚠ WARNING**

SELECT LIFTING EQUIPMENT WITH CAPACITY CAPABLE OF SAFELY SUPPORTING WEIGHT.

Table 1-3. Major Component Weight

COMPONENT	lbs	kg
Platform & Support (*)	154	70
Jib Assembly w/Cylinder	174	79
Jib Cylinder	66	30
Mast Assembly (4 mast sections)	860	390
Mast Cylinder	99	45
Mast Section #1 Assembly	595	270
Chassis Assembly	1565	710
Steering Knuckle (each)	68	31
Drive Motor (each)	70	32
Counterweight	2800	1270
Wheel (*)	55	25
560 Ah Battery pack (each) (*)	437	198

NOTE: (*) Items critical to stability.

⚠ WARNING

DO NOT REPLACE ITEMS CRITICAL TO STABILITY WITH ITEMS OF DIFFERENT WEIGHT OR SPECIFICATION. DO NOT MODIFY UNIT IN ANY WAY TO AFFECT STABILITY.

1.7 SERIAL NUMBER LOCATIONS

For machines identification, a serial number plate is affixed to the platform. If the serial number plate is damaged or missing, the machine serial number is stamped on the front beam of the frame.