An Oshkosh Corporation Company

Service & Maintenance Manual

Model(s) 15/20MVL & 15/20MSP Series

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SECTION 1. MACHINE SPECIFICATIONS



Table 1-1. General Machine Specifications

	15MVL	20MVL	15MSP	20MSP
Maximum Occupants:	1			
Maximum Work Load (Capacity): *(MVL-Std. Platform / MSP - Stockpicker Platform)*	500 lb. (230 kg)	350 lb. (160 kg)	500 lb. (230 kg)	400 lb. (180 kg)
Maximum Travel Grade (Gradeability): *(Platform STOWED ONLY)*	20% (11.5°)			
Maximum Travel Grade (Side Slope): *(Platform STOWED ONLY)*	5°			
Maximum Vertical Platform Height:	15 ft. 2 in. (4.69 m)	19 ft. 1 in. (5.80 m)	15 ft. 1 in. (1) (4.66 m)	19 ft. 6 in. (5.96 m)
Maximum Drive Speeds *(Operator Variable)*:	0.5 - 3.4 mph (0.8 - 5.5 kph)			
Max. Platform Speeds *(w/Max. Load)*: Platform Up:	20 sec.	22.5 sec.	20 sec.	22.5 sec.
Platform Down:	15 - 21 sec.	21 - 26 sec.	15 - 21 sec.	21 - 26 sec.
Gross Machine Weight *(Platform Empty)*:	2,235 lb. (955 kg)	2,235 lb. (965 kg)	2,280 lb. (975 kg)	2,280 lb. (975kg)

NOTE: ***(1)*** *Standard unless equipped with 14 ft. limiter circuit.*

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SECTION 6. TROUBLESHOOTING

6.1 GENERAL

This section contains troubleshooting information to be used for locating and correcting most operating problems. If a problem should develop which is not presented in this section or which is not corrected by listed corrective actions, technically qualified guidance should be obtained before proceeding with any maintenance.

NOTICE

IT IS A GOOD PRACTICE TO AVOID PRESSURE-WASHING ELECTRICAL/ELECTRONIC COMPONENTS. SHOULD PRESSURE-WASHING BE UTILIZED TO WASH AREAS CONTAINING ELECTRICAL/ELECTRONIC COMPONENTS, JLG INDUSTRIES, INC. RECOMMENDS A MAXIMUM PRESSURE OF 750 PSI (52 BAR) AT A MINIMUM DISTANCE OF 12 INCHES (30.5 CM) AWAY FROM THESE COMPONENTS. IF ELECTRICAL/ELECTRONIC COMPONENTS ARE SPRAYED, SPRAYING MUST NOT BE DIRECT AND BE FOR BRIEF TIME PERIODS TO AVOID HEAVY SATURATION.

6.2 TROUBLESHOOTING INFORMATION

Troubleshooting procedures applicable to this machine are listed and defined starting with Section 6.8, TROUBLESHOOTING TABLES Index in this section of the manual.

Each malfunction within an individual group or system is followed by a listing of probable causes which will enable determination of the applicable remedial action. The probable causes and the remedial action should, where possible, be checked in the order listed in the troubleshooting tables.

It should be noted that there is no substitute for a thorough knowledge of the equipment and related systems.

It should be recognized that the majority of the problems arising in the machine will be centered in the hydraulic and electrical systems. For this reason, every effort has been made to ensure that all likely problems in these areas are given the fullest possible treatment. In the remaining machine groups, only those problems which are symptomatic of greater problems which have more than one probable cause and remedy are included. This means that problems for which the probable cause and remedy may be immediately obvious are not listed in this section.

The first rule for troubleshooting any circuit that is hydraulically operated and electrically controlled is to determine if the circuit is lacking hydraulic oil and electrical control power. This can be ascertained by overriding the bypass valve *(mechanically or electrically)* so that oil is available to the function valve, then overriding the function valve mechanically. If the function performs satisfactorily, the problem exists with the control circuit.

6.3 HYDRAULIC CIRCUIT CHECKS (SEE FIGURE 6-8.)

The first reference for improper function of a hydraulic system, where the cause is not immediately apparent, should be the Hydraulic Diagram Circuit. The best place to begin the problem analysis is at the power source *(pump)*. Once it is determined that the pump is serviceable, then a systematic check of the circuit components, would follow.

NOTE: *For aid in troubleshooting, refer to Figure 6-8. for HYDRAULIC DIAGRAM circuit.*

6.4 ELECTRICAL CIRCUIT CHECKS

General

The drive system on the MVL and MSP machines requires a microprocessor controlled electrical circuit to operate smoothly and accurately. All platform control console functions are relayed to various machine components *(i.e. platform up/down, drive functions, etc.)* through the Ground Control Module microprocessor box *(mounted at the rear of the machine)*. The Ground Control Module is pre-programmed with factory pre-set personality settings for each machine function.

To help diagnose any problems with components plugged into the Ground Control Module, the module is designed with an internal fault code and text messaging system displayed on an LCD screen at the module. The platform control console also will display LED Flash Codes using the LED strip at the top of the console. When operating normally the LED panel on the platform control console indicates the battery voltage status using ten (10) LEDs *(red/yellow/green)*. If a malfunction to the

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Code 11 - Left Drive Motor - Short Circuit

Check For These Obvious Conditions First:

- Wiring harness from (M1) connector on Traction Control Module to Left Drive Motor for damage.

Table 6-15. Code 11 - Left Drive Motor - Short Circuit

STEP	ACTION	SPEC	YES	NO
1.	Remove the M1 connector from the Traction Control Module and check both the pins to the drive motor for any voltage. (Ground the meter to the Ground Control Module - Negative (–) lug.)	No Voltage	This circuit should be isolated. Repair or Replace Components as Required	Go to Step 2
2.	Check for continuity of both the pins to ground.	No Ground		Replace Traction Control Module

Code 12 - Right Drive Motor - Short Circuit

Check For These Obvious Conditions First:

- Wiring harness from (M2) connector on Traction Control Module to Left Drive Motor for damage.

Table 6-16. Code 12 - Right Drive Motor - Short Circuit

STEP	ACTION	SPEC	YES	NO
1.	Remove the M2 connector from the Traction Control Module and check both the pins to the drive motor for any voltage. (Ground the meter to the Ground Control Module - Negative (–) lug.)	No Voltage	This circuit should be isolated. Repair or Replace Components as Required	Go to Step 2
2.	Check for continuity of both the pins to the drive motor to ground.	No Ground		Replace Traction Control Module

Code 13 - Traction Module - In Fold Back

Check For These Obvious Conditions First:

- Machine is operating on a continuous grade or rough terrain.

Table 6-17. Code 13 - Traction Module - In Fold Back

STEP	ACTION	SPEC	YES	NO
1.	Allow machine to cool the traction module for 30 minutes. Does the machine operate OK after cooling.	—	—	Replace Traction Module
NOTE: *If this is a recurring problem compare current draw of your machine with Traction Control Module specifications in Table 6-3 - Amperage Draw for Various Components.*				

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Voltage Measurement

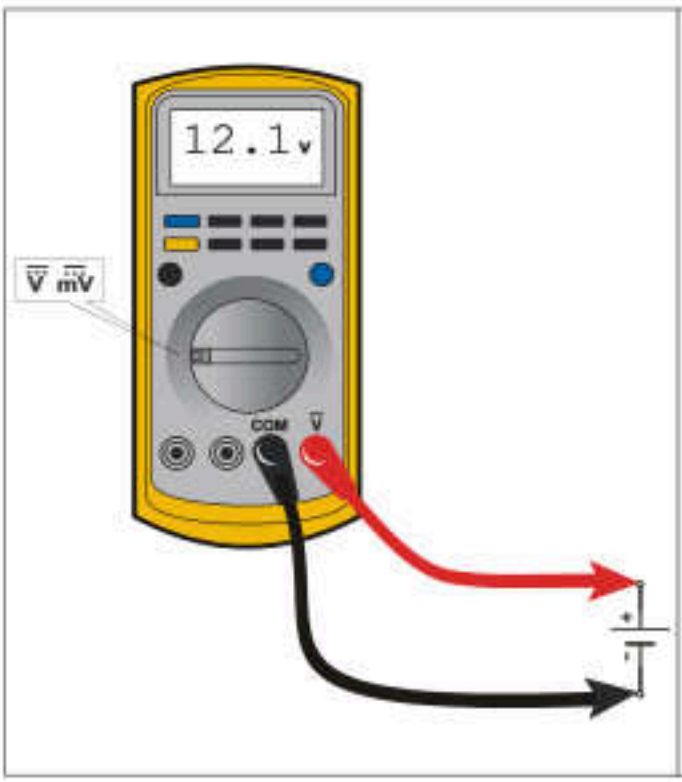


Figure 6-1. Voltage Measurement (DC)

- If meter is not auto ranging, set it to the correct range (See multimeter's operation manual)
- Use firm contact with meter leads

Resistance Measurement

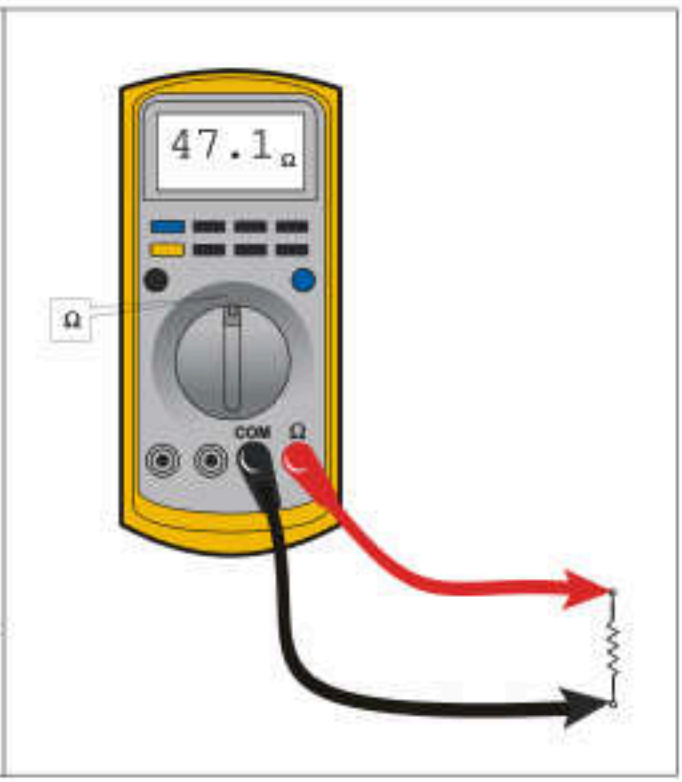


Figure 6-2. Resistance Measurement

- First test meter and leads by touching leads together. Resistance should read a short circuit (very low resistance)
- Circuit power must be turned OFF before testing resistance
- Disconnect component from circuit before testing
- If meter is not auto ranging, set it to the correct range (See multimeter's operation manual)
- Use firm contact with meter leads

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