



**HIRSCHMANN**



**BOOM CONTROL EXTENSION**

**DS350 MODULAR**

**GROVE CRANE TM9100**

**TROUBLESHOOTING MANUAL**

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## **NOTICE**

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## GENERAL INFORMATION

This troubleshooting manual is designed to assist a service of maintenance person in identifying LMI (Load Moment Indicator) problem areas or malfunctions. A digital voltmeter with the capability to also measure current will be required. Regular maintenance and service tools will also be required.

NOTE: Knowledge of how to use a voltmeter to measure both voltage and current is assumed.

For system operation refer to the operator's handbook for the console. This may differ from crane manufacturer and model.

Section 2 provides the drawings and reference material that will be used in the troubleshooting flowcharts of this manual. Use the reference drawings in conjunction with the flowcharts to help understand the operation of the system.

The PAT LMI DS 350 Modular with Boom Control Extension has been designed to provide the crane with the essential information required to operate the machine within the designed parameters.

Using different sensing devices, the DS 350 LMI monitors various crane functions and provides the operator with a continuous display of the crane's capacity. The display continually changes as the crane moves through the motions needed to make a lift.

The DS 350 Modular LMI provides the operator with information regarding the boom length and boom angle of the main boom, working radius rated load and the total calculated weight being lifted by the crane.

If non-permitted conditions are approached, the DS 350 LMI will warn the operator by sounding an audible alarm and lighting a warning light. In addition the LMI system has the capability to provide a signal to the solenoids and thereby locking out those functions that may aggravate the crane's condition.

## WARNING

The DS 350 load moment indicator (LMI) with boom control extension is an operational aid that warns the crane operator when approaching an overload condition, a two block condition and an out of boom sequence condition.

Prior to operating the crane, the operator must carefully and thoroughly read and understand the information provided by the crane and load moment indicator manufacturer.

The responsibility for safe crane operation shall remain with the crane operator who shall ensure that all warnings and instructions supplied are fully understood and observed.

It still remains the operator's responsibility to verify the operation and to select the correct mode during crane operations.

The DS 350 Modular with boom control extension is not, and shall not, be a substitute for good operator judgment, experience and use of accepted safe crane operating procedure

Proper functioning depends upon proper daily inspection and observance of the operating instructions provided with the crane and load moment indicator.

The manual mode is a rigging mode. Lifting loads in manual mode is prohibited.

Should an out of sequence condition occur, the crane operator is responsible to select manual mode to return the sections into sequence before continuing the lift.

## REFERENCE MATERIAL

Document	PAT- Part number	Grove- Part number
Kit Matrix/BOM	031-300-150-688	9-333-103331
Operator's Manual	050-350-191-319	