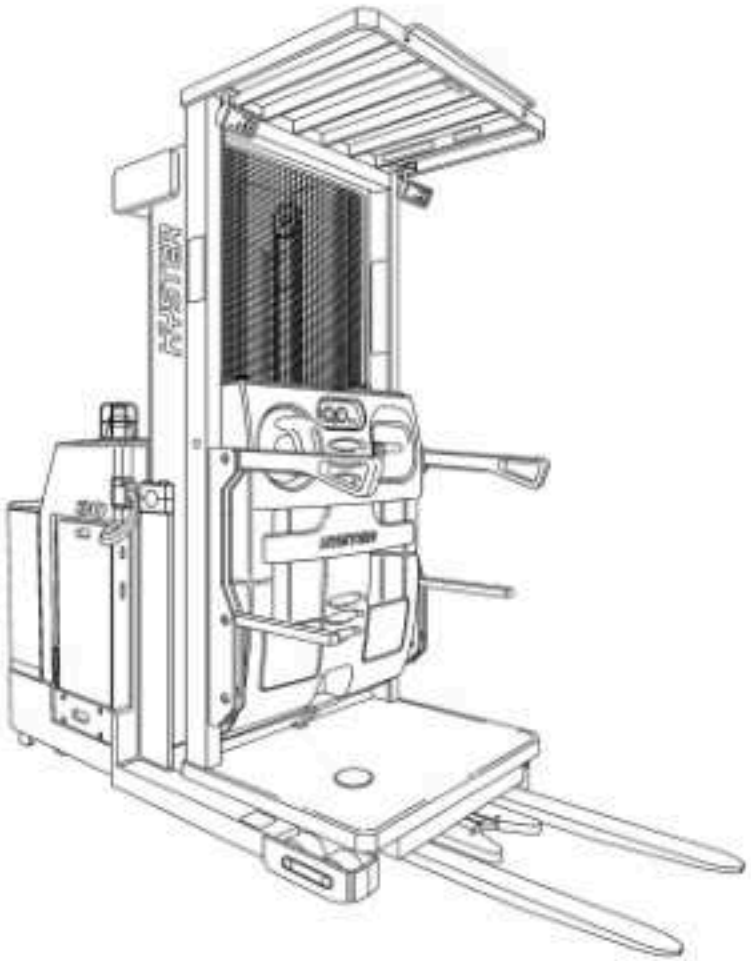
SERVICE MANUAL

R30XMS2 (D174)



FORM 1473337 Rev. 02/04

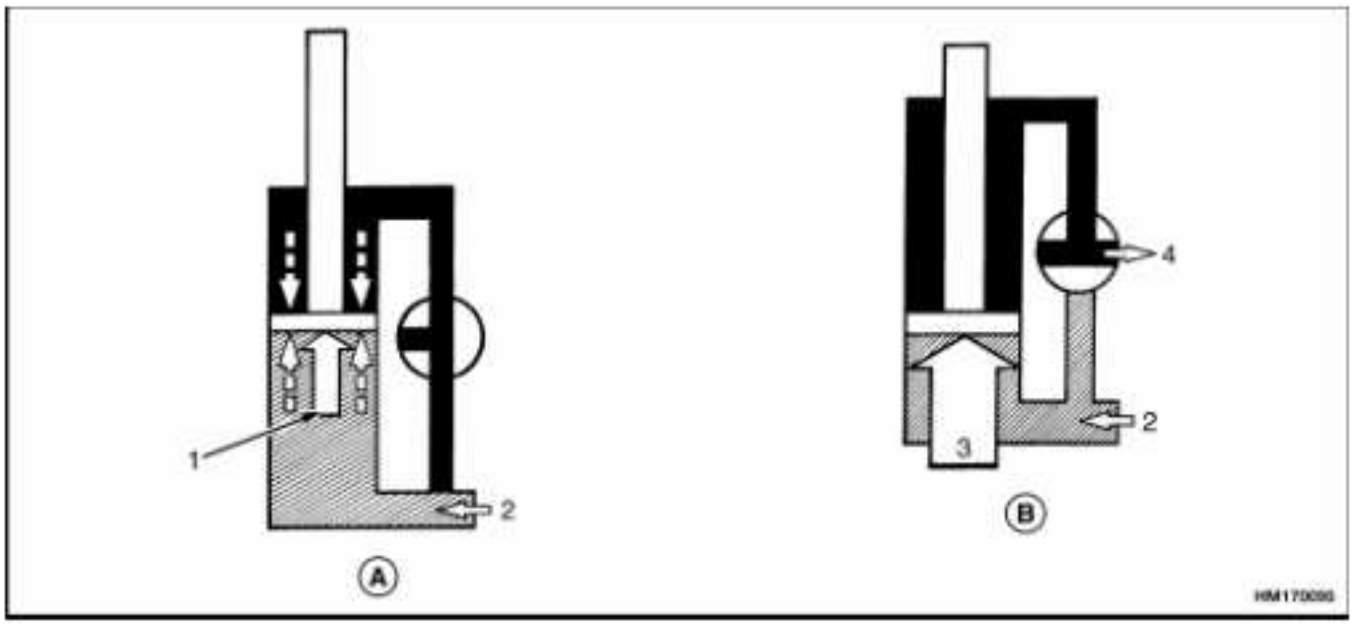
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R30XMS2 (D174)
SERVICE MANUAL CONTENTS

Section	SRM Number	Rev Date
FRAME	0100 SRM 0760	12/02
DC MOTOR MAINTENANCE	0620 SRM 0294	08/03
MASTER DRIVE UNIT	0630 SRM 0283	03/02
ELECTRIC POWER STEERING	1600 SRM 0691	02/02
ELECTRIC BRAKE	1800 SRM 0761	03/02
HYDRAULIC GEAR PUMPS	1900 SRM 0097	10/03
HYDRAULIC SYSTEM	1900 SRM 0419	07/99
CURTIS MOTOR CONTROLLER	2200 SRM 0411	09/00
ELECTRICAL SYSTEM	2200 SRM 0933	02/04
WIRE GUIDANCE	2200 SRM 0957	08/01
INDUSTRIAL BATTERY	2240 SRM 0001	11/03
BATTERY INDICATORS	2260 SRM 0138	06/02
LIFT CYLINDERS	4000 SRM 0135	10/03
MAST - DESCRIPTION	4000 SRM 0763	02/01
MAST - REPAIR	4000 SRM 0764	02/01
INCH (SAE) and METRIC FASTENERS	8000 SRM 0231	03/03
CAPACITIES and SPECIFICATIONS	8000 SRM 0922	03/02
DIAGRAMS	8000 SRM 0923	09/00
PERIODIC MAINTENANCE	8000 SRM 0924	03/02

PART NO. 1473337
Rev. 02/04

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A. HIGH-SPEED OPERATION FOR NO LOAD OR LIGHT LOADS
B. NORMAL OPERATION FOR RATED CAPACITY LOAD OR HEAVY LOADS

1. FORCE
2. FROM HYDRAULIC PUMP
3. GREATER LIFTING FORCE
4. TO HYDRAULIC TANK

Figure 11. Two-Speed Lift Cylinders

NOTE: The maximum loads that the above models will lift at high speed are shown on Table 1.

Table 1. Lift Trucks with Two-Speed Lift Cylinders

Model	Load
S60-100B	1589 to 2043 kg (3500-4500 lb)
H60-80C	1589 to 2043 kg (3500 to 4500 lb)
H110-150F	1589 to 2043 kg (3500 to 4500 lb)
S125-150A	2270 to 2724 kg (5000 to 6000 lb)
H150-200ES, Standard Masts	2270 to 3087 kg (5000 to 6800 lb)
P125-180A, Standard Masts	2270 to 3087 kg (5000 to 6800 lb)
H150-250E, Heavy Duty Masts	3133 to 4041 kg (6900 to 8900 lb)
P125-180A, Heavy Duty Masts	3133 to 4041 kg (6900 to 8900 lb)
H250-300A	4540 to 4994 kg (10,000 to 11,000 lb)
This table shows the approximate maximum load that the mast will lift at high speed. Loads greater than those shown will cause the mast to lift at normal speed. These loads will have a variation because of the different attachments that can be installed on the lift truck.	

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Troubleshooting

EPS III

PROBLEM	POSSIBLE CAUSE	PROCEDURE OR ACTION
Truck will not move or steer.	Battery disconnected.	Connect battery.
	Shutoff has occurred.	Set key to **OFF** position, wait 2 seconds, then set key to **START**, then to **ON** position.
	Dipswitch 8 in wrong position.	Dipswitch 8 should be open for tach generator steering or closed for RTC steering.
	One or both 15 amp fuses that supply current to the steering controller.	Replace fuse(s).
No action when steering wheel is turned.	Command potentiometer defective.	Replace command potentiometer.
	No output from ECM to steer motor.	Replace ECM.
	Power leads defective between ECM and steer motor.	Check and repair all power leads or connections.
	Feedback potentiometer defective.	Replace feedback potentiometer.
	No input to tach generator.	When tach generator is spun, check for voltage between K-14 and TP-3, and K1-6 and TP-3. If voltage is present, replace ECM.
	MDU out of normal operating range.	Raise truck and manually turn MDU within range.
	Steer motor defective.	Repair or replace steer motor.
Steering is loose.	Steering chain loose.	Adjust chain for proper tension.
Truck turns in direction opposite to direction steered.	Gear motor leads reversed.	Connect gear motor leads correctly.
	Command potentiometer leads reversed.	Connect leads correctly.
	Feedback potentiometer leads reversed.	Connect leads correctly.

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FAULT CODES AND DISPLAY MESSAGES

Table 1. Fault Codes and Display Messages

Code	Node or ND	Display	Description	Items to Check If Code Is Displayed
		SlackChn	Slack chain circuit open	Chains slack (carriage hung up on lowering) Slack chain switches functioning Wiring between 1310 & slack chain switches
		SideGate	Side gates up	Side gate switches functioning Wiring between 1310 & side gate switches
		HornOpen	Horn disconnected (open circuit)	Horn (bench test for function) Wiring to horn
		BrakOpen	Brake disconnected (open circuit)	Brake coil (bench test) Wiring to brake
		LowrOpen	Lowering valve disconnected (open circuit)	Lowering valve (bench test) Wiring to lowering valve
		TractErr	Misc. traction error	Wiring to 1243
		Foot Sw	Foot switch off while requesting traction, hoist, or foot switch closed during startup sequence	Use diagnostic display (switches) to confirm switch functionality. Check switch function and wiring.
		Low Batt	Low battery warning, lift cutout, and speed reduced	If lift cutout occurs with true battery conditions too high or low, revise 0% BDI setting.
		LiftLimt	Lift limit reached	

CAUTION

The electrical system on this truck utilizes many control-level circuits (low voltage and current), which may be disturbed by contamination, wear, or damage at the electrical connections. When investigating problems or fault codes, it may be beneficial to check and clean/repair all connections in the affected circuit first. The use of dielectric grease is recommended for all AMP™ and Molex™ electrical connectors. Dielectric grease must be applied to each terminal opening to a depth of 3 mm (0.12 in.) on all AMP connectors and to 4 mm (0.16 in.) on molex connectors. Apply lubricant to mating end only.

CAUTION

The fault detection software and circuits of the traction controller (Curtis 1243) are sensitive to abrupt changes in currents and voltages. Controller fault codes may not necessarily indicate a defective truck component or controller. Fault codes may be generated in response to extreme operating conditions, such as potholes or very low battery levels.

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