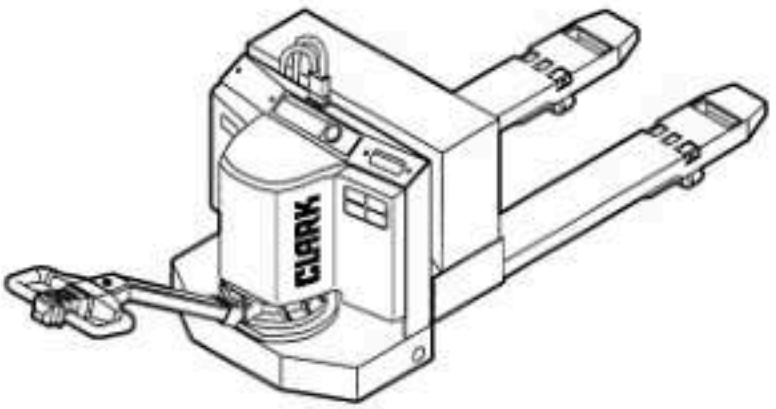
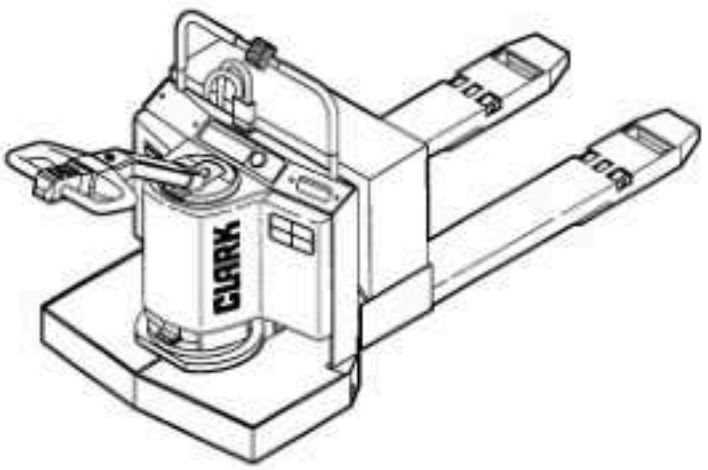
SM 643
PWD/HWD 30-40SE
Service Manual





ISO 9001 CLARK

CLARK Technical Publications Lexington, KY 40508

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SECTION 1

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DIAGNOSTICS AND TROUBLESHOOTING

6

The 1244 controller provides diagnostics information to assist technicians in troubleshooting drive system problems. The diagnostics information can be obtained by observing the appropriate display on the handheld programmer, the fault codes issued by the Status LED, or the fault display driven by the controller's Fault 1 and Fault 2 outputs. Refer to the troubleshooting chart (Table 5) for suggestions covering a wide range of possible faults.

PROGRAMMER DIAGNOSTICS

The programmer presents complete diagnostic information in plain language. Faults are displayed in the Diagnostic Menu (see column 2 in the troubleshooting chart), and the status of the controller inputs/outputs is displayed in the Test Menu.

Accessing the Diagnostic History Menu provides a list of the faults that have occurred since the diagnostic history file was last cleared. Checking (and clearing) the diagnostic history file is recommended each time the vehicle is brought in for maintenance.

The following 4-step process is recommended for diagnosing and troubleshooting an inoperative vehicle: (1) visually inspect the vehicle for obvious problems; (2) diagnose the problem, using the programmer; (3) test the circuitry with the programmer; and (4) correct the problem. Repeat the last three steps as necessary until the vehicle is operational.

Example: A vehicle that does not operate in "forward" is brought in for repair.

STEP 1: Examine the vehicle and its wiring for any obvious problems, such as broken wires or loose connections.

STEP 2: Connect the programmer, select the Diagnostics Menu, and read the displayed fault information. In this example, the display shows "No Faults Present," indicating that the controller has not detected anything out of the norm.

STEP 3: Select the Test Menu, and observe the status of the inputs and outputs in the forward direction. In this example, the display shows that the forward switch did not close when "forward" was selected, which means the problem is either in the forward switch or the switch wiring.

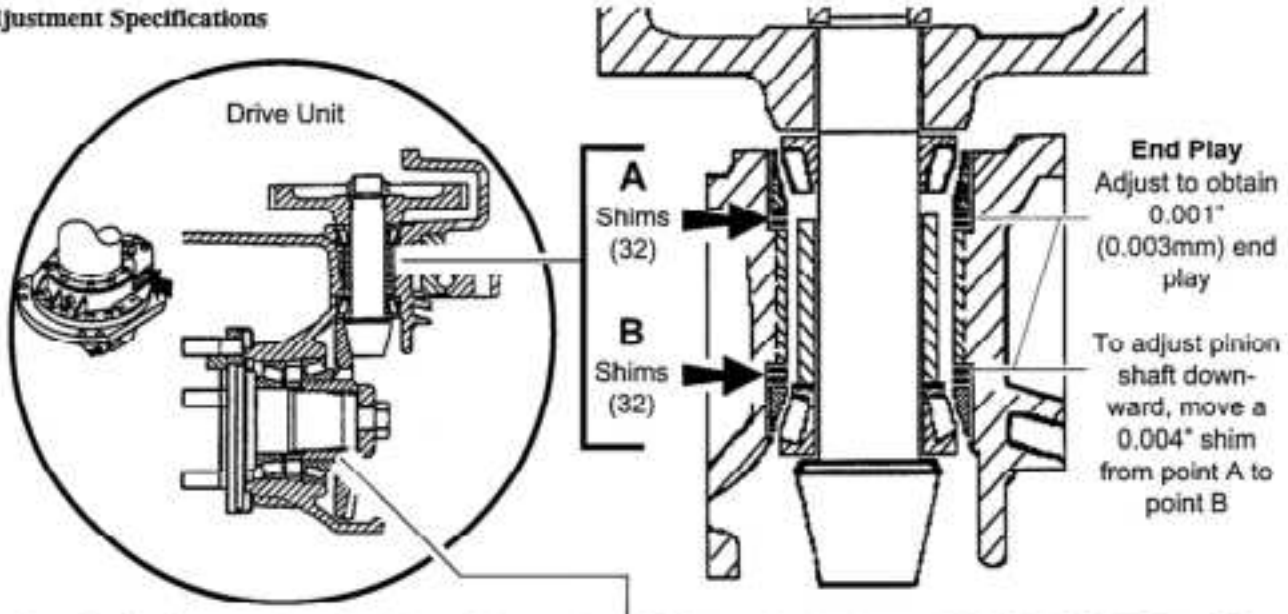
STEP 4: Check or replace the forward switch and wiring and repeat the test. If the programmer shows the forward switch closing and the vehicle now drives normally, the problem has been corrected.

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DRIVE UNIT

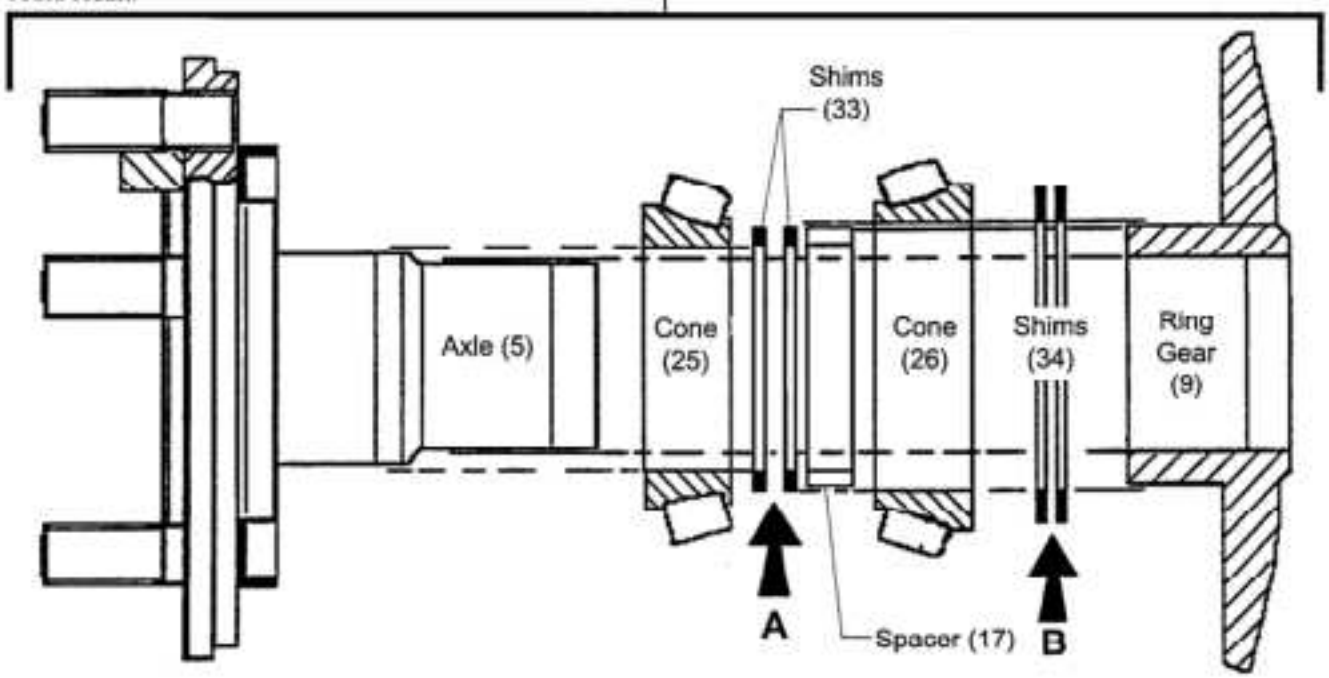
Adjustment Specifications



Bearing preload and proper ring and pinion tooth contact is maintained by shims in various quantities and thickness at four locations. Upon thickness at four locations. Upon reassembly, the same quantity and thickness shims must be used in the location from which they were removed or damage could result.

Each new bearing is supplied with the following shims:

two	(2)	0.004"
one	(1)	0.012"
one	(1)	0.020"



If the ring needs to move inward, and a 0.004" shim is removed from Point B, then a 0.004" shim must be added to Point A to maintain bearing preload (axle shaft end play).

If the ring gear needs to move outward, then you remove a 0.004" shim at Point A and install a 0.004" shim at Point B. This moves the gear outward and maintains bearing preload (pinion shaft end play)

End Play: 0.0"
Bearing Preload: 11 lb.in. (1.25 +/- 0.05 Nm)
Ring and Pinion Backlash Adjustment:
0.10-0.15mm (0.004-0.006") end play. Install dial indicator as shown on page 26.

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