SERVICE MANUAL

A935 (J30-35-40XN)



Rev. 05/14

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

A935 (J30-35-40XN)
SERVICE MANUAL CONTENTS

Section	SRM Number	Rev Date
FRAME	0100 SRM 1329	08/13
OPERATOR'S CAB	0100 SRM 1446	08/13
AC MOTOR REPAIR	0620 SRM 1385	12/12
TRANSAXLE/DRIVE UNIT	1300 SRM 1330	09/12
STEERING AXLE	1600 SRM 1360	04/13
STEERING SYSTEM	1600 SRM 1363	09/13
BRAKE SYSTEM	1800 SRM 1332	12/10
HYDRAULIC SYSTEM	1900 SRM 1333	11/10
HYDRAULIC CLEANLINESS PROCEDURES	1900 SRM 1620	04/13
MAIN CONTROL VALVE	2000 SRM 1334	08/13
CYLINDER REPAIR (MAST S/N A270, A271, A272, A551, A555, A559, .	2100 SRM 1382	03/14
A626, A627, A751, A752, B551, B555, B586, B587, B588, B589, B590, .	2100 SRM 1382	03/14
MAST REPAIR (S/N C661, C662, C663, C665)	4000 SRM 1405	05/14
WIRE HARNESS REPAIR	2200 SRM 1128	04/14
USER INTERFACE, SUPERVISOR	2200 SRM 1335	02/14
USER INTERFACE, SERVICE	2200 SRM 1336	02/14
ELECTRICAL SYSTEM	2200 SRM 1337	08/13
INDUSTRIAL BATTERY	2240 SRM 0001	03/14
METRIC AND INCH (SAE) FASTENERS	8000 SRM 0231	12/04
SCHEMATICS/DIAGRAMS	8000 SRM 1341	01/13
PERIODIC MAINTENANCE	8000 SRM 1373	08/13
CAPACITIES AND SPECIFICATIONS	8000 SRM 1376	08/13
DIAGNOSTICS TROUBLESHOOTING	9000 SRM 1377	08/13

Rev. 05/14

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

The next item that appears in the procedure is the **CAUSE A**. This introduces the troubleshooter to the first sequence of tests or measurements to follow. Continuing through the procedure in the step-by-step directions will lead the user to:

- Additional possible causes
- Replacement/repair instructions
- Correction of the fault
- Operational check of the repaired/replaced device

It must be noted that Service Manual factory directions discourage probing of the connectors using any type of wire or pin and that resistance or continuity measurements of these connections should only be done with the appropriate service tool and breakout connectors.

Following through the procedure, the next items are the **DIAGRAMS** that support the troubleshooting and provide relevant data for wiring, connectors, power, signal and other reference data. These will enable the troubleshooter to measure, verify, and make critical decisions leading to the root cause. The diagrams may include:

- A mini-schematic of the suspect circuit
- Wire identification and circuit function
- Connector pin-out locators
- Special reference data for device or component

Troubleshooting Procedures, Performance

It is important to remember the basics of troubleshooting when checking the electronically reported faults. Prior to starting any of the listed procedures, it is recommended that the items listed below be reviewed. These may help to isolate the problem, eliminate some steps or enforce the procedure that has been identified. These items are:

- **LOOK** — Are there any observable symptoms, visual evidence or obvious conditions that could result in, or contribute to, the reported fault.
  Are the displayed Icons due to Interlocks? See **User Interface**, **Supervisor** 2200 SRM 1335 or **User Interface**, **Service Technician** 2200 SRM 1336.
- **LISTEN** — If the lift truck can be operated with the reported problem, are there any unusual noises or vibrations that could result in, or contribute to, the reported fault.
- **TOUCH OR SMELL** — High operating temperatures and excessive wear can sometimes produce an odor or visual evidence that can be linked to other faults or conditions.
- In general, let your senses and your experience assist you in resolving the problem in the most efficient manner. Ask yourself:
  - What is required for this device or operation to function correctly?
  - Where are the devices/parts located?
  - Has this problem been reported before? If so, how frequently? Use the fault history logs to help identify repeated problems. This can be very helpful in analyzing faults of an intermittent nature which may be difficult to duplicate.
  - Has repair work, disassembly or other maintenance work been performed on suspect device or system recently?
- Once these questions have been considered, proceed with the DTC resolution as per the procedure, using any additional information to assist in resolving the discrepancy.

Troubleshooting Procedures, Final

DTCs are stored in the FAULT CODE LOGS, where a history of repeat failures is maintained, until cleared by an authorized service technician. All DTCs are to be cleared prior to operating the lift truck. Fault code logs should only be cleared once the data is recorded by a authorized service technician. See Display Menu Flowchart.

NOTE: Motor/Motor Controller Fault Logs cannot be cleared. Once the Motor Controller Log is full, DTCs are removed on a First In, First Out (FIFO) basis.

DIAGNOSTIC TROUBLE CODES

The Diagnostic Trouble Codes that appear in the table that follows are those codes that have been stored in the memory of the VSM or in certain cases the Display Panel or other Controllers. They will be displayed via the Display Panel upon detection and will remain in the applicable fault history logs until service intervention clears the logs.

The DTC list is comprised of the DTC number and a brief description of the fault item.

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

Horn Failure (Cont)

Is battery voltage present?

YES: Go to Step 3.

NO: Check wiring harness for shorts between wires 005 and 124 for open circuit. Repair or Replace wiring harness. Depending on your lift truck, see **Wire Harness Repair** 2200 SRM 1128.

3. Change DMM to ohms scale. Verify DMM zero reading.

Is the reading approximately 28Ω?

YES: Go to Step 4.

NO: Wire 045 has a short to ground in the wiring harness. Repair/Replace wiring harness. Depending on your lift truck, see **Wire Harness Repair** 2200 SRM 1128.

NOTE: Do not disconnect wiring harness at horn button.

4. Remove only horn button from top of steering wheel. Ensure that wire is still connected.
5. Set DMM to volts scale.
6. Measure voltage on both sides of horn button terminals with respect to ground (-).

Is battery voltage present?

YES: Go to Step 7.

NO: Go to Step 8.

7. Connect DMM to slip ring wires. During voltage measurement, rotate steering wheel from lock-to-lock position to test the entire slip ring surface.

Is battery voltage present?

YES: Repair or Replace slip ring assembly. Refer to appropriate **Frame** manual, depending on lift truck model, **Steering Column Repair** section.

NO: Wire 025 and 109 has open circuit in wiring harness. Repair/Replace wiring harness. Depending on your lift truck, see **Wire Harness Repair** 2200 SRM 1128.

8. Push horn button.

Does DMM voltage go to zero?

YES: Go to Cause C.

NO: Replace horn button.

CAUSE C - HORN FAILURE

PROCEDURE OR ACTION:

1. Connect horn at CPS 89.
2. Using a jumper wire to short circuit, connect Pin A and Pin C at CPS 89.

Does DMM voltage go to zero?

YES: Go to Cause D.

NO: Replace horn.

CAUSE D - VSM FAILURE

PROCEDURE OR ACTION:

1. Replace VSM. Depending on your lift truck, see **Electrical System** 2200 SRM 1369, or **Electrical System** 2200 SRM 1337.

END SYMPTOM

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

Battery

J1.6-2.0XN (A935) EUROPEAN MODEL TRUCKS

Model/ Wheel Base	Maximum Compartment Size Length × Width	Maximum Battery Size		Weight		Maximum Battery Compartment Height
		Length	Width	Minimum	Maximum	
J1.6-1.8XN 1290 mm (50.8 in.)	546 x 991 mm (21.5 x 39 in.)	**Standard Battery** 537 mm (21.1 in.)	**Standard Battery** 980 mm (38.6 in.)	**Standard Battery** 800 kg (1765 lb)	**Standard Battery** 1100 kg (2425 lb)	**Standard Battery** 677 mm (26.7 in.)
		DIN Battery 522 mm (20.6 in.)	**DIN Battery** 830 mm (32.7 in.)	**DIN Battery** 673 kg (1480 lb)	**DIN Battery** 743 kg (1640 lb)	**DIN Battery** 643 mm (25.3 in.)
J1.6-2.0XN 1431 mm (56.3 in.)	643 x 991 mm (25.3 x 39 in.)	**Standard Battery** 632 mm (24.9 in.)	**Standard Battery** 980 mm (38.6 in.)	**Standard Battery** 1000 kg (2205 lb)	**Standard Battery** 1200 kg (2646 lb)	**Standard Battery** 677 mm (26.7 in.)
		DIN Battery 630 mm (24.8 in.)	**DIN Battery** 830 mm (32.7 in.)	**DIN Battery** 813 kg (1790 lb)	**DIN Battery** 899 kg (1980 lb)	**DIN Battery** 643 mm (25.3 in.)
J1.6-2.0XN 1539 mm (60.6 in.)	750 x 991 mm (29.5 x 39 in.)	**Standard Battery** 742 mm (29.2 in.)	**Standard Battery** 980 mm (38.6 in.)	**Standard Battery** 1000 kg (2205 lb)	**Standard Battery** 1300 kg (2865 lb)	**Standard Battery** 677 mm (26.7 in.)
		DIN Battery 738 mm (29.1 in.)	**DIN Battery** 830 mm (32.7 in.)	**DIN Battery** 962 kg (2120 lb)	**DIN Battery** 1064 kg (2350 lb)	**DIN Battery** 643 mm (25.3 in.)

NOTE: Tolerances of the battery compartment are +3 and −0 mm (+0.12 and −0 in.). The battery size column shows the size range that will permit the battery to still fit into a battery compartment.

NOTE: Battery compartment length is front to back. Width is side to side. The "length" dimension of the battery must fit within the battery compartment front-to-back dimension with a clearance of 0 to 13 mm (0 to 0.5 in.) maximum. Battery width must fit within the battery compartment side-to-side dimension.

WARNING

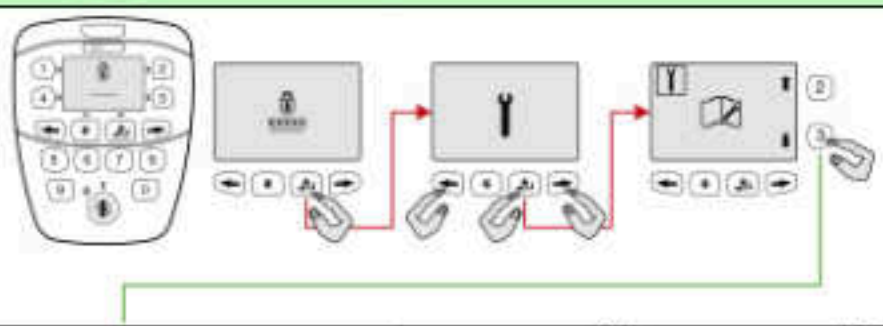
The battery must fit the battery compartment so that the battery restraint system will operate correctly. Use only batteries with the correct length shown in this table. Adjust the spacer plate to prevent the battery from moving more than 13 mm (0.5 in.) forward or backward.

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

TSP Steer Axle Calibration Required (Cont)

CAUSE D

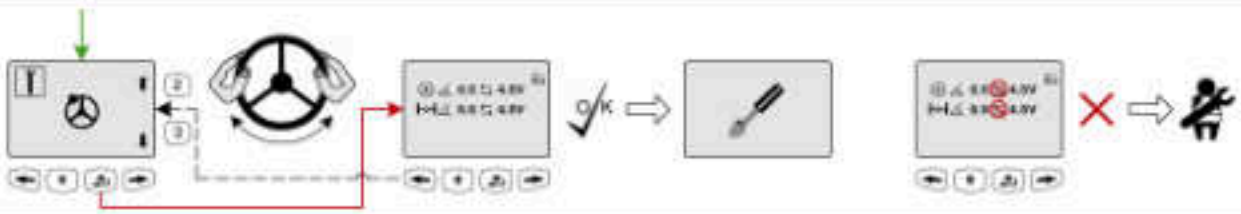
Calibration Process--Go to Display Menu



Enter SERVICE Password→ ☞* ⇆Diagnostics→ ☞* ↓↑Steering Sensor

CAUSE D1

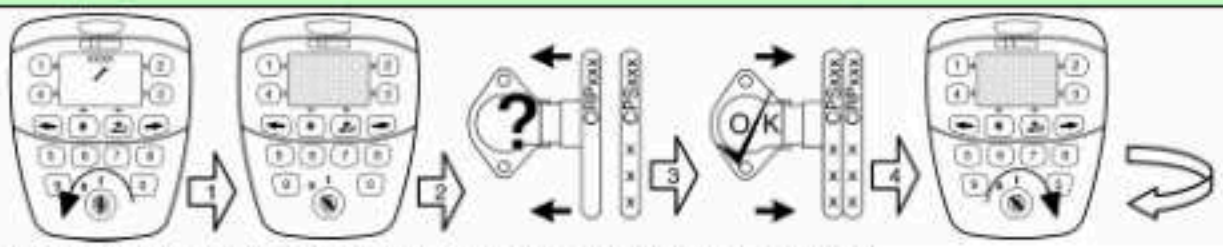
Steering Sensor Values



1. ☞*→ Rotate steering wheel ↑ Values vary >0.5V <4.5V = H→ Proceed with Calibration→ Cause D3↓
2. ☞*→ Rotate steering wheel ↑ Values =the same = X=Steer Mechanism/Faulty Sensor→ Go to 3↓
3. Check Steer Mechanism Operation→ Mechanism H→ Cause D2↓ Mechanism X Go to 4↓
4. See **Steering System** 1600 SRM 1331/**Steering System** 1600 SRM 1363 repair.

CAUSE D2

Steer Sensor(s) Replacement



1. Power **OFF**→ Disconnect sensor **Do not discard.**→ Install new sensor→ Power **ON**→ Go to 2↓
2. See **Electrical System** 2200 SRM 1337/**Electrical System** 2200 SRM 1369.

(continued on next page)

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >

High Tire Wear - Steer Axle

POSSIBLE CAUSE

A. RUNNING OVER OIL/SOLVENTS AND DEBRIS
B. EXCESSIVE SPEED ON TURNS AND STOPS
C. TURNING WITH MACHINE STOPPED OR NO LOAD ON FORKS
D. LOW PNEUMATIC TIRE INFLATION
E. HIGH PNEUMATIC TIRE INFLATION
F. FAILED WHEEL BEARINGS
G. LOOSE TIE RODS

CAUSE A - RUNNING OVER OIL/SOLVENTS AND DEBRIS

PROCEDURE OR ACTION:
Visually inspect work area for contaminates and debris.

CAUSE B - EXCESSIVE SPEED ON TURNS AND STOPS

PROCEDURE OR ACTION:
Reduce speed and spinning of wheels.

CAUSE C - TURNING WITH MACHINE STOPPED OR NO LOAD ON FORKS

PROCEDURE OR ACTION:

NOTE: Steering without load on forks puts the highest load on steer axle because of counterweight. Avoid steering wheels when not moving to reduce tire wear.
Steer while moving whenever possible.

CAUSE D - LOW PNEUMATIC TIRE INFLATION

PROCEDURE OR ACTION:
Check and adjust tire inflation. See **Operating Manual**.

CAUSE E - HIGH PNEUMATIC TIRE INFLATION

PROCEDURE OR ACTION:
Check and adjust tire inflation. See **Operating Manual**.

CAUSE F - FAILED WHEEL BEARINGS

PROCEDURE OR ACTION:
Inspect wheel bearings.

Are bearings in good condition?

YES: Tires are defective. See tire manufacturer for warranty.

NO: Replace wheel bearing. Depending on your lift truck, see **Transaxle** 1300 SRM 1330 or **Steering Axle** 1600 SRM 1360.

CAUSE G - LOOSE TIE RODS

PROCEDURE OR ACTION:
Inspect joint where tie rods are attached to pinion assembly.

Is the tie rod tight in bore?

YES: See Wheels Appear Tipped or Misaligned.

NO: Replace tie rod. Depending on your lift truck, see **Transaxle** 1300 SRM 1330 or **Steering Axle** 1600 SRM 1360.

MidWestTech | Hyster A935 (J30-35-40XN) Forklift Service Manual | Publication A935 Order the manual at mid-west-tech.com >