SERVICE REPAIR

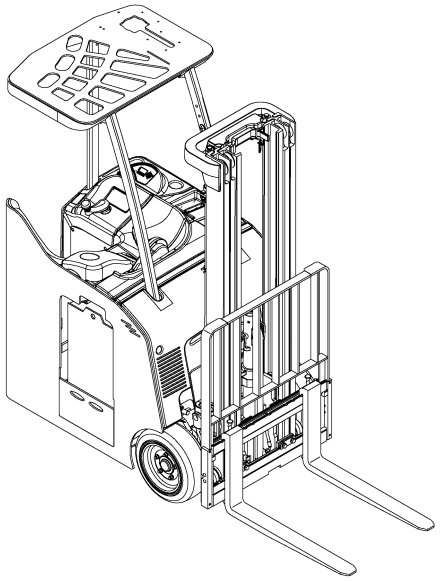
MANUAL

Hyster C219 (E30HSD3, E35HSD3, E40HSD3) Forklift

HYSTER

USER INTERFACE - SUPERVISOR

$E30HSD_3$, $E35HSD_3$, $E40HSD_3$ [C219]



HYSTER

PART NO. 4131296

2200 SRM 2023

SAFETY PRECAUTIONS
MAINTENANCE AND REPAIR

- The Service Manuals are updated on a regular basis, but may not reflect recent design changes to the product. Updated technical service information may be available from your local authorized Hyster® dealer. Service Manuals provide general guidelines for maintenance and service and are intended for use by trained and experienced technicians. Failure to properly maintain equipment or to follow instructions contained in the Service Manual could result in damage to the products, personal injury, property damage or death.
- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand, use a lifting mechanism.
- Wear safety glasses.
- DISCONNECT THE BATTERY CONNECTOR before doing any maintenance or repair on electric lift trucks. Disconnect the battery ground cable on internal combustion lift trucks.
- Always use correct blocks to prevent the unit from rolling or falling. See HOW TO PUT THE LIFT TRUCK ON BLOCKS in the **Operating Manual** or the **Periodic Maintenance** section.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a DO NOT OPERATE tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Be sure to follow the **WARNING** and **CAUTION** notes in the instructions.
- Gasoline, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), and Diesel fuel are flammable. Be sure to follow the necessary safety precautions when handling these fuels and when working on these fuel systems.
- Batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.

NOTE: The following symbols and words indicate safety information in this manual:

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and property damage.

On the lift truck, the WARNING symbol and word are on orange background. The CAUTION symbol and word are on yellow background.

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This section is for the following models:

(E30HSD3, E35HSD3, E40HSD3) [C219]

General

INTRODUCTION

The Common Control System (CCS) was developed to achieve a commonality of programming traits and display menus across a wide range of fork lift products. The ability to use one common programming method increases the effectiveness of the supervisor through similarity of functions when using the display interface and display menus and sub-menus. Whenever differences in menu structures appear between products they will be noted in the applicable service manual for that product. Some terms and descriptions in this manual may be generic in scope and not represent the actual truck being serviced. Any questions regarding this manual should be directed to the factory service representative.

DESCRIPTION

The User Interface Service Supervisor Manual describes the functions of the display panel that are available to the supervisor. With a proper supervisor-level password, a supervisor can access menu items that are not visible at the operator-level access.

NOTE: The initial set up of supervisor passwords must be performed by a service technician accessing the menu system with a service-level password. The supervisor password must be set up before a supervisor can access the menu functions.

The dash display is a multifunction device. It contains a button keypad, a series of LED indicator lights, and an LCD screen. See Figure 1.

Button Keypad

The button keypad is located on the right side of the display. It consists of four buttons arranged in a circle with a fifth button in the center. The buttons are numbered 1 through 5, starting with button 1 at the top and continuing clockwise and ending with button 5 situated in the center of the keypad.

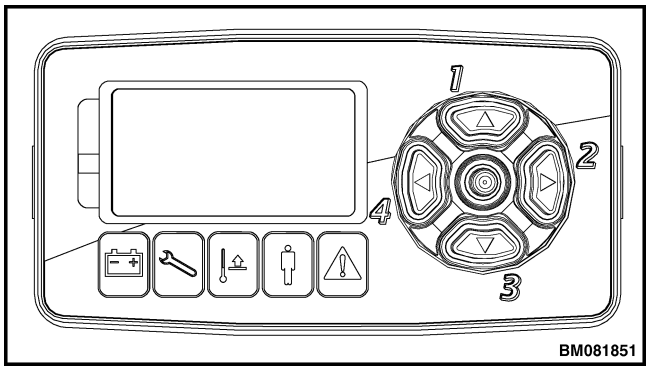


Figure 1. Dash Display

LED Indicator Lights

The LED indicator lights are located on the display below the LCD screen and to the left of the button keypad. The lights illuminate to notify the operator of certain conditions. The function of each light (in order from left to right) is as follows:

- Battery
- Wrench
- Thermometer
- Operator Pedal
- Warning

LCD Screen

The LCD screen displays the following when the key is in the **ON** position:

1. Battery Charge Indicator
2. Hourmeter (Hours)
3. Throttle Command
4. Actual Speed
5. Steer Tire Position
6. Run Direction
7. Performance Mode

DASH DISPLAY MENU ACCESS

To access the dash display menu system:

1. Turn the key or keyless switch to the **ON** position.
2. Depress the center button (#5) on the display two times.
3. The Enter Password screen will now appear on the LCD. Enter your five-digit Supervisor password.

To enter your password at the ENTER PASSWORD screen, enter the appropriate digit in the highlighted area of the display.

Use the appropriate button on the display keypad to enter any digit between 1 and 5. The cursor will automatically move to the next position after a number has been entered. Repeat until all five digits of your password have been entered. Upon successful entry of your supervisor-level password, the display will enter the Supervisor Menu system. If an incorrect password is entered, the display will ask for the password to be entered again. The menu system can be exited at any time by pressing the LEFT (#4) button repeatedly.

Menu Navigation

NOTE: The display menus are revolving and will repeat when you scroll beyond the last menu item.

Upon successful entry of your supervisor-level password, the supervisor menu screen will appear on the dash display LCD screen. Menu navigation is accomplished by using the display buttons. From inside the menu, the buttons function as follows:

1. **UP**
   - Scroll up within a menu, or increase the value of a setting when making a parameter adjustment.
2. **RIGHT**
   - Scroll right within a menu. Will move you into the next submenu or activate the highlighted parameter to allow parameter value adjustments.
3. **DOWN**
   - Scroll down within a menu, or decrease the value of a setting when making a parameter adjustment.
4. **LEFT**
   - Scroll left within a menu. Will move you to the previous menu when depressed. Press repeatedly to exit the menu system.
5. **ENTER**
   - Press to accept parameter value adjustments. Press twice to access the Enter Password screen.

DASH DISPLAY MENU OPERATION

The CCS software is accessible through the on board dash display. Supervisor Level controlled truck operating functions can be set using the CCS menu structure.

NODES

Within the menu structure, you may encounter the term “Node”. The lift truck software uses nodes to identify the various control devices used within the lift truck. The following node designations are used in this manual:

Node 10 - Display

Node 30 - Right Traction Controller

Node 31 - Left Traction Controller

Node 50 - Pump

Node 60 - Control Handle

The nodes are connected and communicate with each other through the CANbus communication system.

MENU STRUCTURE

The base menu is structured to provide access to the following individual menus. Some of the menu items are password protected, meaning you can only access those menu items allowed under your individual password rights. See Table 1:

Use the UP (#1) and DOWN (#3) buttons to navigate to the menu item allowed for your password level. Use the LEFT (#4) and RIGHT (#2) buttons to move within the selected menu. Use the CENTER (#5) button to confirm your selections.

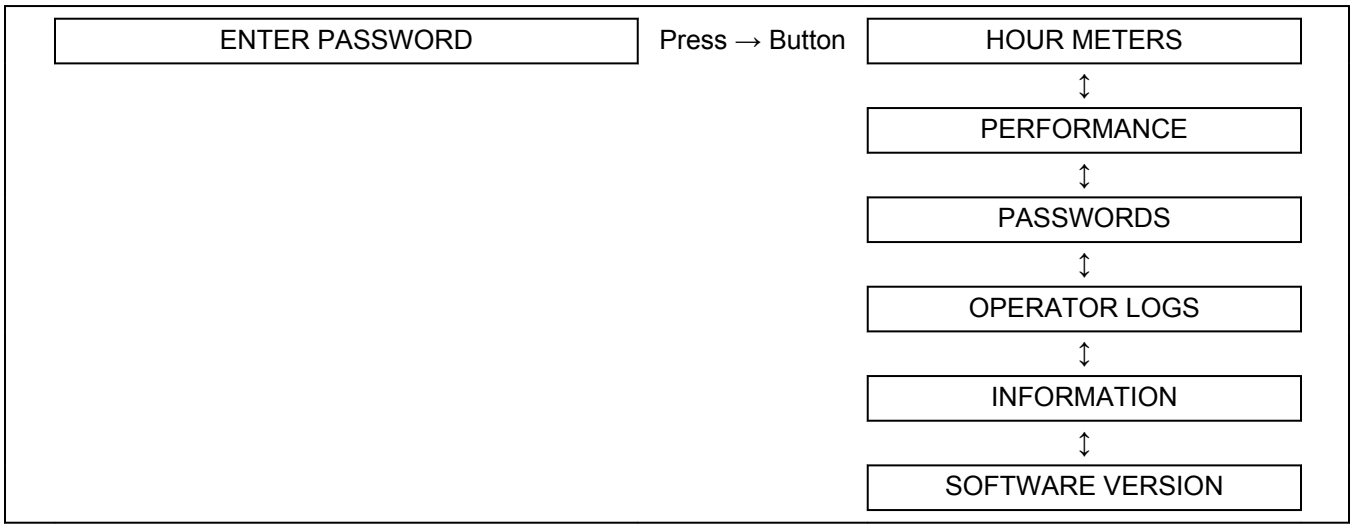
Table 1. Password Structure

Menu Item	Password Level		
	Operator	**Supervisor**	**Technician**
Hour Meters	X	X	X
Performance		X	X
Operator Passwords		X	X
Operator Logs		X	X
Information	X	X	X
Settings			X
Software Versions		X	X
Error Logs			X
Diagnostics			X
Calibrate			X

Supervisor-Level Menu

The Supervisor-Level menu allows a supervisor access to the dash display menu system to view operator logs, truck data, and adjust truck systems and settings. With a proper Supervisor-level password, a supervisor can access menu items that are not visible at Operator level access. See Table 2. See Table 1 for the submenu choices available at the Service-Level Menu.

Table 2. Supervisor-Level Menu

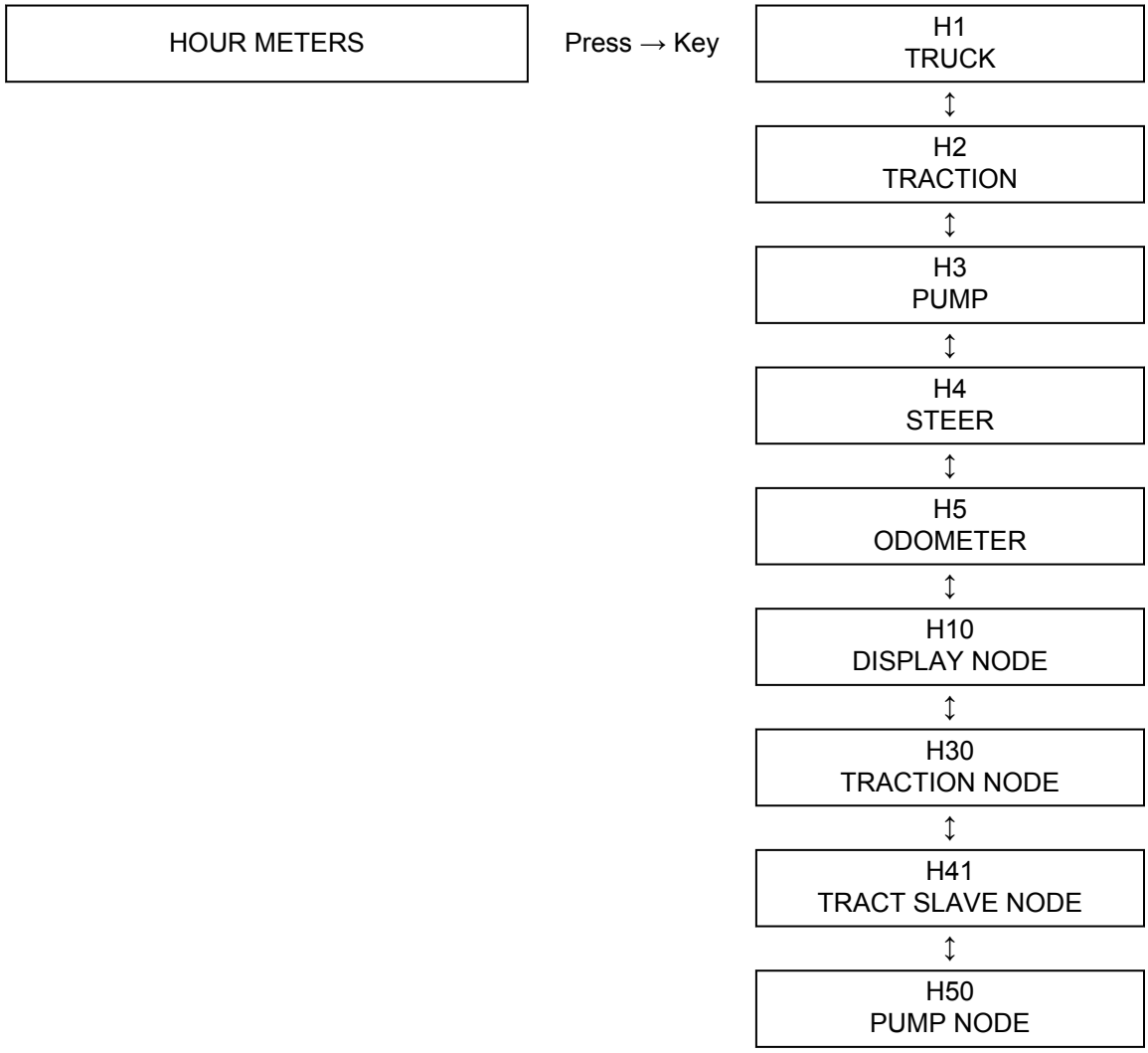


HOUR METERS

Hour meter data is incrementally stored in the display during operation and the data is recorded in the Traction controller every 6 minutes. If there is a loss of power, data is not lost. At every key on, the display hours synchronize with the master. Within the Hour Meters menu you can view the three different hour meter functions. See Table 3. Scroll through the Hour Meters menu using the UP (#1) and DOWN (#3) buttons and press the RIGHT (#2) button to enter the desired selection. Press the LEFT (#4) button to return to the previous menu.

Table 3. Hour Meters Menu

NOTE: Depending on how an individual lift truck is equipped, some functions shown on the display may not be available for viewing.



H1 Truck Hours

The Truck Hours hourmeter accumulates time when the key switch is in the **ON** position and the operator presence switch is activated.

H2 Traction Hours

The Traction Hours hourmeter accumulates time when the traction motor is activated.

H3 Pump Hours

The Pump Hours hourmeter accumulates time when the lift motor is activated.

H4 Steer Hours

The Steer Hours hourmeter accumulates time when the steer motor is activated.

H5 Odometer Hours

The Odometer Hours hourmeter shows the total number of miles/kilometers driven based on the traction hours.

H10 Display Hours

The Display Hours hourmeter shows the total number of hours of operation of the display.

H30 Traction Node Hours

The Traction Hours hourmeter shows the total number of hours of operation of the traction controller.

H41 Slave Traction Node Hours

The Steer Hours hourmeter shows the total number of hours of operation of the steer controller.

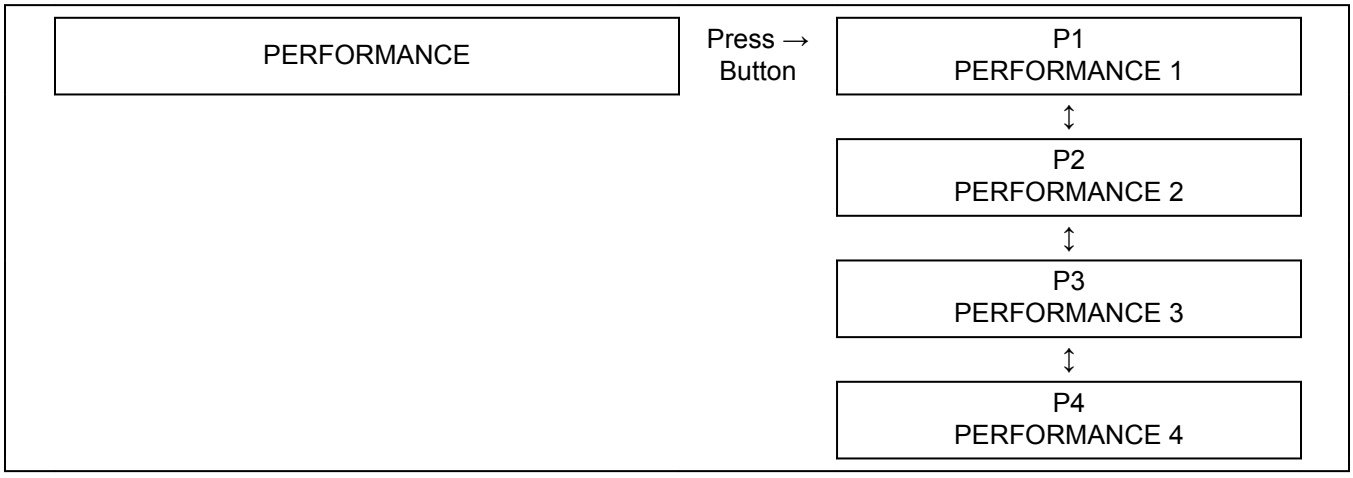
H50 Pump Node Hours

The Pump Hours hourmeter shows the total number of hours of operation of the pump controller.

PERFORMANCE

The lift truck software allows for the setting of four independent performance levels. See Table 4. When the password setting is enabled, specific levels of lift truck performance can be specified for any operator with a valid password for this lift truck. Lift truck performance levels can only be set or altered by a supervisor or technician. Scroll through the Performance Level menu using the UP (#1) and DOWN (#3) buttons and press the RIGHT (#2) button to enter the desired selection. Press the LEFT (#4) button to return to the previous menu.

Table 4. Performance-Level Menu



Performance Level 1

Table 5. Performance Level 1 Menu

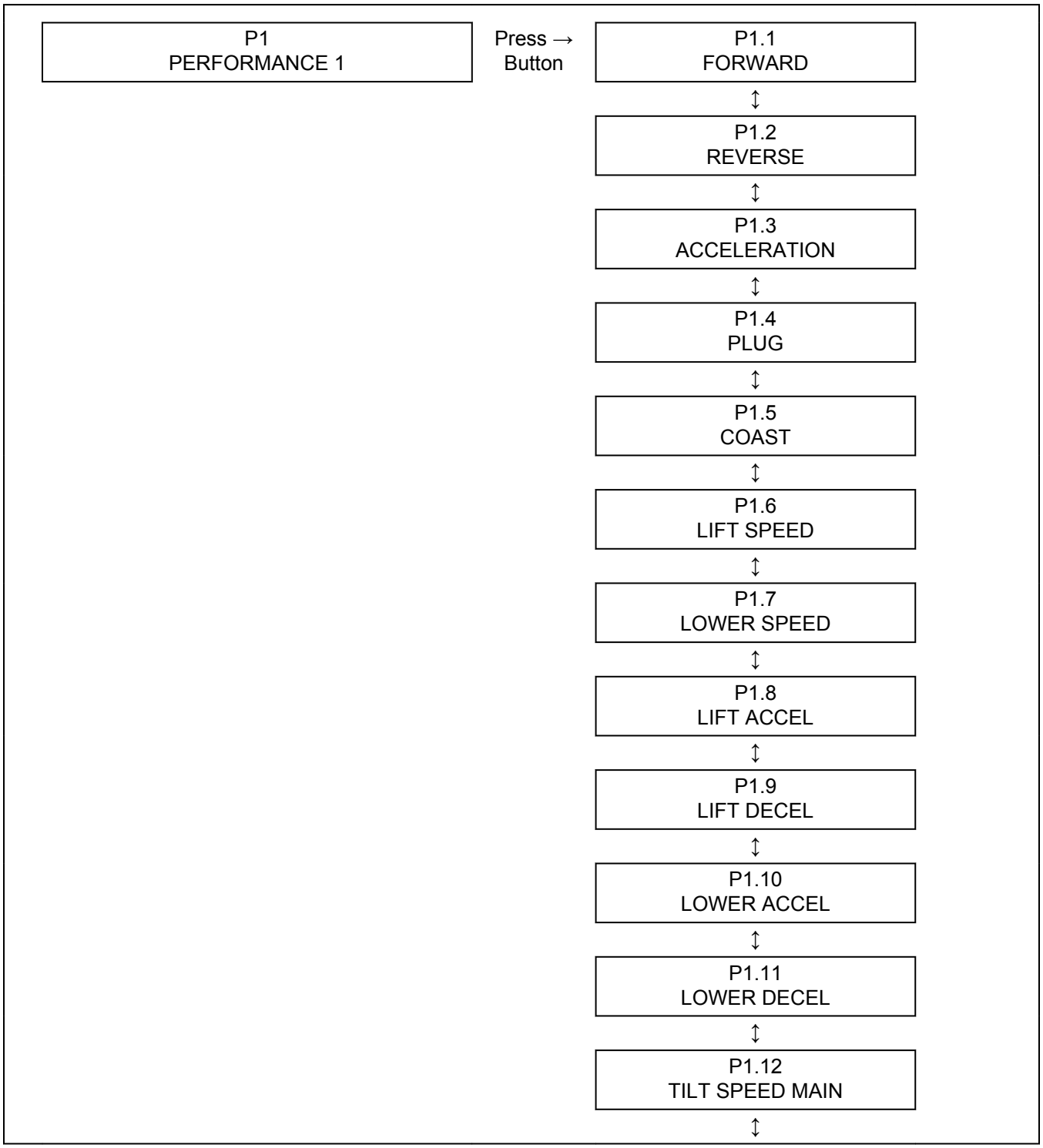
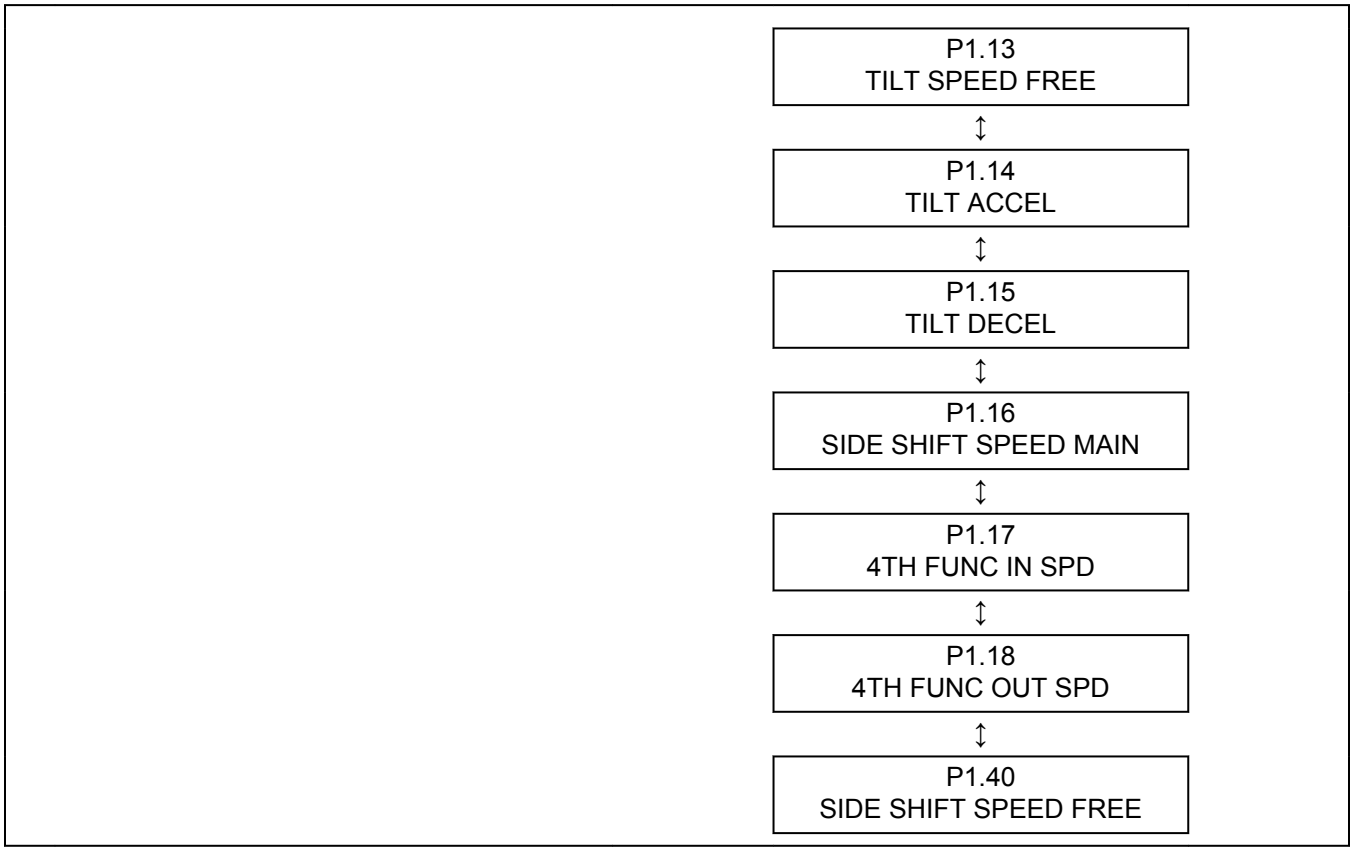


Table 5. Performance Level 1 Menu (Continued)



P1.1 Forward

This parameter allows the user to set the maximum forward travel speed of the lift truck. To change this parameter, input the desired speed in MPH or KPH.

P1.2 Reverse

This parameter allows the user to set the maximum reverse travel speed of the lift truck. To change this parameter, input the desired speed in MPH or KPH.

P1.3 Acceleration

This parameter allows the user to adjust the traction acceleration from the maximum (as allowed by factory parameters) to the minimum value in the parameter value range. The setting range is from 1 to 9. Setting this parameter to "9" will result in maximum acceleration. Setting this parameter to "1" will result in minimum acceleration.

P1.4 Plug

This parameter allows the user to adjust the maximum braking rate when the control handle is fully reversed causing the lift truck to enter the plugging mode. The setting range is from 1 to 9. Setting this parameter to "9" will result in maximum braking rate. Setting this parameter to "1" will result in minimum braking.

P1.5 Coast

Use this menu to adjust the maximum braking rate when the control handle is returned to the neutral position. The setting range is from 1 to 9. Setting this parameter to "9" will result in maximum braking rate. Setting this parameter to "1" will result in minimum braking.

P1.6 Lift Speed

This parameter allows the user to adjust the mast lift speed from the maximum lift speed to some lower speed within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum lift speed. Setting this parameter to “1” will result in minimum lift speed.

P1.7 Lower Speed

This parameter allows the user to adjust the mast lower speed from the maximum lower speed to some lower speed within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum lower speed. Setting this parameter to “1” will result in minimum lower speed.

P1.8 Lift Accel

This parameter allows the user to adjust the hydraulic pump motor acceleration during lifting from the maximum acceleration rate to some lower acceleration rate within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum acceleration during lifting. Setting this parameter to “1” will result in minimum acceleration during lifting.

P1.9 Lift Decel

This parameter allows the user to adjust the hydraulic pump motor deceleration during lifting from the maximum deceleration rate to some lower deceleration rate within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum deceleration during lifting. Setting this parameter to “1” will result in minimum deceleration during lifting.

P1.10 Lower Accel

This parameter allows the user to adjust solenoid acceleration while lowering from the maximum acceleration rate to some lower acceleration rate within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum acceleration during lowering. Setting this parameter to “1” will result in minimum acceleration during lowering.

P1.11 Lower Decel

This parameter allows the user to adjust solenoid deceleration while lowering from the maximum deceleration rate to some lower deceleration rate within the parameter range. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum deceleration during lowering. Setting this parameter to “1” will result in minimum deceleration during lowering.

P1.12 Tilt Speed Main

This parameter is used to adjust tilt speed when the mast is elevated above free lift. It also controls tilt speed when the mast is below free lift if the truck is NOT equipped with "Reduced Speed Tilt" option.

P1.13 Tilt Speed Free

This parameter allows the user to adjust the maximum tilt speed when the mast is raised above free-lift position. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum tilt speed. Setting this parameter to “1” will result in minimum tilt speed.

P1.14 Tilt Accel

This parameter allows the user to adjust the rate of tilt speed acceleration. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum accel speed. Setting this parameter to “1” will result in minimum accel speed.

P1.15 Tilt Decel

This parameter allows the user to adjust the rate of tilt speed deceleration. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum decel speed. Setting this parameter to “1” will result in minimum decel speed.

P1.16 Sideshift Speed Main

This parameter allows the user to adjust the maximum sideshift speed. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum sideshift speed. Setting this parameter to “1” will result in minimum sideshift speed.

P1.17 4th Function In Speed

This parameter allows the user to adjust the maximum 4th Function In speed. The setting range is from 1 to 9. Setting this parameter to "9" will result in maximum 4th function speed. Setting this parameter to "1" will result in minimum 4th function speed.

P1.18 4th Function Out Speed

This parameter allows the user to adjust the maximum 4th Function Out speed. The setting range is frm 1 to 9. Setting this parameter to "9" will result in maximum 4th function speed. Setting this parameter to "1" will result in minimum 4th function speed.

P1.40 Sideshift Speed Free

This parameter allows the user to adjust the maximum sideshift speed when the mast is raised above freelift position. The setting range is from 1 to 9. Setting this parameter to “9” will result in maximum sideshift speed. Setting this parameter to “1” will result in minimum speed.

OPERATOR PASSWORDS

The operator passwords are stored in a directory which can be accessed from this menu. The supervisor can add, edit, or delete operator passwords and clear the Operator Log from this menu. See Table 6. Scroll through the Password menu using the UP (#1) and DOWN (#3) buttons and press the RIGHT (#2) button to enter the desired selection. Press the LEFT (#4) button to return to the previous menu.

- **Password** - In the password display, you are allowed a five digit password utilizing the numbers 1 through 5 (zero is not a valid number). Values between 11111 and 55554 are valid.
- **Alphanumeric Name** - In the password display, you are allowed characters to insert a name. All characters and numbers are allowed. Use the UP (#1) and DOWN (#3) buttons to scroll through the characters and press the Enter (#5) button to enter the desired selection.
- **Mode Limit** - For each password, you can set the maximum performance mode allowed. The performance mode is set under the "M" character of the password display. The number correlates directly to the performance modes 1 through 4, plus "A" = all.
- **User Type** - For each password, you can set the access level or "User Type" under the "U" character. The "O" is selected for operator, the "S" for supervisor and the "T" for the technician (service).

NOTE: A total of 100 passwords can be setup. Multiple passwords can be setup for either service, operator, or supervisor but all have to be unique for each.

NOTE: Parameter in Display "Perform Enable" set to:
0 = Off, Operator can choose to set performance mode.
1 = On, Operator is limited to the set performance mode only.

Table 6. Operator Password Menu

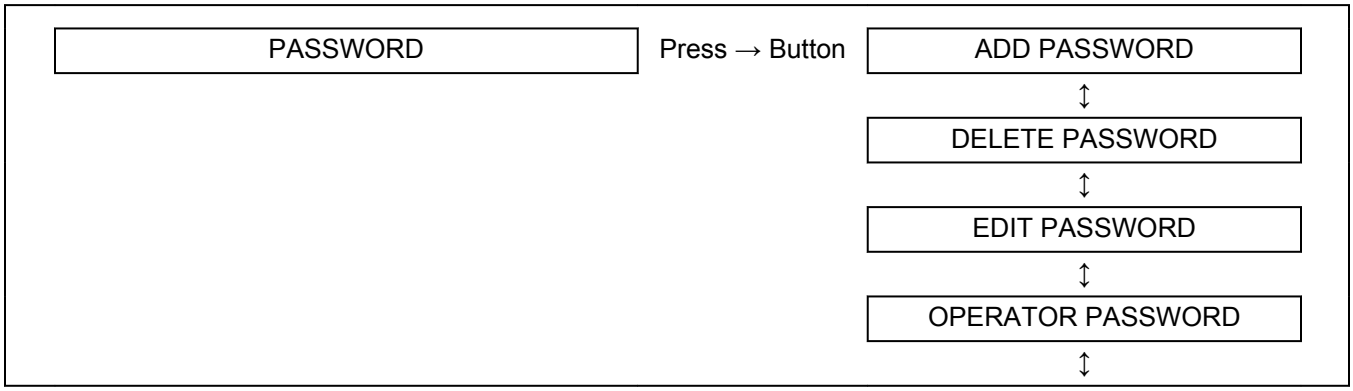


Table 6. Operator Password Menu (Continued)

	CLEAR LOG

Add Password

Use this menu to add operator passwords. To enter a new password at the Passwords screen, enter the password to be added and press enter to activate.

Delete Password

Use this menu to delete operator or supervisor passwords. To delete a password at the Passwords screen, enter the password to be deleted and press enter to finalize.

Edit Password

Use this menu to edit operator passwords. To edit a password at the Edit Passwords screen, enter the password to be edited and press enter to select. Change the password and press enter to select.

Operator Password

Use this screen to turn the operator password feature ON or OFF.

Clear Log

Use this screen to clear all stored information from the operator log.

OPERATOR LOGS

An operator log is created when a new user password is created. Logs are visible at the supervisor and service technician levels. 150 logs are available at a time. See Table 7. Scroll through the Operator Logs menu using the UP (#1) and DOWN (#3) buttons and press the RIGHT (#2) button to enter the desired selection. Press the LEFT (#4) button to return to the previous menu.

Operator 1-150

Shows the number of hours the selected operator has operated the truck. Accumulates time when the key switch is in the **ON** position and the operator presence switch is activated.

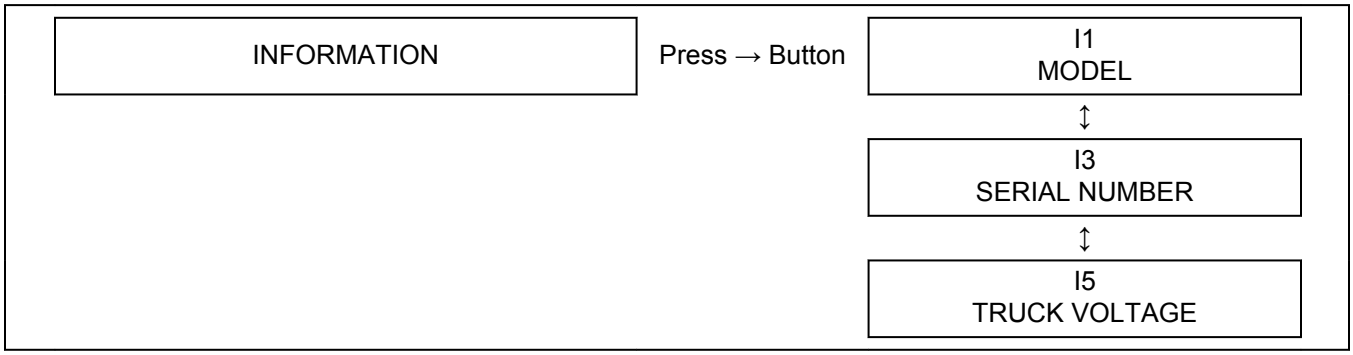
Table 7. Operator Logs Menu

OPERATOR LOGS	Press → Button	L 1
		↕
		L 2
		↕
		L 3
		↕
		L 150

INFORMATION

The Information menu displays specific information about the lift truck. The parameters are installed at the factory and cannot be changed. Scroll through the Information menu using the UP (#1) and DOWN (#3) buttons and press the RIGHT (#2) button to enter the desired selection. Press the LEFT (#4) button to return to the previous menu.

Table 8. Information Menu



I1 Model

The Model parameter displays the model of the lift truck and does not have any functions. It is for information only.

I3 Serial Number

The Serial Number parameter displays the serial number for the lift truck and does not have any functions. It is for information only.

I5 Truck Voltage

The Truck Voltage parameter displays the voltage of the lift truck and does not have any functions. It is for information only.

SOFTWARE VERSIONS

Displays truck software version. This truck automatically coordinates the software of all nodes. One software version number is used to indicate the total truck software.

Table 9. Software Versions

SOFTWARE VERSIONS	Press → Button	V1 TRUCK

NOTES