SERVICE & PARTS MANUAL
CSP15
SPM-625

Walkie Stacker
w/Reach and Tilt Feature

3000 lb Capacity
April 2005

TABLE OF CONTENTS

6. Optional Instruments - Operation

Optional Instruments

ITEM	PART NO.	DESCRIPTION
1	032-211	Hour meter
2	032-229	Combo BDI-hour meter
3	032-244	BDI with lift lockout
4	032-256	**Combo** BDI-hour meter
5	026-511	Combo BDI-hour meter with lift lockout
		Harness for 026-511

6.1 Hour Meter

The Hour meter is activated by the control handle and records actual run time of the drive motor.

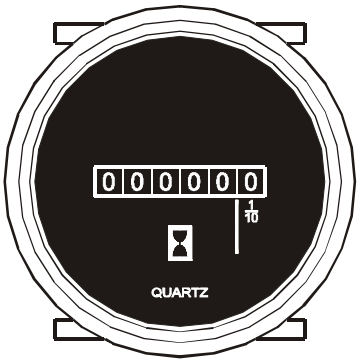


Figure 7 : Typical Hour Meter

6.2 BDI and Hour Meter

The display of the Battery Discharge Indicator (BDI) / Hour Meter is activated by the control handle and records actual run time of the drive motor. In addition, when the handle is in the driving position the accumulation of time is indicated by the flashing of an hourglass icon.

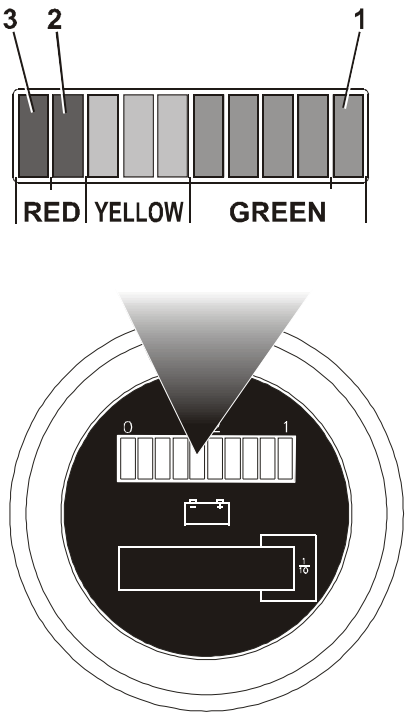


Figure 8 : Typical BDI/Hour Meter Indicators

The functioning of the red, yellow and green Light Emitting Diode (LED) display on the BDI/Hour Meter is as follows:

1. The far right LED (1.) will illuminate to indicate a proper full charge.

2. As the battery's state-of-charge condition decreases, the number of lit LEDs will also decrease.

3. At the next to last position (2.), this LED flashes indicating an "energy reserve" condition. This indicates a state-of-charge condition of approximately 70% of discharge.

4. At the empty point (3.), the 2 LEDs at the far left will alternately flash indicating a state-of-charge condition of approximately 80% discharge.

If the power is disconnected from the indicator by pressing the Emergency Stop Button during charging, the unit will reset at 2.09 volts per cell.

If the indicator remains connected during charging, a voltage of 2.35 volts per cell must be maintained in excess of 6 minutes in order to rest the unit.

6.3 BDI/ Hour Meter w/Lift Lockout

Some units may be equipped with a battery discharge indicator that may include a lift lockout feature. When the battery is severely discharged, the lifting circuit will automatically be disabled. To avoid this, the operator must return the unit for charging after the last light / bar is activated. The travel circuit will remain operational to return the unit to the charging area. Although, several different style meters are available as options, their basic functions are identical.

The lift lockout feature will ensure that the battery and electrical components are not subject to premature wear due to operating with a discharged battery. Always check the battery indicator, if equipped, in the event that the lifting circuit is not operational. General operation of a battery discharge indicator with or without the lift lockout feature, if equipped, is outlined on the drawing below.

6.4 BDI/ Hour Meter

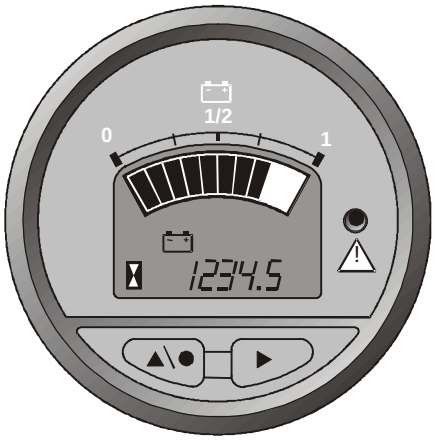


Figure 9 : BDI/Hour Meter

This multiple function meter monitors the state-of-charge condition of the batteries and total run time of the motor. As the battery's state-of-charge condition decreases, the number of darkened bars in the Liquid Crystal Display (LCD) will also decrease. The numerical display can also be configured to display the time of day and duration of time remaining until the next maintenance interval is reached.

The "▲\●" button is used to toggle the numerical display sequentially between clock, maintenance hours, and total hours.

When the "▲\●" button is pressed and held the clock and maintenance hours can be set by using the "▶" to increment the numerical display to the desired setting and using the "▲\●" button to move sequentially across digits. Pressing the "▲\●" once after the desired settings have been inputted or if the meter receives no input after 30 seconds, the meter will return to normal operation mode.

When the battery has reached a severely discharged condition, the warning indicator LED "⚠" will illuminate and the BDI portion of the LCD display will show only one bar. To avoid this, the operator must return the unit for charging before the LCD display shows less than 20% (2 bars darkened) of charge. To preserve battery life, the battery should never be allowed to reach a condition of more than 80% of discharge before recharging.

7. Drive Unit & Brake

WARNING! : BEFORE INSPECTING ANY PART OF THE DRIVE ASSEMBLY, DISCONNECT MAIN BATTERY POWER AND DEPRESS HORN SWITCH TO DRAIN RESIDUAL CONTROLLER CHARGE

1. Disconnect (Isolate) the battery by depressing the Emergency Stop Button *(Refer to Item 4, Section 4.1 : Controls and Instruments)* or by disconnecting the SB battery connector.

The traction motor has sealed bearings and requires no external lubrication.

2. Check the condition of the drive belt and adjust the tension if necessary. The belt is correctly tensioned when a 10 lb. force applied midway between the two sprockets causes a deflection of 3/16".

3. Check belt for unusual wear which may indicate incorrect pulley alignment.

4. To install a new belt; reduce tension, remove the old belt, install the new belt and re-adjust the tension to achieve the deflection indicated. Rotate the belt manually by hand for several revolutions and recheck tension after all fasteners have been tightened.

8. Mast and Carriage

1. Check the condition and wear of all channel/chain rollers on a monthly basis and replace if necessary.

2. Lubricate the points as shown in *Figure 10 : Lubrication Points - Body and Mast*. For best performance lubricate monthly.

3. Lubricate the points shown in *Figure 11 : Lubrication Points -Reach and Tilt Carriage.*

4. Periodically remove the lift chains and wipe clean with dry cloths. DO NOT use chemical degreasing agents. Carefully examine the chain links, pins and clevises for damage, wear or stretch and replace them if any evidence of either is found. Use a paintbrush, recoat the chains with SAE 10 motor oil, or suitable chain lubricant. Adjust the chain tension so that with the carriage fully lowered, the chains are equally taut but not supporting the carriage.

5. Check the upper limit mechanical stops for damage and repair or replace. Damage to these stops could be an indicator of a more serious problem in the lift cylinder.

9. Hydraulic Adjustments

9.1 Lifting Pressure

The hydraulic relief valve assembly controls the maximum hydraulic system pressure. The pressure relief is factory set and adjustment will be required only if a new valve assembly is installed. For operator safety adjustment to any of these components must be made by a qualified service representative only.

9.2 Lowering Speed:

Lowering speed is factory set for safe lowering and should never be changed for safety reasons. For operator safety during valve replacement, adjustment to the lowering speed must be made by a qualified service representative only.

10. Planned Maintenance

Spotting trouble before it happens can prevent costly down-time and extensive repairs and make it possible for service and repairs to be performed when the unit is not required for regular operations.
Inspection intervals outlined are for normal single shift use and conditions. More frequent inspections are necessary for adverse conditions such as: rough floor conditions, temperature extremes, several operators, multi shift use, dusty atmosphere, etc.

Failure to adhere to a Planned Maintenance Schedule could void the owners warranty and/or seriously affect the owners right to claim.

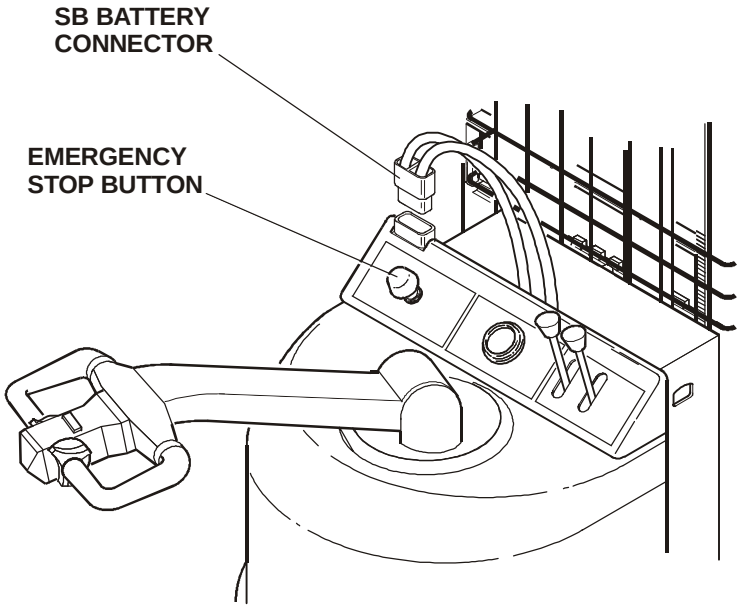
In addition, establishing a regular planned maintenance schedule of a stacker in certain industries may be requirement in order to comply with government regulations.

INSPECTION INTERVALS

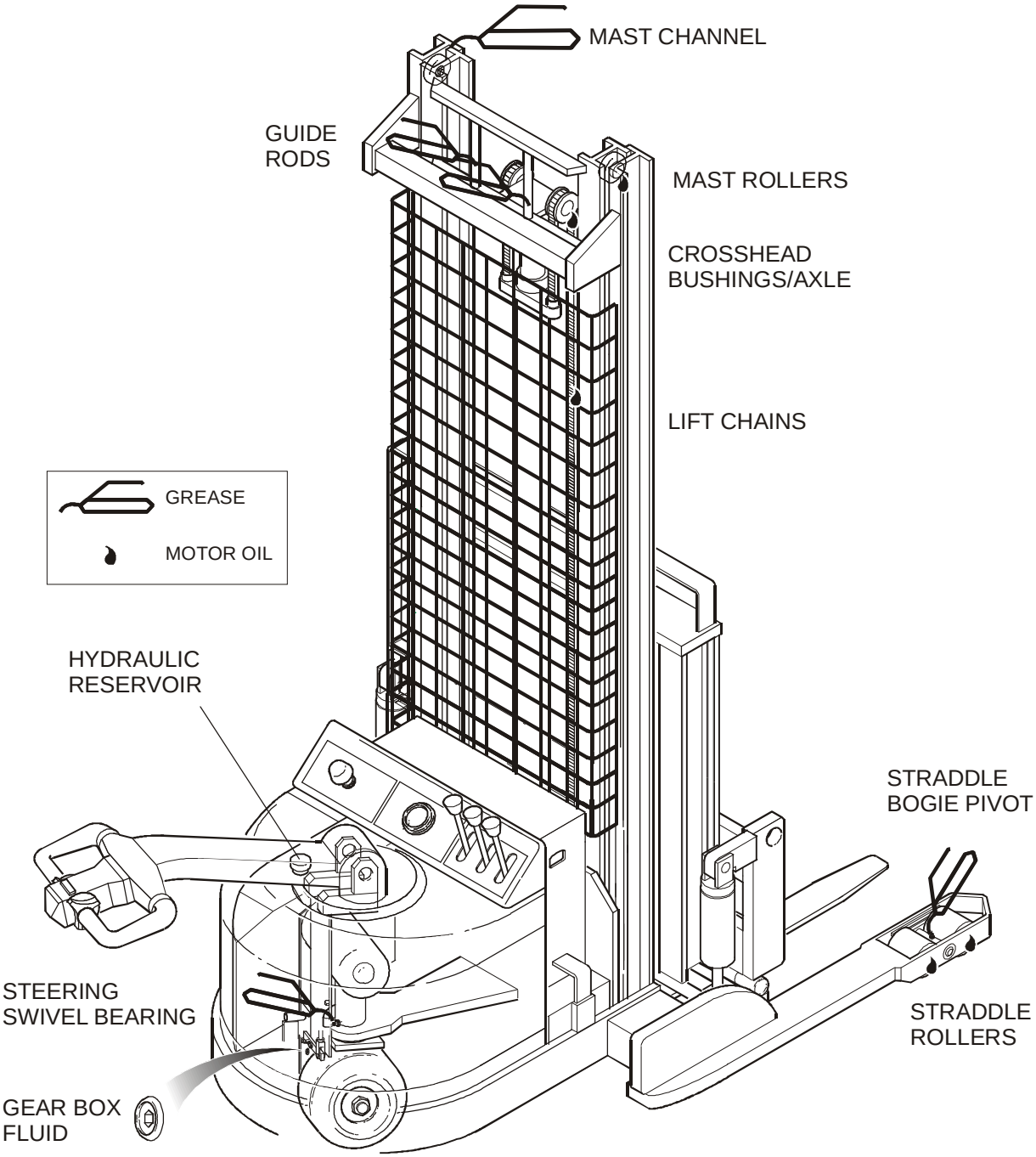
DAILY:
All Operating Controls (SAFETY)
Battery Charge
Brake Operation

QUARTERLY:
Electrical System
Hydraulic System
Drive Unit & Mechanical Parts

WARNING! : DISCONNECT THE BATTERY (BY PRESSING THE EMERGENCY STOP BUTTON OR BY DISCONNECTING THE SB CONNECTOR)AND DEPRESS HORN SWITCH TO DRAIN CONTROLLER RESIDUAL CHARGE BEFORE ATTEMPTING ANY TYPE OF INSPECTION OR SERVICE



10.1 Lubrication Points



Note: Ball Bearing Style Rollers do NOT require lubrication.

Figure 10 : Lubrication Points - Body and Mast

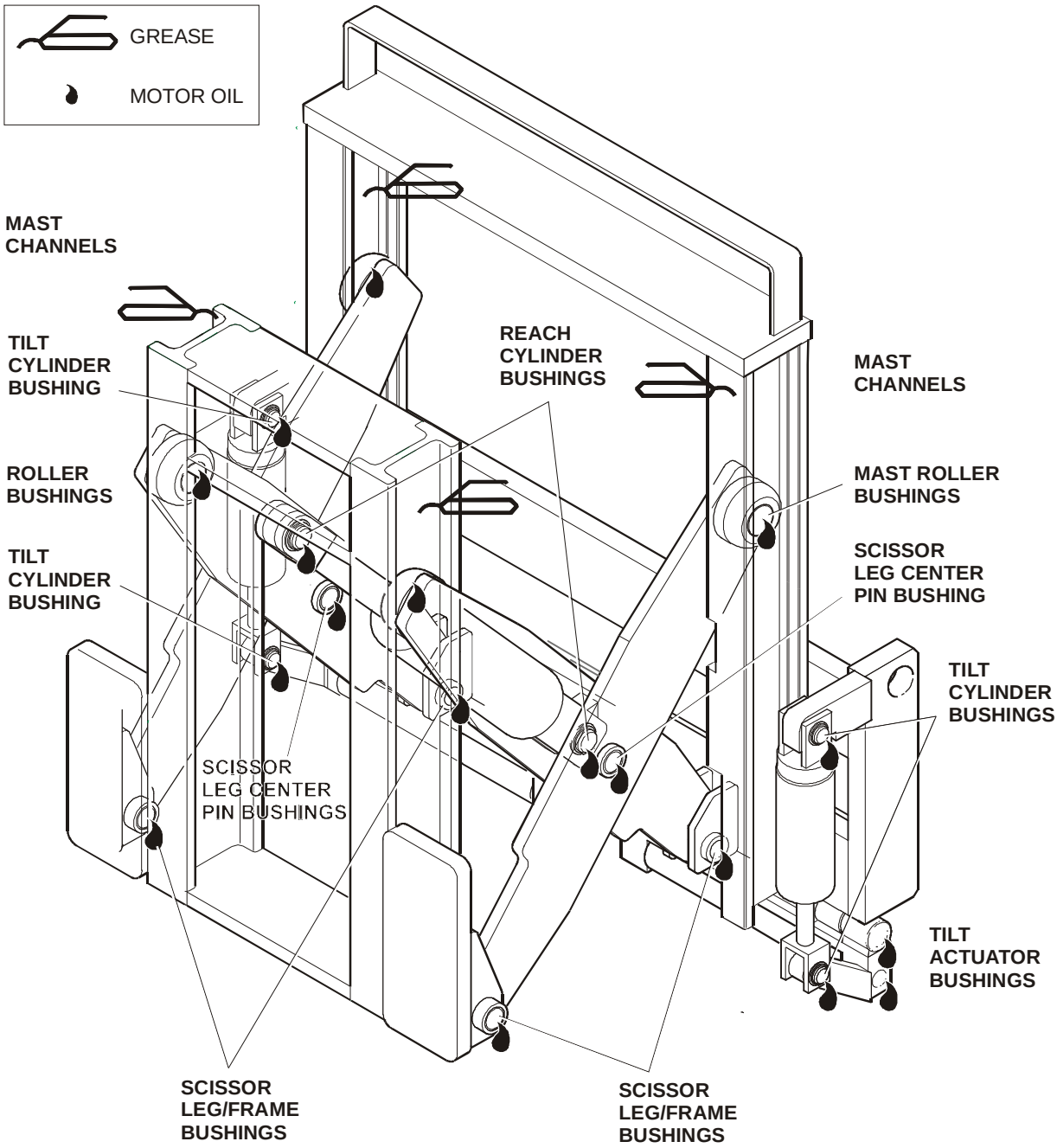


Figure 11 : Lubrication Points - Reach and Tilt Carriage