SPARTAN INSTRUMENTATION OPERATORS GUIDE
1. **INTRODUCTION**

This operator’s guide provides the information needed to operate and understand the Medallion Instrumentation System installed on Spartan Chassis.

Although Spartan chassis are equipped with many different types and styles of analog gauges, the system configuration for all chassis is the same and the data presented in this guide is applicable to all chassis equipped with the Medallion Instrumentation System.

The instrument system consists of 3 major components:

- An Annunciator Module that concentrates all of the warning and indicator lights in one area to facilitate efficient visual scanning of the panel. The Annunciator is illustrated as Item-1 in Figure-10.

- An assortment of individual analog style gauges that display the instantaneous value of specific performance parameters at a glance. The gauges are illustrated as Items 1 through 9 in Figure-1.

- An Interactive Graphical Information Center Display that is capable of communicating more detailed information about the status and performance of the vehicle as needed. The Information Center is illustrated as Item-11 in Figure-1.

The location of these components in the dash may vary from vehicle to vehicle.
2. WARNING AND INDICATOR LIGHTS

The Annunciator Module contains the following warning and indicator lights:

- Green *Right* and *Left Turn Signal* indicators, in positions 1 and 12, which flash on and off when the outside turn signals are flashing.

- A amber *CHECK ENG* warning light, in position 3 will come on at the request of the engine ECM. See the Caterpillar or the Cummins operation and maintenance manual for more information.

- A red *STOP ENG* warning light, in position 4 will at the request of the engine ECM. See the Caterpillar or the Cummins operation and maintenance manual for more information.

- An amber *WAIT TO START* Indicator, in position 5, that illuminates when intake-air pre-heater is on.

- A blue High-Beam indicator, in position 6, that illuminates when the headlights are on high beam.

- A green *CRUISE ON* indicator, in position 7, which illuminates when the Cruise Control is on.

- A red *CHECK TRANS* warning Light, in position 8, that will come on during vehicle operation if the Transmission ECU (electronic control unit) has broadcast a diagnostic fault code. Diagnostic codes indicate malfunctions in transmission operation. If this light stays on continuously during operation, have the transmission serviced as soon as possible.

- A red *SHIFT INHIBIT* warning Light, in position 9, that illuminates when the Transmission ECU (electronic control unit) is prohibiting shifting.

- A red *LOW AIR* warning Light, in position 10 that comes on when the air pressure in the air tanks falls below 65 PSI. The warning light will normally come on when you first start the engine, but will go off when the air pressure in the air tanks reaches approximately 65 to 76 PSI.

- An amber *ABS* Warning Light in position 11. The *ABS* Warning Light illuminates when the vehicle is started as a self-test. If an ABS fault has been cleared, the vehicle...
speed must exceed 7 mph (10 km/h), for the light to go off if the ABS system is functioning normally.

**IMMEDIATE REPAIR**

If the ABS warning light does not work as described above or comes on while driving, repair the ABS system immediately to ensure full antilock braking capability. Operating the vehicle when the ABS needs to be serviced could cause an accident, possibly resulting in property damage, personal injury or death.

- A red *ENG PROT* warning light, in position 16 will at the request of the engine ECM. The engine is in a power down mode to protect itself. See the Caterpillar or the Cummins Operation and Maintenance Manual for more information.
- An amber *CHECK INFO CENTER* indicator, in position 18, that illuminates when the Info Center is displaying an Alarm Condition or Warning Message.
- A red *PARK BRAKE* indicator light, in position 23, that illuminates when the parking brakes are engaged and the ignition switch is in the *ON* position.
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**IMPORTANT:** When the ignition is turned on all of the Indicator Lights will illuminate for approximately 3 seconds to allow the operator to perform a bulb check.

### 3. GAUGES

**1-9 Air Pressure Gauges**

**IMPORTANT:** Two separate air pressure gauges indicate air pressure in the primary and secondary air systems. See Figure-1 Items 1 and 9. Build up air pressure in both systems between 95 and 120 psi (620 to 827 kPa) before moving. It is normal to observe fluctuation in these gauges during operation of the vehicle. An alarm will sound if the pressure drops below a safe operating range.

*“Caution”* Build up air pressure in both systems between 95 and 120 psi (620 to 827 kPa) before moving. It is normal to observe fluctuation in these gauges during operation of the vehicle. An alarm will sound if the pressure drops below a safe operating range (65PSI).

**2 Engine Oil Pressure Gauge**

The oil pressure gauge should read in the normal range. See Figure-1 Item-2. See the engine Operation and Maintenance Manual for normal range of operation.

◆ **ATTENTION !◆**

A sudden decrease or absence of engine oil pressure may indicate mechanical failure. Bring the vehicle to a safe stop and turn off the engine. Do not operate the engine until the cause has been determined and corrected.
3 Fuel Gauge
The fuel gauge indicates the amount of fuel in the fuel tank. See Figure-1 Item-3

4 Trip Reset
See Speedometer/Odometer for operating instructions.

5 Tachometer
The tachometer indicates the revolutions per minute (rpm) of the engine.
See Figure-1 Item-5.

6 Speedometer/Odometer
The speedometer registers vehicle speed in miles per hour or kilometers per hour (mph/kph). See Figure-1 Item-6. Standard speedometers are equipped with a combination odometer/trip odometer that records total distance traveled and trip distance. Resetting the trip odometer will erase the current display and start counting at 0000.0 miles. A short press of the trip reset (less than 3 seconds) will toggle the display between trip mode and odometer mode. A long press of the trip reset (greater than 3 seconds) while in trip mode will reset the trip odometer. The trip odometer can also be reset using the Information Center (See Section 5). The odometer in the gauge will be displayed with six numbers and no decimal (000000), while the trip odometer will be displayed with 4 numbers and one decimal (0000.0).

7 Coolant Temperature Gauge
During normal engine operation, the coolant temperature gauge should read in the normal range. See Figure-1 Item-7. If the temperature remains below or exceeds the normal range, inspect the cooling system to determine the cause. See the engine Operation and Maintenance Manual for normal range of operation.

8 Voltmeter
The voltmeter indicates the vehicle charging system voltage when the engine is running and the engine starting battery voltage when the engine is stopped. See Figure-1 Item-8. By monitoring the voltmeter, the driver can become aware of potential charging system problems and have them repaired before the batteries discharge enough to create starting difficulties. The voltmeter should indicate voltage in the normal range when the engine is running. The voltage of a fully charged battery is 12.7 to 12.8 volts when the engine is stopped. A completely discharged battery will produce only about 12.0 volts. The voltmeter will indicate lower voltage as the vehicle is being started or when electrical devices in the vehicle are being used. If the voltmeter shows an undercharged or overcharged condition for an extended period, have the charging system and batteries checked at a repair facility.

NOTE: Some vehicles may be equipped with a battery isolator system and a gel cell battery by the body builder. On these vehicles, the voltmeter measures the average voltage of all of the batteries when the engine is running. When the engine is stopped, the voltmeter indicates only the engine starting batteries.
Transmission Temperature Gauge (optional)

The transmission temperature gauge indicates the temperature of the transmission oil. See the transmission Operation and Maintenance Manual for normal range of operation.

◆! CAUTION ◆

If the transmission continues to overheat during normal operation, have it checked and repaired. Continued operation may cause damage to the transmission.

4. **AUDIBLE ALARMS**

The Instrumentation System provides for the following Audible Alarms:

- A rapidly pulsating buzzer sounds anytime the red *STOP ENGINE* Warning Light is illuminated.
- A rapidly pulsating buzzer sounds anytime the red *LOW AIR* Warning Light is illuminated. On the air system, the *LOW AIR* light/buzzer activates when the system air pressure is low. The light/buzzer will normally come on when you first start the engine, but will go off when the air pressure in the air tanks reaches approximately 65 to 76 psi (448 to 524 kPa). The parking brakes will not disengage until the air pressure has reached 65 psi (448 kPa).

At key on the buzzer sounds for 3 seconds to indicate that the system is operating correctly.

5. **THE INFORMATION CENTER**

**Introduction**

The Info Center is an interactive Liquid Crystal Graphical Display that is capable of displaying text messages and graphics to communicate vital real-time information about the status and performance of the vehicle to the operator. This information is organized in a menu driven format.

**Power On Initialization**

When the ignition is turned on, the Info Center will illuminate with the Spartan Logo then display the Home Screen or the Favorite Screen if a favorite screen is set up (See screen road map).
Navigating the Menu Screens

The menu structure is navigated using six buttons located on the face of the Info Center. The names and functions of the navigation buttons are:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬆️</td>
<td>Scroll Up</td>
<td>Highlights the line above</td>
</tr>
<tr>
<td>⬇️</td>
<td>Scroll Down</td>
<td>Highlights the line below</td>
</tr>
<tr>
<td>⏽️</td>
<td>Enter</td>
<td>Selects highlighted line</td>
</tr>
<tr>
<td>⏱️</td>
<td>Toggle</td>
<td>Cycles through screens within a menu</td>
</tr>
<tr>
<td>⚡️</td>
<td>Red Button</td>
<td>Jumps to Favorite Screen</td>
</tr>
<tr>
<td>🏡</td>
<td>Home</td>
<td>Returns to the previous menu</td>
</tr>
</tbody>
</table>

Menu Structure

The menu structure is organized around 3 Top Level Menu Screens, the Home Screen, the Setup Screen, and the Alarm Screen. Each of these screens contains lists of Sub-Menu screens that may be accessed by highlighting the desired Sub-Menu and pushing the Enter Button.

1. Home Screen Features

- The following Real Time Trip Computer Data is found in the Trip Computer and Trip Meter Sub-Menus of the Home Screen:
  - Instantaneous Fuel Economy
  - Average Fuel Economy
  - Fuel Remaining
  - Odometer
  - Multiple Trip Odometers

- The following Vehicle Performance Data is found in the Engine Sub-Menu of the Home Screen:
  - (E – Info) A screen that simultaneously displays Speed, RPM, and Gear
  - RPM
  - Speed
  - Engine Temperature
  - Oil Pressure
  - Battery Voltage

- Service and Diagnostic Screens are found under the Service Sub-Menu of the Home Screen. This is password protected Sub-Menus are for Spartan Dealer use only.
Menu Structure Continued

1. Setup Screen Features
   From the Setup Screen you can:
   • Adjust the contrast of the display
   • Switch between English and Metric Mode
   • Designate a Favorite Screen that the display will jump to when the ignition is
turned on or when you push the Red Button. The Clock Display is the default.

2. Alarm Screen Features
   ➢ Alarm Sub-menu
     Alarm Messages have priority over other display screens. Pushing the “E” button
temporarily clears the alarms. But if the alarm is still active after 5 minutes, the
Info Center will display the Alarm Screen again.
   • Time/Date Sub-menu
     This sub-menu allows you to set the clock.

Changing from English to Metric scale

   • Press “H” to get to the Home screen
   • From the Home Screen press “T” to get to the SETUP menu.
   • With the SETUP menu highlighted, press “E”
   • Press the down arrow to highlight the “Units ENG”.
   • Press the “E” button to make the highlighting flash.
   • Press up or down arrow once to change “ENG” to “MET”
   • Press “E” to accept change.
   • All displays will now display in the Metric format.

Menu Structure Roadmap

The menu structure road map is provided below that illustrates the screens that are available in the Info Center, the path to specific screens, and the details of each individual screen. Comments are included where necessary for added clarification.
Use the "UP" or "DOWN" arrows to highlight the desired menu option. To enter the selected menu option press "E". To return to the previous menu, press "H".
Trip Center Submenu

Average Economy 8.0

Instant Economy 12.3

Fuel

Back to Average Economy

Trip Meters Submenu

Tripmeter 1

Tripmeter 2

Odometer

Trip Center Trip Meter Screen Detail

Tripmeter1 is the same as Trip odometer in the Gauge LCD display. They can both be reset by remote trip reset switch and Info Center

"E" must be held until the Trip Odometer resets

Tripmeter2 is only displayed and reset in the Info Center

Back to Average Economy

Back to Tripmeter 1
Engine

Battery
8 13 18
Normal

Oil Pressure
0 80
Normal

Engine Temp
80 240
Normal

Engine RPM
0 4000
2300 RPM

Road Speed
0 85
55 mph

E - INFO
55 mph
2300 rpm
3rd GEAR

Service

Diagnostics
Fault Codes

ENTER PASSWORD
0000

This password is for Spartan use ONLY!
Setup Submenu

Contrast
- Pressing "E" causes highlight to flash.
  Pressing arrows will change value from 1 to 20 for contrast level.

Units
- Pressing "E" causes highlight to flash then the arrows allow change from English to Metric

Favorite
- Pressing "E" allows user to select which screen the system will start on every time the system powers up or when the red button is pushed.

Vehicle

Example Screen

Contrast 12
Units ENG
Clock

Setup screen:
From this screen you can:
1. Adjust the contrast level
2. Change between English/Metric mode.
3. Select which screen you would like the system to power up with.
4. Factory screens
Clock set screen

Time/Date

AM/PM

Seconds

Month

Day

Year

"E" selects category to the left. When "SET" appears arrows will adjust value. "E" to accept.

Example
Screen

01:42: AM
12 / 18 / 2002
The alarm screens indicate:

1st The item in alarm state
2nd Current value
3rd The threshold that needs to be met to eliminate the alarm.