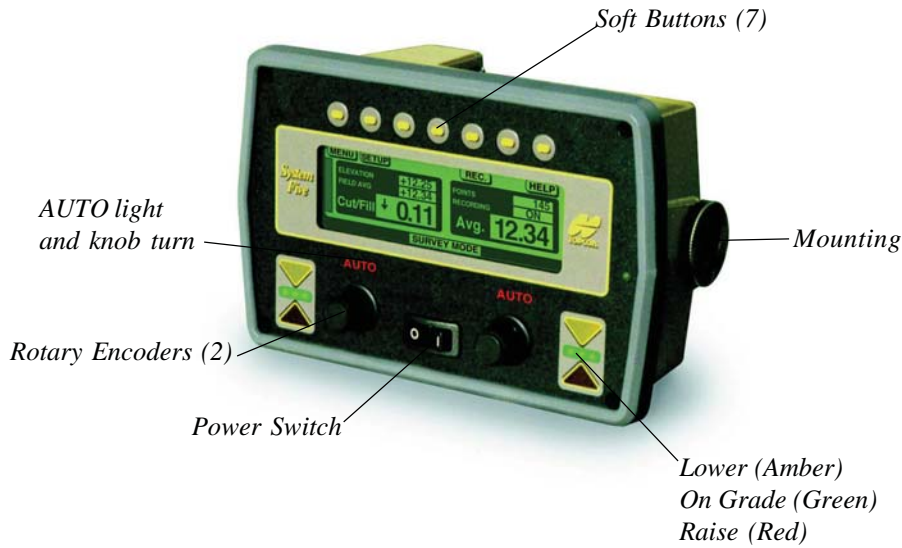
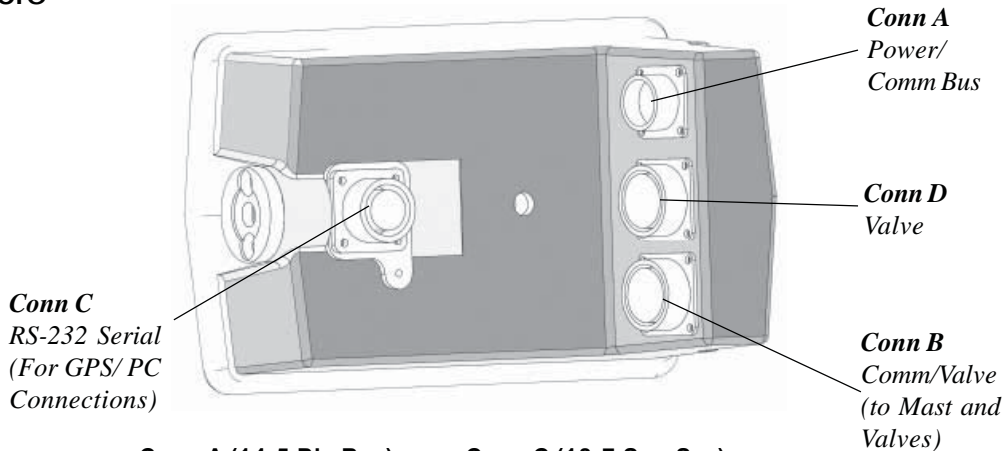


System Overview

General



Connectors



Conn A (14-5 Pin Bay)

A	Batt Unswit
B	Buf Clk
C	Buf Data
D	V Suply
E	Gnd

Conn C (18-7 Soc Scr)

A	RX
B	TX
C	RTS
D	CTS
E	Batt Unswit
F	V Swit
G	Gnd

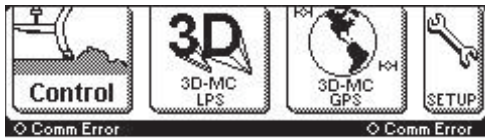
Conn B (18-11 Soc Bay)

A	Comm A
B	Comm B
C	V Swit
D	Gnd
E	Motor/Valve Power
F	Motor/ Valve Gnd
G	Raise (Front / Left)
H	Raise (Rear / Right)
J	Lower (Front / Left)
K	Lower (Rear / Right)
I	None

Conn D (18-11 Soc Bay)

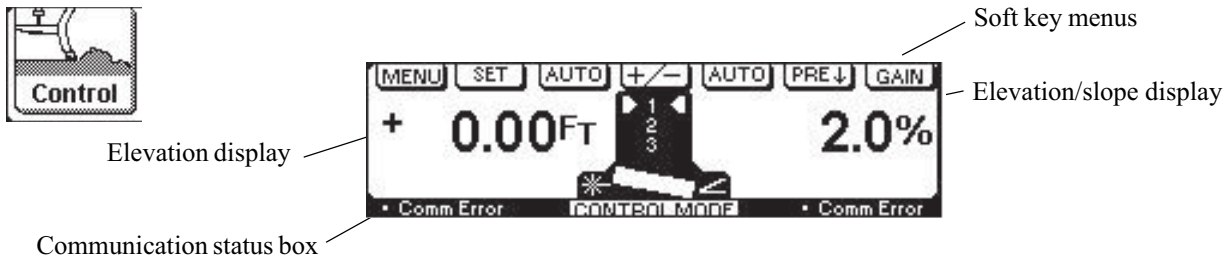
A	Valve Power
B	Valve Power
C	Gnd
D	Gnd
E	Gnd
F	Gnd
G	Raise (Front / Left)
H	Raise (Rear / Right)
J	Lower (Front/Left)
K	Lower (Front/Right)

Dozer Control modes



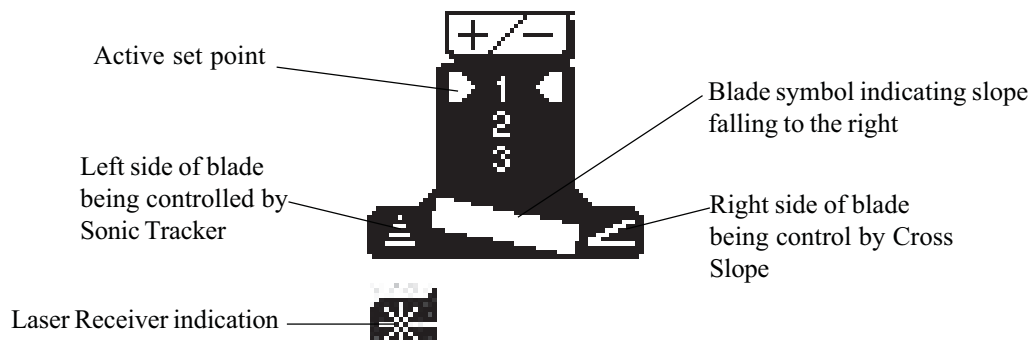
When the 9164 is first powered up, the control option screen is displayed. This screen allows the operator to select either standard control, LPS control or GPS control. The next few pages will discuss each of the control options.

Standard Control



The standard control screen will allow the operator to either control his machine using dual elevation or a combination of elevation control along with slope control. The control screen is split into two separate displays. The Left display will always control an elevation device whereas the Right screen can either control an elevation sensor or a slope sensor, as shown in the display above.

In the center of the display, you will see a symbol of the dozer blade. This symbol gives the operator a visual indication of the direction of blade slope. On either side of the blade symbol you will see another symbol indicating which type of sensor is being used (Tracker, Laser receiver or Slope sensor). In the center of the display an indication of which set point is active (see the section regarding set points for more details).



Soft Key menu items



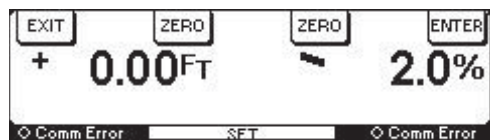
The menu items located at the top of the control box display can be accessed using the soft keys located directly above the menu item. The next few pages will cover each of the soft key menu functions.

Menu Key

Selecting the MENU key will change the display back to the main control selection screen

Set key

The SET key located above the left display has two functions. The first function is used to change the reference number viewed on the display to a desired value. Using set will not change the grade or elevation, only the reference number viewed. By turning the left grade knob the operator can set the display to the desired reading. The second function is used to calibrate the slope sensor. The operator would start by manual placing the blade on some known grade, then using the right grade knob, adjust the slope display until the display indication is the same reading as the blade. After any changes are made to either display the operator must select ENTER. If EXIT is selected the changes will not be stored.




Auto key

There are two AUTO keys, one located on the left side of the display and the other located on the right. When the auto key is selected the red Auto symbol above the grade knob will begin to flash. This indicates the systems autos are armed and can be activated by simply switching the single remote switch on, giving the operator a single switch that will control both left and right.

+/- key 

The +/- key will allow the operator to change the direction of slope with a single push of a button.



Set point key 

The set point key allows the operator to select between the three set points. (See the setup section for information on how to access the set points)

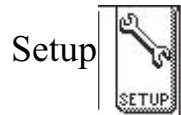


Gain key 

By selecting the GAIN key the operator can make adjustments to the left or right valve while still under full automatic control. The right control knob will make adjustments to the right elevation valve and the left grade knob will make adjustments to the left slope valve. The number displayed below the elevation or slope display number, is the gain setting. In the example below the elevation gain is 53 and the slope gain is 14.



Machine Setup and Calibration

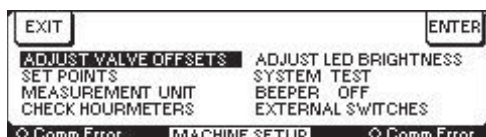


The SETUP menu is where all the machine setup is performed. Prior to making any adjustments in the Setup menu, the Topcon service rep will need to set the Maximum current setting for the largest valve being used. The max current setting is located in the Technicians Menu. (Refer to the technicians manual 7010-0364 for detailed information) Located in the back of this manual, a listing of all the valves Topcon supplies in their dozer kits is available. Each valve has the max current rating listed. The max current setting should be set to match the rating of the largest valve being used. ***NOTE* All Released System Five Dozers Systems Should Be Configured For Source Current, Unless a Danfoss Valve Is Used (See notes on Page 3).***

This section will cover all the setup menu options as well as machine calibrations.

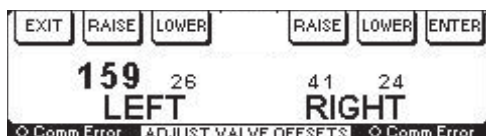
- 1 Confirm External switch selection (Topcon rep/operator)
- 2 Maximum valve current setting (Topcon service rep only)
- 3 Adjust valve offsets (Topcon rep/operator)
- 4 Blade slope calibration (Topcon rep/operator)

Setup Menu



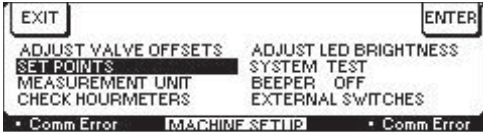
Adjust Valve Offsets

This adjustment sets the minimum signal required to operate the hydraulic valve. Start by raising the dozer blade off the ground. With the engine at full throttle select either the raise or lower soft key for the elevation valve (Left). Using the left rotary knob dial the number to 0. Slowly increase the number until the blade just begins to move. Set the other three in the same manner then select ENTER. Selecting Exit will not save any changes.



Set Points

The SET POINT selection will allow the operator to select the number of active set points. The control box is sent from the factory without any set points active. Once the operator has selected the desired number of set points they are able to step through the set points by pressing the **[PRE↓]** Key. The display in the center of the screen will indicate which set point is active.



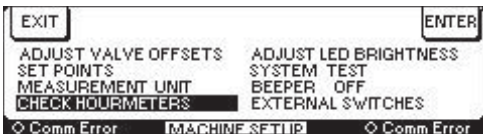
Measurement Units

The MEASUREMENT UNIT allows the operator to change the elevation display from Feet to Meters.



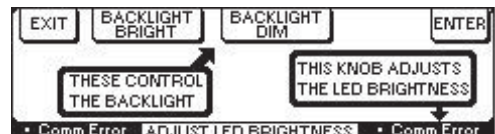
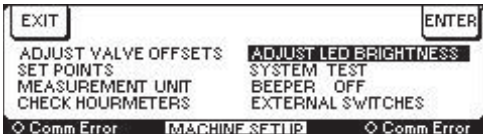
Check Hourmeters

The system has two hourmeters built in. By selecting the Check Hourmeters under the menu screen, the system will display both hours On and Hours On in Automatic.



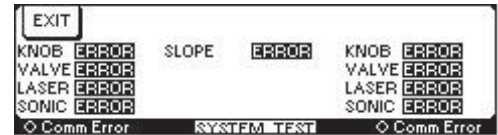
Adjust Led Brightness

By following the on screen directions, the operator can adjust the Back Light as well as the Brightness of the LED's



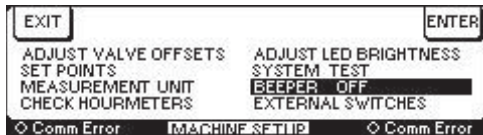
System Test

The system test has been developed to give the operator an easy way of looking at the attached components. At any time the operator sees a Comm Error which will appear below one of the displays in normal Control Mode, they should enter the Test Mode. If a sensor is not connected the message following the sensor description will indicate ERROR.



Beeper On

By highlighting the BEEPER selection and pressing Enter the Beeper can be toggled on or off. The system has a built-in audible feature that will sound when an elevation reference is lost.



External Switches

The System Five control box can either work with Topcons Smart Knobs or a standard contact closure switch. For dozer applications Topcon supplies an A/M switch which would be considered a Simple switch. The External switches menu allows the operator to select the type of switch being used. The factory default for dozer applications will be simple switch.

