



**Valley AutoPilot
Control Panel
Advanced Features Manual
For
Software Version 2.00
0998907_A**



Valley AutoPilot Control Panel

Valley AutoPilot Control Panel

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About This Manual

Information contained in this manual applies to all Valley AutoPilot Control Panels with software version 2.00.

Specifications, descriptions, and illustrative material contained herein were as accurate as known at the time this publication was approved for printing.

Additional information is contained within the Valley AutoPilot Control Panel Owner's Manual, part number 0998901 (English).

About The Control Panel

The Valley AutoPilot control panel is for use with Valley Universal Linear, Valley Linear, Valley Two Wheel Linear, Two Wheel Linear Swing Around, Four Wheel Linear Swing Around, Valley Four Wheel Linear Swing Around, Valley Single Span Linear, and Valley Single Span Linear Swing Around.

Valmont Industries Inc. reserves the right to change specification or design without incurring obligation. Specifications are applicable to machines sold in the United States and may vary outside the United States.

Ancillary Equipment Warranty

The owner is responsible for warranty registration of all ancillary equipment such as engines, pumps, and generators with its respective manufacturer.

Valley AutoPilot Control Panel

System

System Screen

From the System screen the user can change settings or view information at anytime. The following functions can be accessed within the System screen:

- Constants
- Data
- Reset
- Review
- Cycle
- Transmit
- Language
- Hours

Press  to display the System screen. See figure 7-1.

0 EXIT	3 RESET	6 TRANSMIT
1 CONSTANTS	4 REVIEW	7 LANGUAGE
2 DATA	5 CYCLE	8 HOURS
PRESS NUMBER > 1		

Figure 7-1

Constants

Constants are the constant values that are unique to each individual irrigation machine when the machine and control panel are first installed. These values should be recorded on the Machine Constants form located in the Control Panel Setup section. The constants values are on four separate screens. See figure 7-2.

Constants Screen 1		Constants Screen 2	
TIME	Set time of day in 24 hour format.	MIN APP	Set minimum application rate at 100%.
DATE	Set current date.	HRS/REV	Set time per revolution at 100%.
SIS	Review and edit Stop-In-Slot settings.	VOLTAGE	Set current voltage.
END-GUN	Set end-gun ON/OFF positions.	WIDE BND	Set second end-gun ON/OFF positions.
POSITION	Set position of machine in field.	FLOWMETER	Set flow meter pulse ratio.
PRES DLY	Set start up pressure time delay.	RTU ID	Set communication unit ID number.
LOW PRES	Set the low pressure limit.	DAILY OPS	Set daily operations parameters.
Constants Screen 3		Constants Screen 4	
WIND	Set wind high limit and ON/OFF.	PRES CAL	Calibrate control panel with pressure transducer. Sets current to 0 tare.
AR/AS	Set auto reverse/auto stop ON/OFF.	PRES TYPE	Set pressure sensor type.
PERCENT TIMER	Set percent timer cycle in seconds.	BACKLIGHT	Set backlight delay in minutes.
LOW VOLTAGE	Set low voltage shut down limit.	MOISTURE	Set moisture sensor parameters.
DIR OFFSET	Set pivot direction offset in degrees.	SYSTEM TYPE	Set system type.
ENGINE PUMP	Set engine or pump control.		
COM PORT	Set communications COM port/ baud rate or protocol.		

Figure 7-2

Valley AutoPilot Control Panel

System

Constants (continued)

Time

To set the time of day, follow the steps below:

1. Press , , and  to display the Time screen. See figure 8-1.
2. Enter the time of day in a 24 hour format. (HH:MM:SS). See figure 8-1.

For example: If the time of day is 1:45 P.M., the time of day is entered as 13:45.

Press , , ,  for 1:45 P.M. Seconds can be entered but are not necessary.

3. Press  to retain 1:45 P.M. as the time of day.

Date

To set the date, follow the steps below:

1. Press , , and  to display the Date screen. See figure 8-2.

- When the unit of measure is set to Inch, the date is entered in a month/day/year format.
- When the unit of measure is set to Metric, the date is entered in a day/month/year format.

For example: If the unit of measure is Inch and the date is August 31, 2007.

Press , , , , ,  for August 31, 2007. See figure 8-2.

2. Press  to retain August 31, 2007, as the date.

0 EXIT	3 SIS	6 PRES DLY
1 TIME	4 END-GUN	7 LOW PRES
2 DATE	5 POSITION	8 OTHER
CURRENT TIME (XX : XX) > 1 3 : 4 5		

Figure 8-1

NOTE

- The value shown in parenthesis indicates the current value being used by the control module

0 EXIT	3 SIS	6 PRES DLY
1 TIME	4 END-GUN	7 LOW PRES
2 DATE	5 POSITION	8 OTHER
CURRENT DATE (XX / XX / XX) > 08 / 31 / 07		

Figure 8-2

NOTE

- The value shown in parenthesis indicates the current value being used by the control module

Figure 8-3

Constants (continued)

Stop-In-Slot (SIS)

The Stop-In-Slot (SIS) feature will stop the machine at one set position based on zone, position, and direction. Stop-In-Slot factory default is set to OFF and to stop position, Linear Zone A, at 0 ft., in both directions.

If SIS is ON and the machine is in the zone, at the position, and moving in the selected direction that the Stop-In-Slot position is set, then the machine will stop at this position every time.

If SIS is OFF, then the Stop-In-Slot position is ignored.

NOTE

•If a machine shuts down because SIS is ON:

- » The SIS does NOT need to be turned off before the machine is started again.
- » The SIS feature will automatically disengage for 2° of pivot travel or 5 ft. (1.5 M) of linear travel.
- » The SIS feature will automatically engage and the machine will shut down again when it reaches the SIS position.

Review SIS

To review the current Stop-In-Slot position setting, follow these steps:

1. Press , **1**, **3**, and **1** to display the Review SIS screen. See figure 9-1.

Notice the highlighted areas of the screen. The zone is Linear A, the position is 0 feet, and the direction is Both. See figure 9-1.

In this example, when SIS is ON and the machine is in the Linear A zone, moving either forward or reverse, the machine will stop at 0 feet.

2. Press any key to return to Stop-In-Slot menu.

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF LINEAR A, 0(FT), AND BOTH DIR,
THEN STOP
PRESS ANY KEY >
```

Figure 9-1

Edit SIS

To edit the current Stop-In-Slot position setting, follow these steps:

1. Press , **1**, **3**, and **2** to display the Edit SIS screen. See figure 9-2.

2. Press the number associated with the desired SIS mode:

1 = Pivot

2 = Linear

```
IF ZONE, POSITION, AND DIR: THEN STOP

ENTER MODE 1..PIVOT 2..LINEAR > X
```

Figure 9-2

NOTE

- PIVOT is not available when system type is Swing Around Linear or Standard Linear.
- LINEAR is not available when system type is Towable Pivot.

Valley AutoPilot Control Panel

System

Constants (continued)

Edit SIS (continued)

3. Press the number associated with the desired SIS zone.

- If the SIS mode is PIVOT, press the number associated with the desired Pivot zone for SIS. See figure 10-1.

» = A

» = B

» = C

» = D

- If the SIS mode is LINEAR, press the number associated with the desired Linear zone for SIS. See figure 10-2.

» = A

» = B

4. Enter the desired stop position.

- If the mode is PIVOT, enter a stop position in degrees. See figure 10-3.
- If the mode is LINEAR, enter a stop position in feet or meters depending on the unit of measure setting. See figure 10-4.

5. Press to retain the value as the stop position.

6. Select the stop direction that the machine must be running, in order to stop. See figures 10-5 and 10-6.

= Both

= Forward

= Reverse

7. Press to save or to delete changes. See figures 10-7 and 10-8.

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF PIVOT ,
ENTER ZONE 1..A 2..B 3..C 4..D > X
```

Figure 10-1

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF LINEAR ,
ENTER ZONE 1..A 2..B > X
```

Figure 10-2

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF PIVOT X,
ENTER STOP POSITION > XXX
```

Figure 10-3

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF LINEAR X,
ENTER STOP POSITION > XXX
```

Figure 10-4

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF PIVOT X, XXX (DEG)
DIR 0..BOTH 1..FOR 2..REV > X
```

Figure 10-5

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF LINEAR A, XXX (FT.)
DIR 0..BOTH 1..FOR 2..REV > X
```

Figure 10-6

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF PIVOT A, XXX (DEG), AND XXX DIR,
THEN STOP
ENTER..ACCEPT -..DEL > ENTER
```

Figure 10-7

```
IF ZONE, POSITION, AND DIR: THEN STOP
IF LINEAR A, XXX (FT.), AND XXX DIR,
THEN STOP
ENTER..ACCEPT -..DEL > ENTER
```

Figure 10-8

Constants (continued)

End-Gun

Figure 11-1 illustrates end-gun ON/OFF sequences for linear and pivot zones. In this example, the field is bordered on three sides by roads with a building on one side.

Linear End-Gun Sequences

A linear zone can have up to six end-gun sequences, numbered 1 through 6. Each linear end-gun sequence consists of a lower distance and an upper distance. The space between the lower distance and upper distance is where the end-gun will be ON.

The end-gun sequence number does not affect when the end-gun turns ON or OFF. The end-gun turns ON or OFF based on the lower distance and upper distance entries.

End-gun sequences operate the same, whether the machine is running in the forward or reverse direction through a linear end-gun sequence.

- In the forward direction, the end-gun turns ON at the lower distance and OFF at the upper distance. See figures 11-1 and 11-2.
- In the reverse direction, the end-gun turns ON at the upper distance and OFF at the lower distance. See figures 11-1 and 11-2.

Metric distances can be entered in tenths of a degree to fine tune the end-gun setting. For example, a metric distance can be input as 270.6 meters. However, 270.6 meters will be displayed as 270 meters on the status screen.

Pivot End-Gun Sequences

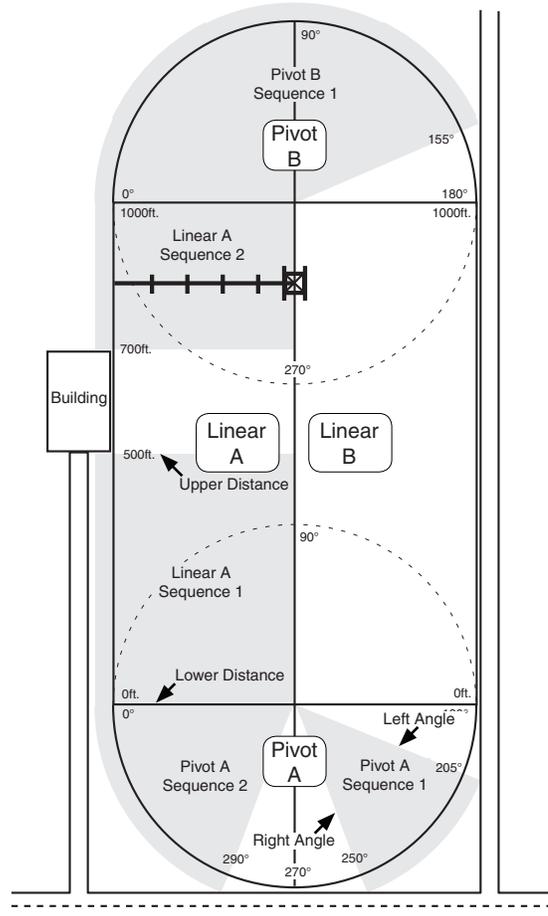
A pivot zone can have up to nine end-gun sequences, numbered 1 through 9. Each sequence consists of a left angle and a right angle. The wedge between the left and right angle is where the end-gun will be turned ON.

The end-gun sequence number does not affect when the end-gun turns ON or OFF. The end-gun turns ON or OFF based on the left angle and right angle entries.

End-gun sequences operate the same whether or not the machine is running in the forward or reverse direction.

- In the forward direction, the end-gun turns ON at the left angle and OFF at the right angle. See figures 11-1 and 11-2.
- In the reverse direction, the end-gun turns ON at the right angle and OFF at the left angle. See figures 11-1 and 11-2.

Angles can be entered in tenths of a degree to fine tune the end-gun setting. For example, an angle can be input as 300.6°. However, 300.6° will be displayed as 300° on the status screen.



- End-gun ON
- End-gun OFF

Figure 11-1 Universal Linear Basic Field Configuration Shown

LINEAR ZONE	SEQUENCE	LOWER DISTANCE	UPPER DISTANCE
Linear A	1	0	500
Linear A	2	700	1000

PIVOT ZONE	SEQUENCE	LEFT ANGLE	RIGHT ANGLE
Pivot A	1	205	250
Pivot A	2	290	0
Pivot B	1	0	155

Figure 11-2

Valley AutoPilot Control Panel

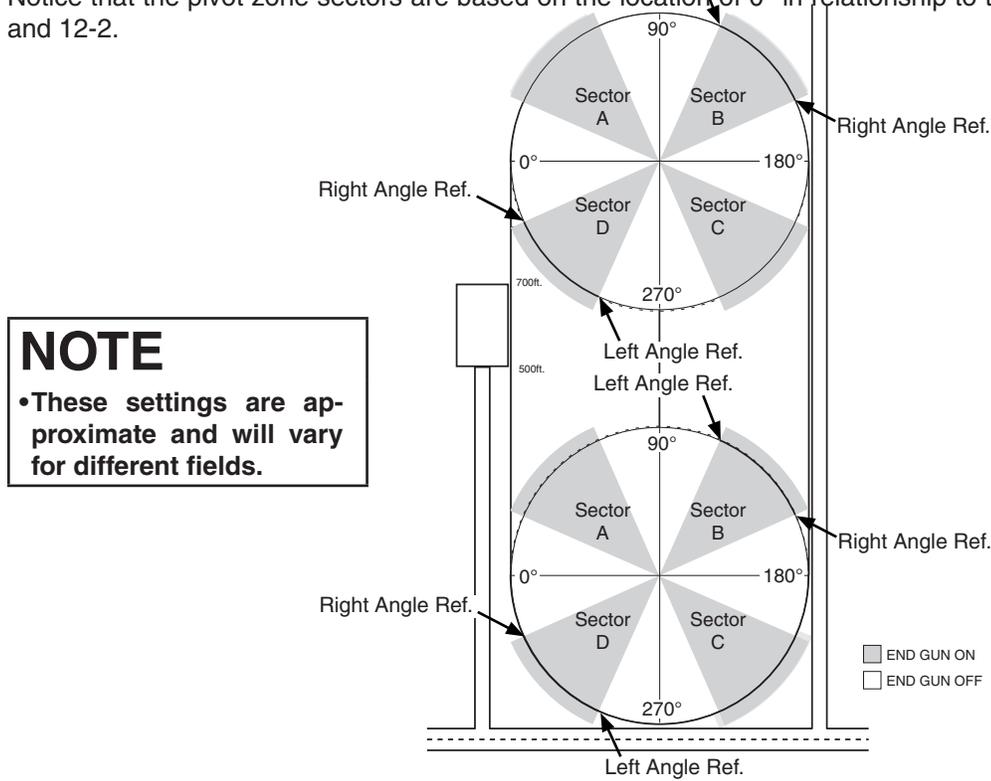
System

Constants (continued)

End-Gun (continued)

Typical Pivot Zone End-Gun Settings

Listed below are typical end-gun settings for a pivot zone based on the field size and end-gun being used. Notice that the pivot zone sectors are based on the location of 0° in relationship to the pivot. See figures 12-1 and 12-2.



NOTE
 •These settings are approximate and will vary for different fields.

Figure 12-1

End-Gun Settings									
NUMBER OF ACRES	END-GUN	SECTOR A		SECTOR B		SECTOR C		SECTOR D	
		LEFT ANGLE	RIGHT ANGLE						
40	NELSON 100	31	59	121	149	211	239	301	329
40	RAINBIRD 85	27	63	117	153	207	243	297	333
160	NELSON 100	21	69	111	159	201	249	291	339
160	RAINBIRD 85	18	72	108	162	198	252	288	342
640	NELSON 100	16	74	106	164	196	254	286	344
640	RAINBIRD 85	13	77	103	167	193	257	283	347

Figure 12-2

Constants (continued)

End-gun (continued)

Setting Linear End-Gun Sequence

To set end-gun sequences within a linear zone, follow these steps:

1. Press , **1**, and **4** for the End-Gun screen. See figure 13-1.
2. Select the zone. See figure 13-1.
1 = Linear A
2 = Linear B
3. Select a sequence number 1 through 6. See figure 13-2.
4. Enter the lower distance and press  to save. See figure 13-2.
5. Enter the upper distance and press  to save. See figure 13-2.

Setting Pivot End-Gun Sequence

To set end-gun sequences within a pivot zone, follow these steps:

1. Press , **1**, and **4** for the End-Gun screen. See figure 13-3.
2. Select the zone. See figure 13-3.
3 = Pivot A
4 = Pivot B
5 = Pivot C
6 = Pivot D
3. Select a sequence number 1 through 9. See figure 13-4.
4. Enter the left angle and press  to save. See figure 13-4.
5. Enter the right angle and press  to save. See figure 13-4.

```

0 EXIT
1 LINEAR A      3 PIVOT A      5 PIVOT C
2 LINEAR B      4 PIVOT B      6 PIVOT D
ENTER SEQUENCE TO CHANGE >
    
```

Figure 13-1

```

1 0- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER SEQUENCE TO CHANGE > 1
    
```

```

1 0- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER LOWER DISTANCE (0) > 100
    
```

```

1 100- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER UPPER DISTANCE (0) > 500
    
```

```

1 100- 500 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER SEQUENCE TO CHANGE >
    
```

Figure 13-2

```

0 EXIT
1 LINEAR A      3 PIVOT A      5 PIVOT C
2 LINEAR B      4 PIVOT B      6 PIVOT D
ENTER SEQUENCE TO CHANGE >
    
```

Figure 13-3

```

1 0- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER SEQUENCE TO CHANGE > 1
    
```

```

1 0- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER LEFT ANGLE ( 0.0) > 205
    
```

```

1 205- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER RIGHT ANGLE ( 0.0) > 250
    
```

```

1 205- 250 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER SEQUENCE TO CHANGE >
    
```

Figure 13-4

Valley AutoPilot Control Panel

System

Constants (continued)

Position

The position of the machine in the field is defined differently for linear and pivot. For linear without GPS, set the linear start, linear end, linear position (optional), and linear speed. For linear with GPS, set the start position, end position, position loss, linear position (optional), and linear speed. For pivot, set the pivot position.

NOTE

•If GPS is used for Linear Position, then a resolver must be used with Pivot Position with Universal Linear system type.

Linear

The linear position is defined by numeric values that indicate length of the field and speed of the machine. Linear position is calculated using linear zone, linear speed, and the amount of time the first tower is running.

- As the linear moves away from the linear start position, the distance from linear start increases, the linear position is calculated, and the value displayed on the status screen INCREASES.
- As the linear moves toward the linear start position, the distance from linear start decreases, the linear position is calculated, and the value displayed on the status screen DECREASES.

Pivot

The pivot position is the actual pivot position in the field defined as a degree location between 0.0° and 359.9° and is based off of a resolver. If GPS is used for linear position, then a resolver must be used with pivot position. See figure 14-1.

Linear Start Position

The Linear Start Position constant is the numerical value associated with the linear start position.

- When the System Type is set to AUL/VSAL, the Linear Start Position is always at pivot zone A. See figure 14-1.
- When the System Type is set to Swing Around Linear or Standard Linear either end of the field can be the Linear Start Position.
- When the machine is in the linear Linear Start Position, the linear position is reset to match the linear start constant value.
- Linear Start/Start Position is entered and displayed in feet (ft.) or meters (m.) depending on the unit of measure setting.
- Linear Start Position is not available when the system type is set to Towable Pivot.

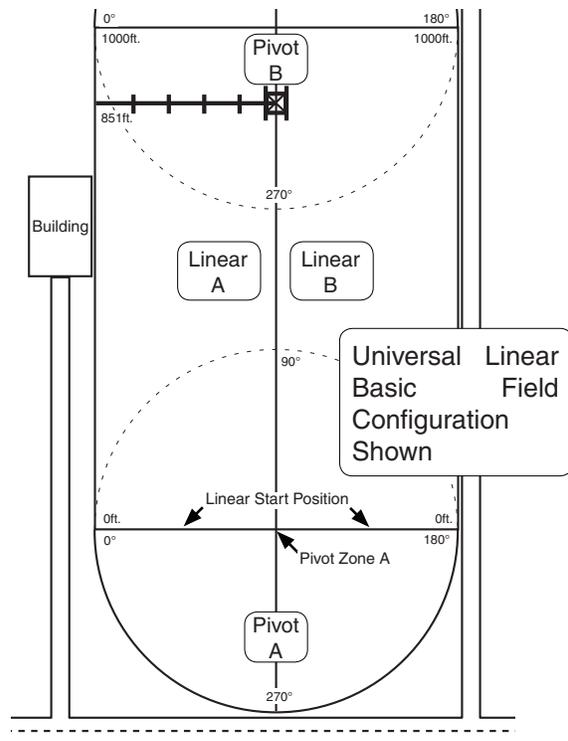


Figure 14-1

Setting Linear Start with RunTime Position without GPS

To set the linear start constant, follow these steps:

1. Press , , , and for the Linear Start screen. See figure 14-2.
2. Enter a Linear Start constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 14-2.
3. Press to retain the value.

0 EXIT	3 LINEAR POSITION
1 LINEAR START	4 LINEAR SPEED
2 LINEAR END	5 PIVOT POSITION
LINEAR START POSITION (0) >	

Figure 14-2

Constants (continued)

Position (continued)

Setting Start Position (with GPS Position)

To set the linear start position constant, follow these steps:

1. Press , **1**, and **5** for the Position screen. See figures 15-1.
2. Press **1** for the Set Start Position screen. See figure 15-2.
3. Press **1** for the edit Start Position screen. See figure 15-3.
4. Enter the GPS start position.
 - 1** - Set to the current position, continue to next step.
 - 2** - Edit, skip to step 6.
5. Choose to set the GPS start position to the current system location. See figure 15-4.
 - 1** - Yes, skip to END POSITION.
 - 2** - No, continue.
6. Press **2** to Edit the start position. See figure 15-5.
7. Enter the latitude linear Start Position constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 15-6.
8. Press  to retain the value.
9. Enter the longitude linear Start Position constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 15-7.
10. Press  to retain the value.

```

0 EXIT                3 LINEAR POSITION
1 FIELD LAYOUT        4 LINEAR SPEED
2 POSITION LOSS         5 PIVOT POSITION
PRESS NUMBER >
    
```

Figure 15-1

```

0 EXIT
1 SET START POSITION
2 SET END POSITION
ENTER NUMBER >
    
```

Figure 15-2

```

POSITION:  START,      ( CURRENT )
LATITUDE:  - 30.291285, (- 30.297895)
LONGITUDE: -127.738585, (-127.738585)
PRESS 1 .. SET CURRENT 2 .. EDIT >
    
```

Figure 15-3

```

TO SET THE GPS START POSITION TO
THE CURRENT SYSTEM LOCATION

PRESS 1 .. YES 2 .. NO >
    
```

Figure 15-4

```

POSITION:  START,      ( CURRENT )
LATITUDE:  - 30.291285, (- 30.297895)
LONGITUDE: -127.738585, (-127.738585)
PRESS 1 .. SET CURRENT 2 .. EDIT >
    
```

Figure 15-5

```

POSITION:  START,      ( CURRENT )
LATITUDE:  - 30.291285, (- 30.297895)
LONGITUDE: -127.738585, (-127.738585)
ENTER START LATITUDE >
    
```

Figure 15-6

```

POSITION:  START,      ( CURRENT )
LATITUDE:  - 30.297995, (- 30.297895)
LONGITUDE: -127.738585, (-127.738585)
ENTER START LONGITUDE >
    
```

Figure 15-7

Valley AutoPilot Control Panel

System

Constants (continued)

Position (continued)

Linear End Position

The Linear End Position constant is a numerical distance value associated with the linear End Position.

- When the System Type is set to AUL/VSAL, the Linear End Position is always at pivot zone B. See figure 16-1.
- When the System Type is set to Swing Around Linear or Standard Linear either end of the field can be the Linear End Position.
- When the machine is in the Linear End Position, the linear position is reset to match the linear end constant value.
- Linear End Position is entered and displayed in feet or meters depending on the unit of measure setting.
- Linear End Position is not available when the system type is set to Towable Pivot.

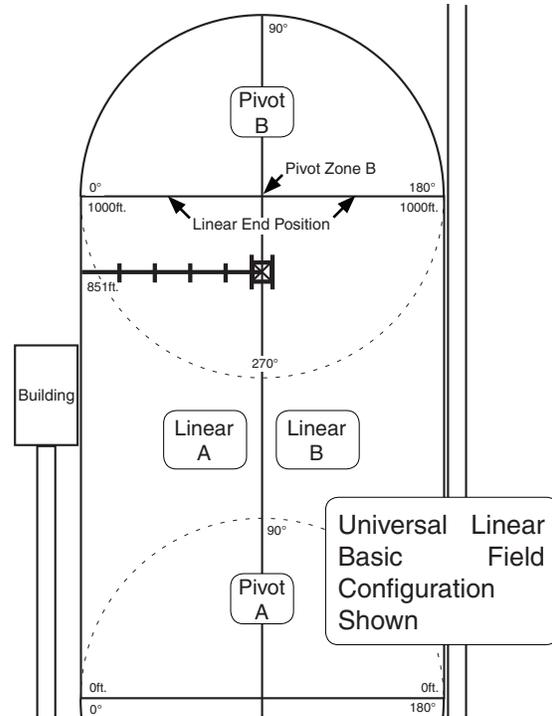


Figure 16-1

Setting Linear End with RunTime calculation without GPS

To set the linear end constant, follow these steps:

1. Press , **1**, **5**, and **2** for the Linear End screen. See figure 16-2.
2. Enter a Linear End constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 16-2.
3. Press to retain the value.

0 EXIT	3 LINEAR POSITION
1 LINEAR START	4 LINEAR SPEED
2 LINEAR END	5 PIVOT POSITION
LINEAR END POSITION (0) >	

Figure 16-2

Constants (continued)

Position (continued)

Setting Linear End Position (with GPS Position)

To set the linear end position constant, follow these steps:

1. Press , , and  for the Position screen. See figure 17-1.
2. Press  for the Set End Position screen. See figure 17-2.
3. Press  for the edit End Position screen. See figure 17-3.
4. Enter the GPS end position.
 -  - Set to the current position, continue to next step.
 -  - Edit, skip to step 6.
5. Choose to set the GPS end position to the current system location. See figure 17-4.
 -  - Yes, skip to POSITION LOSS.
 -  - No, continue.
6. Press  to Edit the end position. See figure 17-5.
7. Enter a latitude linear End Position constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 17-6.
8. Press  to retain the value.
9. Enter a longitude linear End Position constant value from 0 to 32,808 ft. or 0.0 to 9,999.9 m. See figure 17-7.
10. Press  to retain the value.

```

0 EXIT                3 LINEAR POSITION
1 FIELD LAYOUT        4 LINEAR SPEED
2 POSITION LOSS         5 PIVOT POSITION
PRESS NUMBER >
    
```

Figure 17-1

```

0 EXIT
1 SET START POSITION
2 SET END POSITION
ENTER NUMBER >
    
```

Figure 17-2

```

POSITION:  END,      ( CURRENT )
LATITUDE:  - 30.291285,  (- 30.297895)
LONGITUDE: -127.738585,  (-127.738585)
PRESS 1 .. SET CURRENT 2 .. EDIT >
    
```

Figure 17-3

```

TO SET THE GPS END POSITION TO
THE CURRENT SYSTEM LOCATION

PRESS 1 .. YES 2 .. NO >
    
```

Figure 17-4

```

POSITION:  END,      ( CURRENT )
LATITUDE:  - 30.291285,  (- 30.297895)
LONGITUDE: -127.738585,  (-127.738585)
PRESS 1 .. SET CURRENT 2 .. EDIT >
    
```

Figure 17-5

```

POSITION:  END,      ( CURRENT )
LATITUDE:  - 30.291285,  (- 30.297895)
LONGITUDE: -127.738585,  (-127.738585)
ENTER START LATITUDE >
    
```

Figure 17-6

```

POSITION:  END,      ( CURRENT )
LATITUDE:  - 30.297995,  (- 30.297895)
LONGITUDE: -127.738585,  (-127.738585)
ENTER START LONGITUDE >
    
```

Figure 17-7

Valley AutoPilot Control Panel

System

Constants (continued)

Position (continued)

Position Loss

The Position Loss constant is used when GPS is selected as the protocol. If the machine with GPS loses a signal or has a loss of communication then the appropriate outputs will occur. The three outputs are shutdown system, disable endguns, and fallback position.

- Shutdown System - with this output ON and a loss of a signal or no communications to the GPS for longer than the delay, then the machine will log the appropriate error code, system fault, and then shutdown.
- Disable Endguns - with this output ON and a loss of a signal or no communications to the GPS for longer than the delay, then the machine will turn off endgun and wide boundary outputs until the GPS signal is reacquired by the machine.
- Fallback Position - with the Runtime position ON and the loss of GPS signal then the position will be calculated based on runtime until the GPS position is reacquired. With the Resolver position ON and the loss of GPS signal then the position will be calculated based on the resolver feedback until the GPS position is reacquired.

Setting Linear Position Loss

To set the position loss constants, follow these steps:

1. Press , **1**, and **5** for the Position screen. See figure 18-1.
2. Press **2** for the Position Loss screen. See figure 18-2.
3. Press **1** to enable the Shutdown System.
4. Press **1** to activate or **0** to deactivate the Shutdown System. Off is the default. See figure 18-3.
 - If activated, enter the delay time in minutes. The default is 100 minutes.
5. Press  to retain the value. See figure 18-4.
6. Press **2** to enable the Disable End-guns.
7. Press **1** to activate or **0** to deactivate the Disable End-guns. Off is the default. See figure 18-5.

```
0 EXIT                3 LINEAR POSITION
1 FIELD LAYOUT        4 LINEAR SPEED
2 POSITION LOSS         5 PIVOT POSITION
PRESS NUMBER >
```

Figure 18-1

```
IN EVENT OF GPS SIGNAL LOSS      *=ON
1 SHUTDOWN SYSTEM                3*FALLBACK POSITION
2 DISABLE ENDGUNS
PRESS NUMBER TO TOGGLE >
```

Figure 18-2

```
IN EVENT OF GPS SIGNAL LOSS      *=ON
1 SHUTDOWN SYSTEM                3*FALLBACK POSITION
2 DISABLE ENDGUNS
SYSTEM SHUTDOWN 1 .. ON 0 .. OFF >
```

Figure 18-3

```
IN EVENT OF GPS SIGNAL LOSS      *=ON
1*SHUTDOWN SYSTEM                3*FALLBACK POSITION
2 DISABLE ENDGUNS
SYSTEM SHUTDOWN DELAY MIN (100) >
```

Figure 18-4

```
IN EVENT OF GPS SIGNAL LOSS      *=ON
1*SHUTDOWN SYSTEM                3*FALLBACK POSITION
2 DISABLE ENDGUNS
DISABLE ENDGUNS 1 .. ON 0 .. OFF >
```

Figure 18-5

Constants (continued)

Position (continued)

Position Loss (continued)

8. Enter the delay time in minutes. The default is 10 minutes.

9. Press  to retain the value. See figure 19-1.

10. Press  to select Fallback Position. See figure 19-2.

11. Press  to turn the Fallback Position on. See figure 19-3.

12. Do one of the following:

- Use Runtime:

(a) Press  to select run time. On is the default. See figure 19-4.

(b) Press  to turn run time on. See figure 19-5.

(c) Enter pivot speed. 15.56 ft/min is the default. See figure 19-6.

(d) Press  to retain the value.

(e) Enter pivot length. 1320 feet is the default. See figure 19-7.

(f) Press  to retain the value.

- Use Resolver:

(a) Press  to use the resolver. Runtime On is the default. See figure 19-8.

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2*DISABLE ENDGUNS
DISABLE ENDGUNS DELAY MIN ( 10) >
```

Figure 19-1

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1 SHUTDOWN SYSTEM      3*FALLBACK POSITION
2 DISABLE ENDGUNS
PRESS NUMBER TO TOGGLE >
```

Figure 19-2

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1 SHUTDOWN SYSTEM      3*FALLBACK POSITION
2 DISABLE ENDGUNS
FALLBACK POSITION 1 .. ON 0 .. OFF >
```

Figure 19-3

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2 DISABLE ENDGUNS
SELECT 1 RUNTIME  2 RESOLVER > (1)
```

Figure 19-4

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2*DISABLE ENDGUNS
USE RUNTIME 1 .. ON 0 .. OFF >
```

Figure 19-5

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2*DISABLE ENDGUNS
PIVOT SPEED FT./MIN (15.560) >
```

Figure 19-6

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2*DISABLE ENDGUNS
PIVOT LENGTH FT. (1320) >
```

Figure 19-7

```
IN EVENT OF GPS SIGNAL LOSS           *=ON
1*SHUTDOWN SYSTEM      3*FALLBACK POSITION
2*DISABLE ENDGUNS
SELECT 1 RUNTIME  2 RESOLVER > (2)
```

Figure 19-8

Valley AutoPilot Control Panel

System

Constants (continued)

Position (continued)

Linear Position

The Linear Position is the Current Linear Position that is displayed on the status screen when the machine is in a linear zone. See figure 20-1.

The Linear Position can be set manually, but it will be automatically reset when the machine is in either the Linear Start position or the Linear End position. See figure 20-1.

- When the machine is in the Linear Start position, the linear position is reset to match the linear start constant value. See figure 20-1.
- When the machine is in the Linear End position, the linear position is reset to match the linear end constant value. See figure 20-1.
- When the machine moves away from the linear start position toward the linear end position, the calculated linear position increases.
- When the machine moves away from the linear end position toward the linear start position, the calculated linear position decreases.

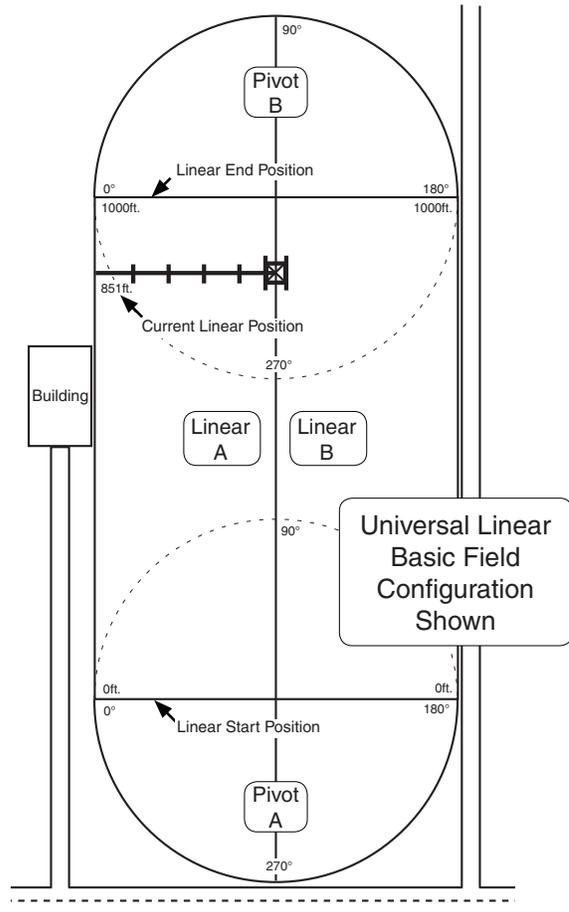


Figure 20-1

NOTE

- Linear Position is read-only with a GPS machine. Read-only means the operator can only view the position. Only Linear Start and Linear can be modified.

NOTE

- Changing the Linear Position will affect the location in the field where End-Gun, wide boundary, Stop-In-Slot, and programs will be controlled.

Setting Linear Position with RunTime calculation without GPS

To set the linear position, follow these steps:

1. Press , **1**, **5**, and **3** for the linear position screen. See figure 20-2.
2. Enter a linear position value from 0 to 32,808 ft. or 0.0 to 9,999.9 m.
3. Press to retain the value.

0 EXIT	3 LINEAR POSITION
1 LINEAR START	4 LINEAR SPEED
2 LINEAR END	5 PIVOT POSITION
CURRENT POSITION (123.5) >	

Figure 20-2

Valley AutoPilot Control Panel

System

Constants (continued)

Position (continued)

Linear Speed

The Linear Speed constant consists of the intermediate drive unit speed and the end drive unit speed. The intermediate drive unit speed is used to monitor the time that the first tower runs to calculate the current linear position, it does not take into account any steering time. The end drive unit speed is used with the percent timer setting to calculate the hours per pass and is displayed on the status screen when in the linear mode.

NOTE

•Hose Drag and Universal Linears must have a wire to the Intermediate Drive Unit to monitor the speed.

Estimated Drive Unit Speed																
Drive Unit Motor Output RPM	Tire Sizes / Machine Voltage and Hertz															
	11.2 x 24				14.9 x 24				16.9 x 24				11.2 x 38			
	480 Volt 60Hz		380 Volt 50Hz		480 Volt 60Hz		380 Volt 50Hz		480 Volt 60Hz		380 Volt 50Hz		480 Volt 60Hz		380 Volt 50Hz	
	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.	ft./min.	M/min.
29	5.90	1.80	4.91	1.50	6.54	1.99	5.45	1.66	6.98	2.13	5.81	1.77	8.06	2.45	6.71	2.04
30	6.10	1.86	5.08	1.55	6.77	2.06	5.64	1.72	7.22	2.20	6.01	1.83	8.34	2.54	6.95	2.12
34	6.95	2.12	5.79	1.76	7.40	2.25	6.16	1.88	8.16	2.48	6.80	2.07	9.45	2.88	7.87	2.40
35	7.12	2.17	5.93	1.81	7.89	2.40	6.57	2.00	8.42	2.56	7.01	2.14	9.73	2.96	8.11	2.47
37	7.53	2.29	6.27	1.91	8.53	2.60	7.11	2.16	8.90	2.71	7.41	2.26	10.28	3.13	8.56	2.61
43	8.75	2.66	7.29	2.22	9.91	3.02	8.26	2.51	10.34	3.15	8.61	2.62	11.94	3.64	9.95	3.03
56	11.39	3.47	9.49	2.89	12.63	3.85	10.52	3.20	13.48	4.10	11.23	3.42	15.56	4.74	12.96	3.95
58	11.80	3.59	9.83	2.99	13.08	3.98	10.90	3.32	13.96	4.25	11.63	3.54	16.12	4.91	13.43	4.09
68	13.84	4.21	11.53	3.51	15.34	4.67	12.78	3.89	16.36	4.98	13.63	4.15	18.90	5.76	15.74	4.79
69	14.03	4.27	11.69	3.56	15.57	4.74	12.97	3.95	16.60	5.05	13.83	4.21	19.18	5.84	15.98	4.86

Figure 21-1

NOTE

•Linear Speed is not available when the system type is set to Towable Pivot.

Linear speed is entered and displayed in feet per minute (ft./min.) or meters per minute (m./min.) depending on the unit of measure setting. Use the drive unit motor output RPM and tire size with the Estimated Drive Unit Speed chart to determine drive unit speed. See figure 21-1.

Setting Linear Speed

To set the linear speed constant, follow these steps:

1. Press , , , and for the Linear Speed screen. See figures 21-2 and 21-3.
2. Enter the intermediate drive unit speed from 0.000 to 99.999 ft./min. or 0.000 to 30.480 m./min. See figures 21-2 and 21-3.
3. Press to retain the value.
4. Enter the end drive unit speed from 0.000 to 99.999 ft./min. or 0.000 to 30.480 m./min. See figures 21-4 and 21-5.
5. Press to retain the value.

0 EXIT	3 LINEAR POSITION
1 FIELD LAYOUT	4 LINEAR SPEED
2 POSITION LOSS	5 PIVOT POSITION
INT. DU SPEED FT./MIN (15.560) >	

Figure 21-2 with GPS

0 EXIT	3 LINEAR POSITION
1 LINEAR START	4 LINEAR SPEED
2 LINEAR END	5 PIVOT POSITION
INT. DU SPEED FT./MIN (0.000) > XX.XX	

Figure 21-3 without GPS

0 EXIT	3 LINEAR POSITION
1 FIELD LAYOUT	4 LINEAR SPEED
2 POSITION LOSS	5 PIVOT POSITION
END DU SPEED FT./MIN (15.560) >	

Figure 21-4 with GPS

0 EXIT	3 LINEAR POSITION
1 LINEAR START	4 LINEAR SPEED
2 LINEAR END	5 PIVOT POSITION
END DU SPEED FT./MIN (0.000) > XX.XX	

Figure 21-5 without GPS

Valley AutoPilot Control Panel

System

Constants (continued)

Position (continued)

Pivot Position

The Pivot Position is the Current Pivot Position that is shown on the status screen when the machine is in a pivot zone.

Pivot Position is entered and displayed as a degree location between 0.0° and 359.9°. See figure 22-1.

NOTE

- Changing the Pivot Position will affect the location in the field where the end-gun, wide boundary, stop-in-slot, and programs will be controlled.

Universal Linear

When the System Type is set to Universal Linear, the 0° pivot position must be at the end of the Linear A zone. See figure 22-1.

- If the pivot is in position 1, set the Pivot Position to 155°. See figure 22-1.
- If the pivot is in position 2, set the Pivot Position to 180°. See figure 22-1.
- If the pivot is in position 3, set the Pivot Position to 0°. See figure 22-1.

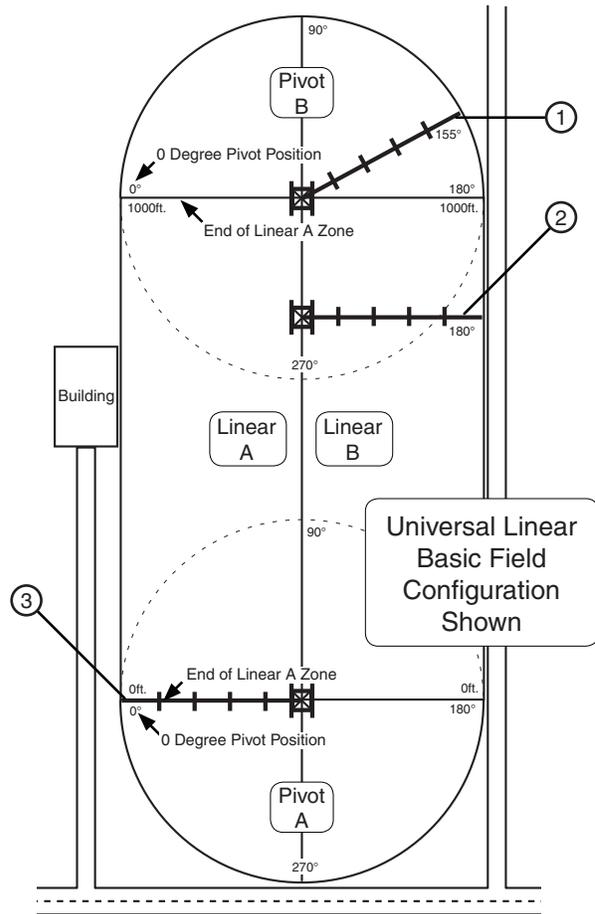


Figure 22-1

1. Pivot Position 1
2. Pivot Position 2
3. Pivot Position 3

Towable Pivot

When the System Type is set to Towable Pivot, the 0° pivot position can be set to any desired position.

Setting Pivot Position with Resolver (No GPS)

NOTE

- Pivot Position is not available when the system type is set to Swing Around Linear or Standard Linear.

To set the Pivot Position, follow these steps:

1. Press , , , and for the Pivot Position screen. See figure 22-2.
2. Enter the actual Pivot Position from 0.0° to 359.9°. See figure 22-2.
3. Press to retain the value.

```

0 EXIT
1 LINEAR START
2 LINEAR END
CURRENT POSITION ( 0.0 ) >
3 LINEAR POSITION
4 LINEAR SPEED
5 PIVOT POSITION
    
```

Figure 22-2

Constants (continued)

Position (continued)

Setting Pivot Position - Towable with GPS Position

To set the Pivot Position, follow these steps:

1. Press , **1**, **5**, and **3** for the Pivot Position screen. See figure 23-1.
2. Enter the current pivot position. See figure 23-2.
3. Press  to retain the value.
4. Complete the POSITION LOSS constants if not already completed.

```

0 EXIT                3 PIVOT POSITION
1 PIVOT POINT
2 POSITION LOSS
ENTER NUMBER >
    
```

Figure 23-1

```

POSITION: 288.3 -> 175.6          PIVOT ?
SAT COUNT: 8                    LOCK: DGPS
LAT: (-30.297895)              LON: (-127.739125)
CURRENT POSITION (175.6) >
    
```

Figure 23-2

Pressure Delay

The pressure delay is the amount of time, in seconds, required for the machine to initially build water pressure above the low pressure limit after the pump has been started. The pressure delay bypasses the pressure transducer for a specified amount of time to allow sufficient water pressure to develop in the machine. If the pressure does not reach the low pressure limit in the specified amount of time, the machine will shut down due to low pressure. Pressure delay factory default is set to 600 seconds.

NOTE

• If a mechanical pressure switch is used, the pressure delay constant must be entered as the amount of time required for the pressure switch to close.

Pressure Drop Timer

After the pressure delay time has expired, the built-in pressure drop timer keeps the machine running for up to 30 seconds during a pressure drop and is reset when pressure increases above the low pressure limit.

Setting Pressure Delay

To set the pressure delay, follow these steps:

1. Press , **1**, and **6** for the Pressure Delay screen. See figure 23-3.
2. Enter the desired pressure delay time in seconds.
3. Press  to retain the value.

```

0 EXIT                3 SIS                6 PRES DLY
1 TIME                4 END-GUN            7 LOW PRES
2 DATE                5 POSITION            8 OTHER
PRESSURE DELAY IN SECONDS ( 0 ) > XXX
    
```

Figure 23-3

Low Pressure Limit

The pressure transducer requires a low pressure limit to be set. If the water pressure in the machine falls below the low pressure limit, the machine will shut down due to low water pressure. For example, if the low pressure limit is set at 20 psi (137.8 kPa) and the water pressure at the pressure transducer drops below 20 psi (137.8 kPa), then the machine and water supply will be shut down.

Setting Low Pressure Limit

To set the Low Pressure Limit, follow these steps:

1. Press , **1**, and **7** for the Low Pressure Limit screen. See figure 23-4.
2. Enter the desired Low Pressure Limit in either pounds per square inch (psi) or kilopascal (kPa). Press  to retain the value.

```

0 EXIT                3 SIS                6 PRES DLY
1 TIME                4 END-GUN            7 LOW PRES
2 DATE                5 POSITION            8 OTHER
LOW PRESSURE LIMIT ( 0 ) > XX
    
```

Figure 23-4

Valley AutoPilot Control Panel

System

Constants (continued)

Minimum Application

The minimum application is the depth of water applied at a percentage timer setting of 100 percent. The minimum application value is specific to the machine and is used to calculate water applications at different machine speeds. Refer to the VChart Timer Report for this value or contact your Valley dealer.

There are separate linear and pivot minimum application constants which are entered in inches or millimeters depending on the selected unit of measure. The linear minimum application is used in linear zones and the pivot minimum application is used in pivot zones.

Setting Minimum Application

To set the minimum application, follow these steps:

1. Press , , , and  for the Minimum Application screen. See figure 24-1.
2. Enter the linear minimum application from 0.0 to 1.0 in. or 0.0 to 25.4 mm. Press  to retain the value. See figure 24-1.
3. Enter the pivot minimum application from 0.0 to 1.0 in. or 0.0 to 25.4 mm. Press  to retain the value. See figure 24-2.

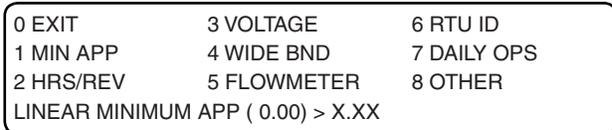


Figure 24-1

NOTE

•Linear Minimum App is not displayed when the system type is set to Towable Pivot.

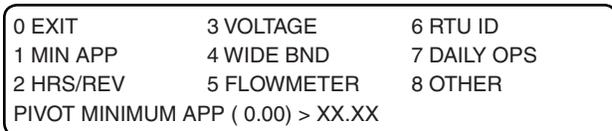


Figure 24-2

NOTE

•Pivot minimum app is not displayed when the system type is set to Standard Linear.

Hours/Rev

Hours/rev is the number of hours required, at a percent timer setting of 100 percent, for the machine to make one complete revolution when in pivot mode. The hours/rev value is used to calculate hours per revolution for different percent timer settings and is displayed on the status screen when in the pivot mode. The hours/rev value is specific to the machine. Refer to the VChart Timer Report for this value or contact your Valley dealer.

Setting Hours/Rev

To set the hours/rev, follow these steps:

1. Press , , , and  for the Hours Per Revolution screen. See figure 24-3.
2. Enter the hours per revolution. Press  to retain the value. See figure 24-3.

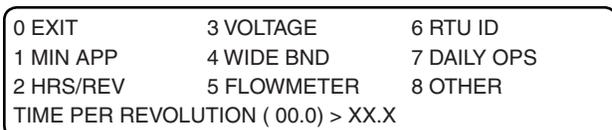


Figure 24-3

NOTE

•Hrs/Rev is not available when the system type is set to Standard Linear.

Valley AutoPilot Control Panel

System

Constants (continued)

Voltage

The voltage constant calibrates the volt meter with the actual voltage coming into the control panel so that the voltage fluctuations can be monitored correctly.

The incoming voltage to the control panel must be measured with a meter by a qualified electrician or service person. This value is entered as the voltage constant.

Supply voltage should never exceed the maximum supply voltage listed in figure 25-1.

Nominal Supply Voltage	Recommended Low Voltage Setting	Maximum Supply Voltage
480 VAC @ 60Hz	440 VAC	505 VAC
415 VAC @ 50Hz	375 VAC	420 VAC
400 VAC @ 50Hz	365 VAC	420 VAC
380 VAC @ 50Hz	355 VAC	420 VAC

Figure 25-1

NOTE

- The low voltage shutdown point is set at 440 volts 60 Hz. from the factory. If the control panel volt meter senses voltage below the low voltage limit, the machine will be shutdown and the diagnostics screen will display a fault for machine power.
- The low voltage setting can be adjusted lower than 440 volts 60 Hz. Refer to Low Voltage in the System section to adjust low voltage setting.

CAUTION

LOW VOLTAGE WILL DAMAGE THE DRIVE MOTORS AND OTHER ELECTRICAL EQUIPMENT. CORRECT ANY LOW VOLTAGE PROBLEM BEFORE RESUMING OPERATION.

Setting Voltage

To set the voltage, follow these steps:

1. Press , , , and  for the Voltage screen. See figure 25-2.
2. Enter the actual measured voltage. Press  to retain the value. See figure 25-2.

0 EXIT	3 VOLTAGE	6 RTU ID
1 MIN APP	4 WIDE BND	7 DAILY OPS
2 HRS/REV	5 FLOWMETER	8 OTHER
CURRENT VOLTAGE (000) > XXX		

Figure 25-2

Valley AutoPilot Control Panel

System

Constants (continued)

Wide Boundary

The wide boundary sequences control a second end-gun that, in most applications, has a wider band of coverage than the other end-gun. Figure 26-1 illustrates wide boundary ON/OFF sequences for linear and pivot zones.

Linear Wide Boundary Sequences

Linear zone wide boundary sequences are numbered 1 through 6. Each sequence consists of a lower distance and an upper distance. The space between the lower distance and upper distance is where the wide boundary will be ON.

The wide boundary sequence number does not affect when the wide boundary turns ON or OFF. The wide boundary turns ON or OFF based on the lower distance and upper distance entries.

Wide boundary sequences operate the same, whether the machine is running in the forward or reverse direction through a sequence.

- In forward, the wide boundary turns ON at the lower distance and OFF at the upper distance. See figures 26-1 and 26-2.
- In reverse, the wide boundary turns ON at the upper distance and OFF at the lower distance. See figures 26-1 and 26-2.

Metric distances can be entered in tenths of a degree to fine tune the wide boundary setting. For example, a metric distance can be input as 270.6 meters. However, 270.6 meters will be displayed as 270 meters on the status screen.

Pivot Wide Boundary Sequences

Pivot zone wide boundary sequences are numbered 1 through 9. Each sequence has a left angle and a right angle. The wedge between the left and right angle is where the wide boundary will be turned ON.

The wide boundary sequence number does not affect when the wide boundary turns ON or OFF. The wide boundary turns ON or OFF based on the left angle and right angle entries.

Wide boundary sequences operate the same whether or not the machine is running in the forward or reverse direction through a sequence.

- In forward, the wide boundary turns ON at the left angle and OFF at the right angle. See figures 26-1 and 26-2.
- In reverse, the wide boundary turns ON at the right angle and OFF at the left angle. See figures 26-1 and 26-2.

Angles can be entered in tenths of a degree to fine tune the wide boundary setting. However, an angle of 300.6° will be displayed as 300° on the status screen.

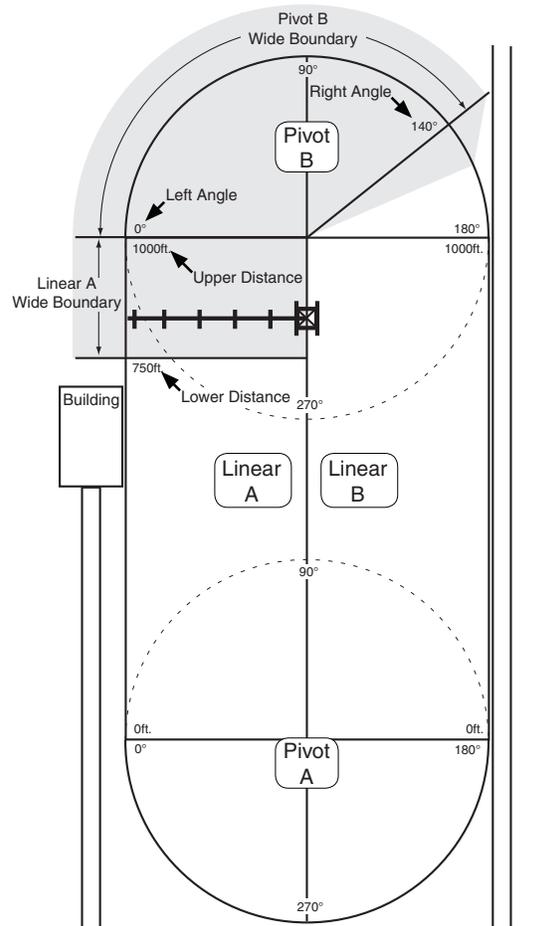


Figure 26-1 Universal Linear Basic Field Configuration Shown

■ d-gun ON
□ d-gun OFF

LINEAR ZONE	SEQUENCE	LOWER DISTANCE	UPPER DISTANCE
Linear A	1	750	1000

PIVOT ZONE	SEQUENCE	LEFT ANGLE	RIGHT ANGLE
Pivot B	1	0	140

Figure 26-2

Constants (continued)

Wide Boundary (continued)

Setting Linear Wide Boundary

To set wide boundary sequences within a linear zone, follow these steps:

1. Press , **1** , **8** , and **4** for the Wide Boundary screen. See figure 27-1.
2. Select the zone:
1 = Linear A
2 = Linear B
3. Select a sequence number 1 to 6. See figure 27-2.
4. Enter the lower distance. Press to retain the value. See figure 27-2.
5. Enter the upper distance. Press to retain the value. See figure 27-2.

Setting Pivot Wide Boundary

To set wide boundary sequences within a pivot zone, follow these steps:

1. Press , **1** , **8** , and **4** for the Wide Boundary screen. See figure 27-3.
2. Select the zone:
3 = Pivot A
4 = Pivot B
5 = Pivot C
6 = Pivot D
3. Select a sequence number 1 to 9. See figure 27-4.
4. Enter the left angle. Press to retain the value. See figure 27-4.
5. Enter the right angle. Press to retain the value. See figure 27-4.

```

0 EXIT
1 LINEAR A      3 PIVOT A      5 PIVOT C
2 LINEAR B      4 PIVOT B      6 PIVOT D
ENTER SEQUENCE TO CHANGE >
    
```

Figure 27-1

```

1 0- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER SEQUENCE TO CHANGE > 1
    
```

```

1 0- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER LOWER DISTANCE (0) > 100
    
```

```

1 100- 0 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER UPPER DISTANCE (0) > 500
    
```

```

1 100- 500 4 0- 0
2 0- 0 5 0- 0
3 0- 0 6 0- 0
ENTER SEQUENCE TO CHANGE >
    
```

Figure 27-2

```

0 EXIT
1 LINEAR A      3 PIVOT A      5 PIVOT C
2 LINEAR B      4 PIVOT B      6 PIVOT D
ENTER SEQUENCE TO CHANGE >
    
```

Figure 27-3

```

1 0- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER SEQUENCE TO CHANGE > 1
    
```

```

1 0- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER LEFT ANGLE ( 0.0) > 205
    
```

```

1 205- 0 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER RIGHT ANGLE ( 0.0) > 250
    
```

```

1 205- 250 4 0- 0 7 0- 0
2 0- 0 5 0- 0 8 0- 0
3 0- 0 6 0- 0 9 0- 0
ENTER SEQUENCE TO CHANGE >
    
```

Figure 27-4

Valley AutoPilot Control Panel

System

Constants (continued)

Flowmeter

The flowmeter constant calibrates the control panel with the optional flowmeter. Flowmeter constants (pulse multiplier values) are usually provided by the flowmeter manufacturer. The table below lists multiplier values for Valmont supplied flow meters. See figure 28-1.

The flowmeter rate of flow is displayed on the system, data, flow/wind screen in

Valmont Supplied Flowmeter Multiplier Values

Pipe Diameter (inches)	Gallons per Pulse	Liters per Pulse	Max. GPM/RPM	Max. LPS/RPM
6	0.6250	2.366	1300/2080	82.02/2080
6-5/8	0.7407	2.804	1300/1755	82.02/1755
8	1.2500	4.732	2500/2000	157.72/2000
8-5/8	1.3514	5.116	2500/1850	157.82/1850
10	1.9231	7.280	3000/1560	189.27/1560

Figure 28-1

either gallons per minute (GPM) or liters per second (LPS) depending on the unit of measurement.

Setting Flowmeter Constant

To set the flowmeter constant, follow these steps:

1. Press , , , and  for Flowmeter screen. See figure 28-2.
2. Enter the manufacturers recommended pulse multiplier value in gallons or liters depending on the unit of measure. Press  to retain the value. See figure 28-2.

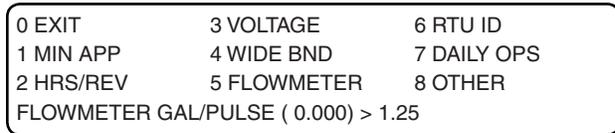


Figure 28-2

RTU ID (Remote Telemetry Unit Identity)

The RTU ID is set only when an optional remote telemetry device will be used to communicate with the control panel. The control panel RTU ID is a unique three digit number between 001 and 997 that the user selects. None of the user's other control panels or BaseStations can have the same RTU ID number.

- The RTU ID number 000 is the factory setting for all RTU devices.
- Do not use RTU ID number 998 or 999. These numbers are reserved for use by a primary BaseStation.

Setting the RTU ID

To set the RTU ID constant, follow these steps:

3. Press , , , and  to display the control module RTU ID screen. See figure 28-3.
4. Enter the three digit control module RTU ID. Press  to retain the value. See figure 28-3.

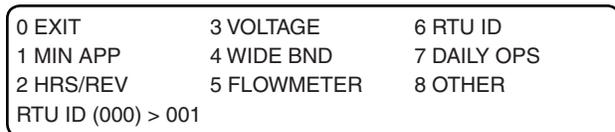


Figure 28-3

Valley AutoPilot Control Panel

System

Constants (continued)

Daily OPS (Daily Operations)

Daily OPS can be used to run a program using time delays in between cycles, run a program at specified intervals of time, or run an electrical load management program that can start and stop the machine daily or on selected days of the week.

Daily OPS is a programmable lockout of the machine Start command. Daily OPS uses the Restart feature along with the START\$ option for control.

When Daily OPS is switched on, the machine is allowed to run ONLY after an ON time has enabled it to run and before an OFF time has disabled it. The machine will run only on days selected. Daily OPS will stop the machine if the user attempts to start the machine during the OFF time.

If the machine is stopped, either at the panel or remotely, the Restart function will not restart the machine at the Daily OPS ON time until the machine has been started again.

NOTE

•For Daily OPS to work correctly the START\$ must be programmed.

Daily ON/OFF

Daily ON/OFF is used to turn Daily OPS on and off. Daily OPS MUST be turned ON for the machine to start and stop at the specified times.

Turning Daily OPS ON displays the Restart message on the status screen indicating that the machine can start at anytime. However, this does not automatically cause the power/pressure Autorestart to be active.

Setting Daily ON/OFF

To set Daily ON/OFF, follow these steps:

1. At the status screen press , , , , and  to display the Daily on/off screen. See figure 29-1.
2. Select the desired setting:
 = DAILY OPS ON
 = DAILY OPS OFF

0 EXIT	3 CYCLE ON/OFF
1 DAILY ON/OFF	4 CYCLE INTERVAL
2 DAILY START/STOP	5 CYCLE START TIME
DAILY OPS (OFF) 1..ON 0..OFF >	

Figure 29-1

Valley AutoPilot Control Panel

System

Constants (continued)

Daily OPS (continued)

Daily Start/Stop

Daily Start/Stop is used to set the daily machine start time, daily machine stop time, and day(s) of the week for Daily OPS to be active. Daily start and stop times are entered in a 24 hour clock format. For example, a time of 6:00 P.M. is entered as 18:00:00 hours or a time of 10:00 A.M. is entered as 10:00:00 hours.

Setting Daily Start/Stop

To set Daily Start/Stop, follow these steps:

1. At the status screen press , **1**, **8**, **7**, and **2** to display the Daily Start/Stop screen. See figure 30-1.
2. Enter the daily machine start time in 24 hour clock format. Press  to retain the value.
3. Enter the desired daily machine stop time in 24 hour clock format. Press  to retain the value.
4. Select the desired day(s) of the week that Daily OPS will be active. Press  to retain the value.

- | | |
|----------------------|---------------------|
| 1 = Sunday | 5 = Thursday |
| 2 = Monday | 6 = Friday |
| 3 = Tuesday | 7 = Saturday |
| 4 = Wednesday | |

0 EXIT	3 CYCLE ON/OFF
1 DAILY ON/OFF	4 CYCLE INTERVAL
2 DAILY START/STOP	5 CYCLE START TIME
ENTER TIME TO START (XX:XX) >	

Figure 30-1

Cycle ON/OFF

Cycle ON/OFF is used to turn repeat cycles on and off. The repeat cycles feature is used for repeating the CYCLE\$ program at specified times. The CYCLE\$ program must be written and Cycle must be ON for the feature to work.

Turning cycle on, displays the Restart message on the status screen, indicating that the machine can start at anytime. However, this does not automatically cause the Autorestart to be active.

Setting CYCLE ON/OFF

To set Cycle ON/OFF, follow these steps:

1. At the status screen press , **1**, **8**, **7**, and **3** to display the Cycle ON/OFF screen. See figure 30-2.
2. Select the number associated with the desired setting:

- | |
|----------------------|
| 1 = CYCLE ON |
| 0 = CYCLE OFF |

0 EXIT	3 CYCLE ON/OFF
1 DAILY ON/OFF	4 CYCLE INTERVAL
2 DAILY START/STOP	5 CYCLE START TIME
REPEAT CYCLE (OFF) 1..ON 0..OFF > X	

Figure 30-2

Constants (continued)

Daily OPS (continued)

Cycle Interval

Cycle Interval is used to set the number of days between irrigations or cycles. The time to complete one cycle must be less than the cycle interval. A cycle is complete when the machine advances to the stop-in-slot position.

When the machine does not complete the current cycle before the next cycle date and time is reached:

- If machine is running, it will run to the SIS position and stop. Then the operator must start the machine manually to resume the cycle.
- If the machine is stopped, the operator must start the machine manually, let the machine run past the SIS position, then execute one cycle of the CYCLE\$ program to resume the cycle.

Setting Cycle Interval

To set Cycle Interval, follow these steps:

1. At the status screen press , , , , and  to display the Cycle Interval screen. See figure 31-1.
2. Enter the desired number of days from 1 to 99 between irrigations or cycles. Press  to retain the value.

0 EXIT	3 CYCLE ON/OFF
1 DAILY ON/OFF	4 CYCLE INTERVAL
2 DAILY START/STOP	5 CYCLE START TIME
CYCLE INTERVAL (1 DAYS) >	

Figure 31-1

Cycle Start Time

Cycle Start Time is used to set the cycle start time, cycle start time is entered in 24 hour clock format. For example, a time of 6:00 P.M. is entered as 18:00:00 hours or a time of 10:00 A.M. is entered as 10:00:00 hours.

Setting Cycle Start Time

To set Cycle Start Time, follow these steps:

1. At the status screen press , , , , and  to display the Cycle Start Time screen. See figure 31-2.
2. Enter the desired time to start irrigations or cycles in 24 hour clock format. Press  to retain the value.

0 EXIT	3 CYCLE ON/OFF
1 DAILY ON/OFF	4 CYCLE INTERVAL
2 DAILY START/STOP	5 CYCLE START TIME
ENTER TIME TO START (00:00) > XX:XX:XX	

Figure 31-2

Valley AutoPilot Control Panel

System

Constants (continued)

Wind

Wind is used to set the wind speed high limit and turn the wind high limit shutdown ON or OFF. When the wind high limit shutdown is ON and the wind high limit is reached the machine will shut down. The wind high limit factory default setting is 15 miles per hour (6.7 meters per second).

Setting Wind

To set Wind High Limit or turn the wind high limit shutdown ON or OFF, follow these steps:

1. At the status screen press , , , , and  to display the Wind high limit screen. See figure 32-1.

2. Enter the desired maximum wind speed pulse rate. Press  to retain the value.

3. Turn the wind meter ON or OFF:

 = ON

 = OFF

0 EXIT	3 PERCENT TIMER	6 ENGINE/PUMP
1 WIND	4 LOW VOLTAGE	7 COM PORT
2 AR/AS	5 DIR OFFSET	8 OTHER
WIND HIGH LIMIT (15) > XX		

Figure 32-1

AR/AS (Auto Reverse/Auto Stop)

AR/AS is used to enable or disable the Automatic Reverse/Automatic Stop option when the machine is equipped with a drive unit mounted end-of-field stop/auto reverse. If the machine is NOT equipped with a drive unit mounted end-of-field stop/auto reverse, leave this option OFF. AR/AS is factory set to OFF.

- If AR/AS is ON and the Auto Reverse/Auto Stop option is set to Auto Reverse, the machine will reverse direction when the actuator arm is tripped.
- If AR/AS is ON and the Auto Reverse/Auto Stop option is set to Auto Stop, the machine will stop when the actuator arm is tripped.
- If AR/AS is OFF, the machine will stop when the actuator arm is tripped.

If the machine is NOT equipped with a drive unit mounted end-of-field stop/auto reverse, leave AR/AS OFF.

CAUTION

WHEN A MACHINE MUST REVERSE AROUND AN OBSTACLE, A DRIVE UNIT MOUNTED END OF FIELD STOP/ AUTO REVERSE MUST BE INSTALLED WITH PHYSICAL BARRIERS AS A SAFETY BACK-UP.

Setting AR/AS

To turn AR/AS ON or OFF, follow these steps:

1. At the status screen press , , , , and  to display the AR/AS screen. See figure 32-2.

2. Turn the AR/AS ON or OFF:

 = ON

 = OFF

0 EXIT	3 PERCENT TIMER	6 ENGINE/PUMP
1 WIND	4 LOW VOLTAGE	7 COM PORT
2 AR/AS	5 DIR OFFSET	8 OTHER
AR/AS 1..ON 0..OFF (OFF) > X		

Figure 32-2

Valley AutoPilot Control Panel

System

Constants (continued)

Percent Timer

Percent Timer is used to set the percent timer Cycle Time. The Cycle Time is factory set at 60 seconds. When the Cycle Time is set at 60 seconds and the percent timer is set at 50 percent, the end tower will move for 30 seconds of each minute. The Cycle Time can be set from 20 to 200 seconds. The standard percent timer cycle time is 60 seconds.

CAUTION

INCREASING THE CYCLE TIME SETTING OVER 60 SECONDS MAY CAUSE UNEVEN WATER DISTRIBUTION.

Setting Percent Timer

To set the Percent Timer Cycle Time, follow these steps:

1. At the status screen press , , , , and  to display the Percent Timer Cycle screen. See figure 33-1.
2. Enter the Percent Timer Cycle Time in seconds. Press  to retain the value.

```
0 EXIT          3 PERCENT TIMER  6 ENGINE/PUMP
1 WIND         4 LOW VOLTAGE   7 COM PORT
2 AR/AS       5 DIR OFFSET   8 OTHER
PERCENT TIMER CYCLE IN SEC. ( 60 ) > XX
```

Figure 33-1

Low Voltage

Low Voltage is used to set the low voltage limit. The low voltage limit is factory set to 440 volts for use with a supply voltage of 480 VAC @ 60Hz. Recommended low voltage limits for other supply voltages are shown below in the Recommended Low Voltage chart. See figure 33-2.

Nominal Supply Voltage	Recommended Low Voltage Setting	Maximum Supply Voltage
480 VAC @ 60Hz	440 VAC	505 VAC
415 VAC @ 50Hz	375 VAC	420 VAC
400 VAC @ 50Hz	365 VAC	420 VAC
380 VAC @ 50Hz	355 VAC	420 VAC

Figure 33-2

CAUTION

- DO NOT SET LOW VOLTAGE LOWER THAN THE RECOMMENDED LOW VOLTAGE LIMIT.
- LOW VOLTAGE WILL DAMAGE THE DRIVE MOTORS AND OTHER ELECTRICAL COMPONENTS.
- CORRECT THE PROBLEM BEFORE RESUMING OPERATION.

If the control panel voltmeter senses voltage below the low voltage limit, a built-in timer keeps the machine running for up to 15 seconds to prevent nuisance shutdowns due to voltage fluctuations. If the low voltage condition still exists after 15 seconds, the machine will be shutdown and the diagnostics screen will display a fault for machine power.

Setting Low Voltage

To set the Low Voltage Limit, follow these steps:

1. At the status screen press , , , , and  to display the Low Voltage screen. See figure 33-3.
2. Enter the desired low voltage limit. Press  to retain the value.

```
0 EXIT          3 PERCENT TIMER  6 ENGINE/PUMP
1 WIND         4 LOW VOLTAGE   7 COM PORT
2 AR/AS       5 DIR OFFSET   8 OTHER
LOW VOLTAGE LIMIT ( 440 ) >
```

Figure 33-3

Valley AutoPilot Control Panel

System

Constants (continued)

Dir Offset

Direction Offset is used to adjust or offset the actual pivot position of the machine so that the end-gun on/off locations, wide boundary on/off locations, stop-in-slot locations, or any other position based command locations are repeatable when the direction of the machine is changed. A repeatable accuracy of $\pm 1^\circ$ can be expected. The direction offset factory default setting is 0.5° and is adjustable from 0° and 10° .

Estimating The Direction Offset

- If after changing directions in a pivot zone, the machine runs/stops past the normal end-gun on/off locations, wide boundary on/off locations, stop-in-slot location, or any other position based program locations by an estimated value of 1.0° , then the direction offset needs to be increased by $1/2$ of the estimated value, which in this case is 0.5° . See figure 34-1.
- If after changing directions in a pivot zone, the machine runs/stops short of the normal end-gun on/off locations, wide boundary on/off locations, stop-in-slot location, or any other position based program locations by an estimated value of 1.0° , then the direction offset needs to be decreased by $1/2$ of the estimated value, which in this case is 0.5° . See figure 34-1.

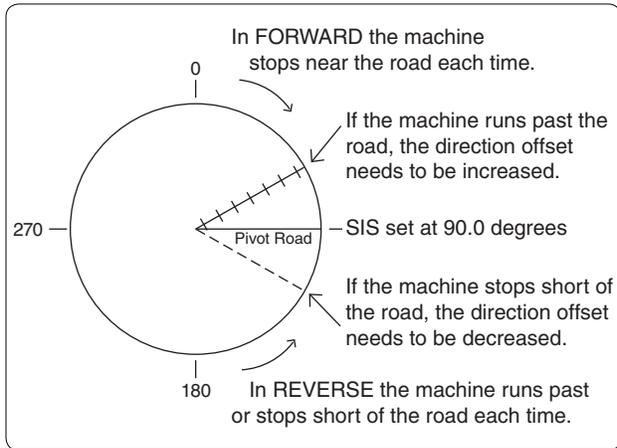


Figure 34-1

1. Measure the distance in feet from where the machine stopped to where it should have stopped. This is the measured offset.

Measured Offset _____

Machine Length (Feet)	115	230	345	460	575	690	805	920	1035	1150	1265	1380	1495	1610	1725
1 Degree Offset (Feet)	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30

Machine Length (Meters)	35.0	70.1	105.1	140.2	175.2	210.3	245.3	280.4	315.4	350.5	385.5	420.6	455.6	490.7	525.7
1 Degree Offset (Meters)	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.7	7.3	7.9	8.5	9.1

Figure 34-2

2. The table below is the approximate length of a 1° offset, based on machine length. Find and record the approximate 1° offset for your machine length. See figure 34-2.

Approximate Offset _____

3. Calculate the value for the estimated offset, based on whether the machine runs/stops past or short of the position. Then set the new direction offset for pivot zones.

Machine Runs/Stops Past Position

Estimated Direction Offset	=	Current Direction Offset	+	(Measured Offset	÷	Approx. Offset)
						2		
	=	_____	+	(_____	÷	_____)
						2		
	=	_____	+	_____		2		
	=	_____	+	_____				
	=	_____						

Machine Runs/Stops Short of Position

Estimated Direction Offset	=	Current Direction Offset	-	(Measured Offset	÷	Approx. Offset)
						2		
	=	_____	-	(_____	÷	_____)
						2		
	=	_____	-	_____		2		
	=	_____	-	_____				
	=	_____						

Constants (continued)

Dir Offset (continued)

Calculating Direction Offset

To calculate the direction offset value follow these steps:

1. While in a pivot zone, start the machine in the forward or reverse running direction and watch the position reading on the status screen. For this example, the running direction used is reverse.

When the position changes by at least 7°, stop the machine. This indicates that the resolver is now turning as the pivot rotates.

2. Place a flag next to the wheel track and in line with the center of the rear wheel on the first regular drive unit. This is position A. See figure 35-1.

In the running direction, opposite to that in step 1, measure a distance of 50 feet from position A, along the FIRST regular drive unit wheel track and place another flag. This is position B. For this example, the opposite running direction is forward. See figure 35-1.

3. Press , , , and  to display the current pivot position of the machine. See figure 35-2.

Record the current position displayed at the bottom of the screen to the nearest tenth of a degree as position A. See figure 35-2.

Position A = _____ Degrees

4. Start the machine in the running direction opposite of that in step 1 and let it run exactly 50 feet. The flag, at position B, should be in line with the center of the rear wheel on the first regular drive unit. Then STOP the machine.

5. Press , , and  to display the current position of the machine. See figure 35-2.

Record the current position displayed at the bottom of the screen to the nearest tenth of a degree as position B. See figure 35-2.

Position B = _____ Degrees

6. Measure the distance in feet from the center of the pivot to the centerline of the tire on the first regular drive unit. This distance is R. See figure 35-3.

R = _____ Feet

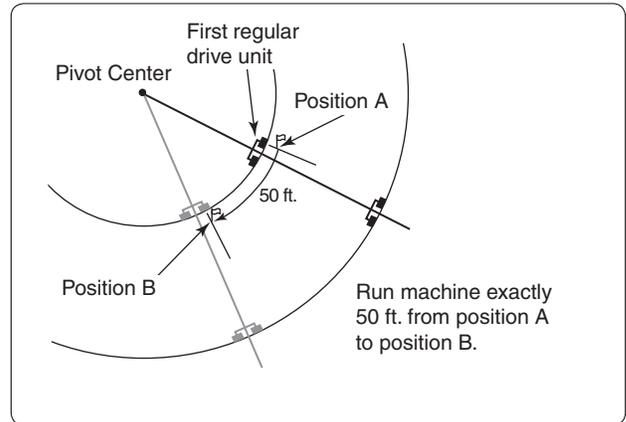


Figure 35-1

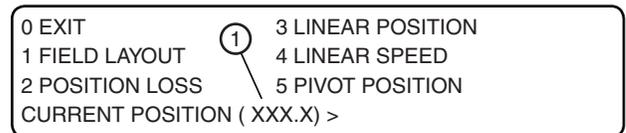


Figure 35-2

1. Current Pivot Position

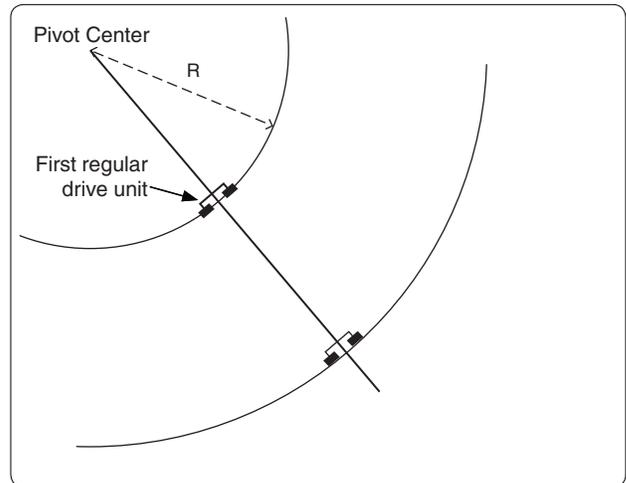


Figure 35-3

Valley AutoPilot Control Panel

System

Constants (continued)

Dir Offset (continued)

Calculating Direction Offset (continued)

- Use the Measured degrees formula to determine how many degrees the pivot should travel in 50 feet. This is the Measured Degrees.
- Use the Actual degrees formula to determine the actual degrees traveled. This is the difference in readings between position A and position B.

NOTE •If this value is negative, drop the negative sign and use as a positive value.

- Press , **1**, **8**, **8**, and **5** to view the direction offset screen. See figure 36-1.

Record the current direction offset displayed at the bottom of the screen. See figure 36-1.

Current Direction Offset = _____

- Calculate the value for the Direction Offset using one of the two formulas shown below. Then set the new direction offset for pivot zones.

If The Actual Degrees Are LESS THAN The Measured Degrees Use The Formula Below.

$$\begin{aligned} \text{Direction Offset} &= \frac{\text{Current Direction Offset} + \left(\frac{\text{Measured Degrees} - \text{Actual Degrees}}{2} \right)}{2} \\ &= \frac{\text{_____} + \left(\frac{\text{_____} - \text{_____}}{2} \right)}{2} \\ &= \frac{\text{_____} + \text{_____}}{2} \\ &= \text{_____} \end{aligned}$$

Measured Degrees Formula

$$\begin{aligned} \text{Measured Degrees} &= (2864.8) / (R) \\ &= (2864.8) / (\text{_____}) \\ &= \text{_____} \end{aligned}$$

Actual Degrees Formula

$$\begin{aligned} \text{Actual Degrees} &= \text{Position B} - \text{Position A} \\ &= (\text{_____}) - (\text{_____}) \\ &= \text{_____} \end{aligned}$$

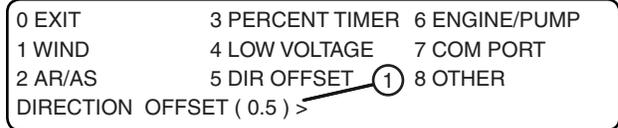


Figure 36-1 1. Current Direction Offset

If The Actual Degrees Are GREATER THAN The Measured Degrees Use The Formula Below.

$$\begin{aligned} \text{Direction Offset} &= \frac{\text{Current Direction Offset} - \left(\frac{\text{Actual Degrees} - \text{Measured Degrees}}{2} \right)}{2} \\ &= \frac{\text{_____} - \left(\frac{\text{_____} - \text{_____}}{2} \right)}{2} \\ &= \frac{\text{_____} - \text{_____}}{2} \\ &= \text{_____} \end{aligned}$$

Setting Dir Offset

To set the Direction Offset for pivot zones, follow these steps:

- At the status screen press , **1**, **8**, **8**, and **5** to display the Pivot Direction Offset screen. See figure 36-2.
- Enter the desired Pivot Direction Offset value. Press  to retain the value.

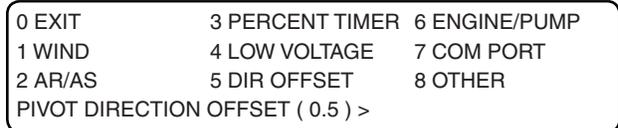


Figure 36-2

Constants (continued)

Engine/Pump

Engine/Pump is used to select and control the type of pumping unit that is being used with the machine.

Engine indicates a combustion engine is being used as the power for operating the pump. The Engine mode will keep the pump safety relay engaged while the machine is running, water ON or water OFF, and disengage the relay when the machine is stopped.

Pump designates an electric motor is being used to operate the pumping unit. The Pump mode will engage the pump safety relay when the water is turned on and disengage the relay when the water is turned off.

Setting Engine/Pump

To set the control panel to Engine or Pump, follow these steps:

1. At the status screen press , **1**, **8**, **8**, and **6** to display the Engine/Pump screen. See figure 37-1.

2. Select the type of pumping unit:

1 = ENGINE

0 = PUMP

3. If the pumping unit is Engine driven select the shutdown sequence. See figure 37-2.

1 = NORMAL

0 = ALT (recommended)

- NORMAL will stop the machine and disengage the engine simultaneously after a 3.0 second delay. However, this will incorrectly log a safety shutdown as a power fault.
- ALTERNATE will stop the machine after 1.5 seconds, allow 1.5 seconds for the Pro2 module to save the updated status, then disengage the engine.

The ALT shutdown sequence is required for saving the event in the history Review screen and the Diagnostics log before power is gone.

```
0 EXIT          3 PERCENT TIMER  6 ENGINE/PUMP
1 WIND         4 LOW VOLTAGE   7 COM PORT
2 AR/AS        5 DIR OFFSET   8 OTHER
1..ENGINE 0..PUMP ( PUMP ) >
```

Figure 37-1

```
0 EXIT          3 PERCENT TIMER  6 ENGINE/PUMP
1 WIND         4 LOW VOLTAGE   7 COM PORT
2 AR/AS        5 DIR OFFSET   8 OTHER
SHUTDOWN 1..NORMAL 0..ALT ( 0 ) >
```

Figure 37-2

Valley AutoPilot Control Panel

System

Constants (continued)

Com Port

Com Port is used to set the control panel communications port, protocol, and rate that information is transmitted and received when communicating with another computer. The Baud rate must be set to match the other computer or communications equipment connected to the Pro2 control module.

- The 9-Pin Com Port is used as the telemetry connection for remote communications. The Baud rate is factory set at 9600.
- The 25-Pin Com Port is used for direct connections to an option or by Valley Dealers for service related functions. The Baud rate is factory set at 57600.
- The 9-Pin Protocol is factory set to Remote Ctl.
- The 25-Pin Protocol is factory set to Service Tool.

Setting Com Port

To set communications port, baud rate, and protocol, follow these steps:

1. At the status screen press , **1**, **8**, **8**, and **7** to display the Com Port screen. See figure 38-1.

2. Select the desired communications port:

1 = 9-Pin Com Port

2 = 25-Pin Com Port

3. Press **2** for Baud Rate. Selections 3, 4, and 5 may not appear. See figure 38-2.

4. Select the Baud Rate for the communications port. See figure 38-3.

1 = 300 **5** = 19200

2 = 1200 **6** = 38400

3 = 9600 **7** = 57600

4 = 14400 **8** = 115200

5. Press **1** for Protocol. Selections 3, 4, and 5 may not appear on the display screen. See figure 38-4.

6. Select the desired Protocol for the communications port. See figure 38-5.

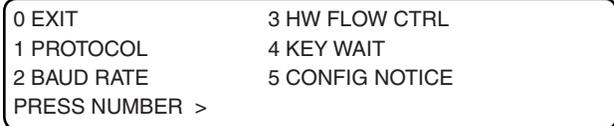
1 = Remote Ctl **3** = Water Scout

2 = Service Tool **6** = GPS



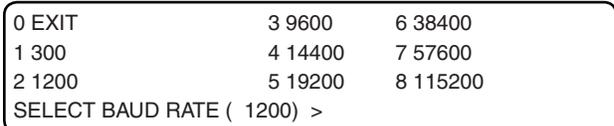
```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 38-1



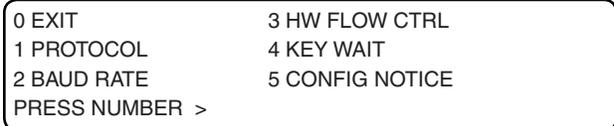
```
0 EXIT
1 PROTOCOL
2 BAUD RATE
3 HW FLOW CTRL
4 KEY WAIT
5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 38-2



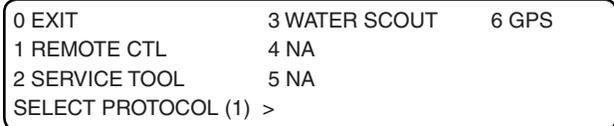
```
0 EXIT
1 300
2 1200
3 9600
4 14400
5 19200
6 38400
7 57600
8 115200
SELECT BAUD RATE ( 1200 ) >
```

Figure 38-3



```
0 EXIT
1 PROTOCOL
2 BAUD RATE
3 HW FLOW CTRL
4 KEY WAIT
5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 38-4



```
0 EXIT
1 REMOTE CTL
2 SERVICE TOOL
3 WATER SCOUT
4 NA
5 NA
6 GPS
SELECT PROTOCOL (1) >
```

Figure 38-5

NOTE •A protocol can be used by either com port, but it cannot be used by both com ports at the same time.

Valley AutoPilot Control Panel

System

Constants (continued)

Hardware Flow Control (For Notice Callout Only)

To set the Hardware Flow Control to be used by the control panel, do the following:

NOTE •Hardware Flow Control is only available when the Com Port Protocol has been setup as Remote Control.

1. Press , **1**, **8**, **8**, and **7** to display the Com Port screen. See figure 39-1.
2. Press **1** for 9-Pin or **2** for 25-Pin Com Port.
3. Select **3** to view the Hardware Flow Control screen. See figure 39-2.
4. Select the desired type of Hardware Flow Control. See figure 39-3.
 - Press **0** for NONE
(Phone Link, Digital Cellular Modem, or SSR)

OR

- Press **1** for CTS*
(300 baud/1200 baud radio modem)

OR

- Press **2** for DCD*
(DataRadio)

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 39-1

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL           4 KEY WAIT
2 BAUD RATE          5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 39-2

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL           4 KEY WAIT
2 BAUD RATE          5 CONFIG NOTICE
FLOW CTL 0..NONE 1..CTS 2..DCD (NONE) > X
```

Figure 39-3

* Set to None if hardware does not support CTS or DCD.

Key Wait

To set the Key Wait time, follow these steps:

NOTE •Key Wait is only available when the Com Port Protocol has been setup as Remote Control.

1. Press , **1**, **8**, **8**, and **7** to display the Com Port screen. See figure 39-4.
2. Press **1** for 9-Pin or **2** for 25-Pin Com Port.
3. Select **4** to view the Key Wait screen. See figure 39-5.
4. Enter the desired Key Wait time. Press  to retain the value. See figure 39-6.

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 39-4

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL           4 KEY WAIT
2 BAUD RATE          5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 39-5

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL           4 KEY WAIT
2 BAUD RATE          5 CONFIG NOTICE
KEY WAIT ( 1.0 ) >
```

Figure 39-6

Valley AutoPilot Control Panel

System

Constants (continued)

Config Notice

Use Config Notice to setup the control panel for communications with BaseStation2. Configure the following according to the application and the communications hardware used at the control panel and the BaseStation2.

NOTE •Config Notice is only available when the Com Port Protocol has been setup as Remote Control.

To get to the Config Notice screen:

1. Press , , , , and  to display the Com Port screen. See figure 40-1.
2. Select the desired communications port:
 -  = 9-Pin Com Port
 -  = 25-Pin Com Port
3. Select  to view the Config Notice screen. See figure 40-2.
4. Press one of the following, see figure 40-3:
 -  = Base ID
 -  = Modem Type
 -  = Callout Tries
 -  = Radio Hop or Phone Number
 -  = Notice On/Off

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 40-1

```
0 EXIT          3 HW FLOW CTRL
1 PROTOCOL     4 KEY WAIT
2 BAUD RATE    5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 40-2

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID       4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
BASE ID ( 999 ) > XXX
```

Figure 40-3

Base ID (For Notice Callout Only)

To set the BaseStation2 identification number in the control panel, do the following:

1. Press , , , , and  to display the Com Port screen. See figure 40-4.
2. Select the desired communications port:
 -  = 9-Pin Com Port
 -  = 25-Pin Com Port
3. Select  to view the Config Notice screen. See figure 40-5.
4. Select  to view the Base ID screen. See figure 40-6.
5. Enter the three digit BaseStation2 RTU ID number.
Press  to retain the value.

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 40-4

```
0 EXIT          3 HW FLOW CTRL
1 PROTOCOL     4 KEY WAIT
2 BAUD RATE    5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 40-5

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID       4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
BASE ID ( 999 ) > XXX
```

Figure 40-6

Constants (continued)

Modem Type (For Notice Callout Only)

To set the type of communication device being used by the control panel, do the following:

1. Press , , , , and  to display the Com Port screen. See figure 41-1.

2. Select the desired communications port:

 = 9-Pin Com Port

 = 25-Pin Com Port

3. Select  to view the Config Notice screen. See figure 41-2.

4. Select  to view the Modem Type screen. See figure 41-3.

5. Select the number associated with the type of communication device:

- Press  for RADIO, (changes configure menu item number 4 to RADIO HOP).

OR

- Press  for PHONE, (changes configure menu item number 4 to PHONE NUMBER).

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 41-1

```
0 EXIT          3 HW FLOW CTRL
1 PROTOCOL     4 KEY WAIT
2 BAUD RATE    5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 41-2

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID      4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
MODEM 0..RADIO 1..PHONE ( 0 ) > X
```

Figure 41-3

Callout Tries (For Notice Callout Only)

To set the number of Callout Tries that the control panel will make to the BaseStation2 before abandoning the call and deleting the data:

1. Press , , , , and  to display the Com Port screen. See figure 41-4.

2. Select the desired communications port:

 = 9-Pin Com Port

 = 25-Pin Com Port

3. Select  to view the Config Notice screen. See figure 41-5.

4. Select  to view the Callout Tries screen. See figure 41-6.

5. Enter the desired number of callout tries. Press

 to retain the value.

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 41-4

```
0 EXIT          3 HW FLOW CTRL
1 PROTOCOL     4 KEY WAIT
2 BAUD RATE    5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 41-5

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID      4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
CALLOUT TRIES ( 2 ) > X
```

Figure 41-6

Valley AutoPilot Control Panel

System

Constants (continued)

Radio Hop (For Notice Callout Only)

If Modem Type is set to Radio and the communication system uses an Intermediate Unit (radio) to pass data from the control panel, on to the BaseStation2, use Radio Hop to setup the Intermediate Unit ID to be used by the control panel. To setup the Intermediate Unit ID, do the following:

1. Press , , , , and  to display the Com Port screen. See figure 42-1.
2. Select the desired communications port:
 -  = 9-Pin Com Port
 -  = 25-Pin Com Port
3. Select  to view the Config Notice screen. See figure 42-2.
4. Select  to view the Radio Hop screen. See figure 42-3.
5. Do one of the following:
 - Press  for ON
 - OR**
 - Press  for OFF
6. Enter the three digit intermediate Unit ID number.
 - Press  to retain the value. See figure 42-4.

NOTE •Radio Hop is only displayed when the Modem Type is set to Radio.

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 42-1

```
0 EXIT          3 HW FLOW CTRL
1 PROTOCOL     4 KEY WAIT
2 BAUD RATE    5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 42-2

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID      4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
RADIO HOP 1..ON 0..OFF ( OFF ) > X
```

Figure 42-3

```
0 EXIT          3 CALLOUT TRIES
1 BASE ID      4 RADIO HOP
2 MODEM TYPE   5 NOTICE ON/OFF
INTERMEDIATE UNIT ID ( 000 ) > XXX
```

Figure 42-4

Valley AutoPilot Control Panel

System

Constants (continued)

Phone Number (For Notice Callout Only)

If Modem Type is set to Phone, use Phone to setup the BaseStation2 phone number to be used by the control panel. To set the phone number, do the following:

1. Press , , , , and  to display the Com Port screen. See figure 43-1.
2. Select the desired communications port:
 -  = 9-Pin Com Port
 -  = 25-Pin Com Port
3. Select  to view the Config Notice screen. See figure 43-2.
4. Select  to view the Phone Number screen. See figure 43-3.
5. Enter the ten digit BaseStation2 phone number without dashes. Press  to retain the value.

NOTE •Phone is only displayed when the Modem Type is set to Phone.

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 43-1

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL            4 KEY WAIT
2 BAUD RATE           5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 43-2

```
0 EXIT                3 CALLOUT TRIES
1 BASE ID             4 PHONE NUMBER
2 MODEM TYPE          5 NOTICE ON/OFF
PHONE (XXXXXXXXXX) > XXXXXXXXXXXX
```

Figure 43-3

Notice On/Off

To activate or deactivate the config notice constant, do the following:

1. Press , , , , and  to display the Com Port screen. See figure 43-4.
2. Select the desired communications port:
 -  = 9-Pin Com Port
 -  = 25-Pin Com Port
3. Select  to view the Config Notice screen. See figure 43-5.
4. Select  to view the Notice On/Off screen. See figure 43-6.
5. Select Notice ON or OFF:
 -  = On
 -  = Off

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

Figure 43-4

```
0 EXIT                3 HW FLOW CTRL
1 PROTOCOL            4 KEY WAIT
2 BAUD RATE           5 CONFIG NOTICE
PRESS NUMBER >
```

Figure 43-5

```
0 EXIT                3 CALLOUT TRIES
1 BASE ID             4 RADIO HOP
2 MODEM TYPE          5 NOTICE ON/OFF
NOTICE (OFF) 1..ON 0..OFF >
```

Figure 43-6

Valley AutoPilot Control Panel

System

Constants (continued)

Pres Cal

Pres Cal is used when the pump is OFF and the machine is dry to adjust the current water pressure reading to zero.

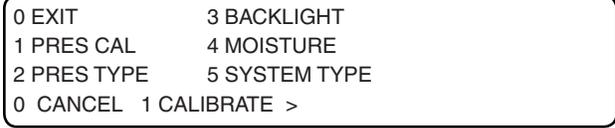
Setting Pres Cal

To adjust the current water pressure reading to zero, follow these steps:

1. Make sure pump is OFF and the machine is dry.

Press , , , , , and  to display the Pressure Calibration screen. See figure 44-1.

2. Press  to calibrate pressure or press  to cancel.



```
0 EXIT          3 BACKLIGHT
1 PRES CAL     4 MOISTURE
2 PRES TYPE    5 SYSTEM TYPE
0 CANCEL  1 CALIBRATE >
```

Figure 44-1

NOTE • Pump must be off before calibrating the water pressure. If water pressure is present during the calibration, the operator must recalibrate with the water pressure OFF.

Pres Type

Pres Type is used to set the type of pressure sensor being used on the machine. The Pres Type is factory set to Absolute. There are three Pressure Type settings available:

- Ratiometric - pressure transducer.
- Absolute - pressure transducer.
- Pressure Switch - mechanical pressure switch.

Setting Pres Type

To set pressure sensor type, follow these steps:

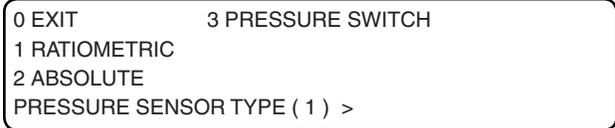
1. Press , , , , , and  to display the Pressure Type screen. See figure 44-2.

2. Select the type of pressure sensor being used:

 = Ratiometric

 = Absolute

 = Pressure Switch



```
0 EXIT          3 PRESSURE SWITCH
1 RATIOMETRIC
2 ABSOLUTE
PRESSURE SENSOR TYPE ( 1 ) >
```

Figure 44-2

Constants (continued)

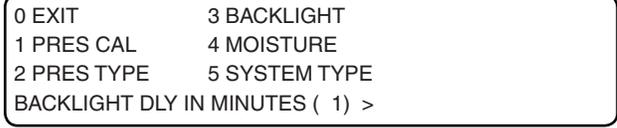
Backlight

Backlight is used to set the backlight delay time. After the selected number of minute(s) without activity on the keypad the backlight will shut off. The backlight delay is factory set to 1 minute.

Setting Backlight

To set the Backlight Delay, follow these steps:

1. Press , **1**, **8**, **8**, **8**, and **3** to display the Backlight Delay screen. See figure 45-1.
2. Enter the desired delay time in minutes. Press  to retain the value.



```
0 EXIT          3 BACKLIGHT
1 PRES CAL     4 MOISTURE
2 PRES TYPE    5 SYSTEM TYPE
BACKLIGHT DLY IN MINUTES ( 1 ) >
```

Figure 45-1

Moisture

Moisture is used to set the soil probe type and constants for Water Scout.

Setting Moisture

To set soil probe type and constants, follow these steps:

1. Press , **1**, **8**, **8**, **8**, and **4** to display the Moisture probe screen. See figure 45-2.
2. Select the soil probe number.
3. Select each moisture probe constant and enter the constant value.



```
0 EXIT
1 DCP-20IN-3SENSOR  3 DCP-40IN-3SENSOR
2 DCP-20IN-5SENSOR  4 DCP-40IN-5SENSOR
SELECT PROBE ( 4 ) >
```

Figure 45-2

System Type

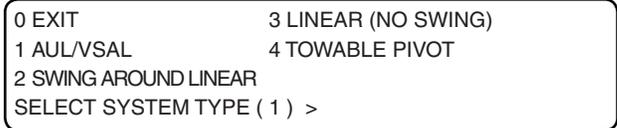
System Type is used to set the system type of the machine being controlled. There are four System Types available:

- AUL/VSAL
 - AUL = Auto Universal Linear
 - VSAL = Valley Swing Around Linear
- Swing Around Linear
- Linear (No Swing), Standard Linear
- Towable Pivot

Setting System Type

To set the System Type, follow these steps:

1. Press , **1**, **8**, **8**, **8**, and **5** to display the System Type screen. See figure 45-3.
2. Select the System Type of machine being controlled.



```
0 EXIT          3 LINEAR (NO SWING)
1 AUL/VSAL     4 TOWABLE PIVOT
2 SWING AROUND LINEAR
SELECT SYSTEM TYPE ( 1 ) >
```

Figure 45-3

Valley AutoPilot Control Panel

System

Data

Data is used to review machine information collected by the control panel. There are five Data Types available:

- A/D - review analog voltages for troubleshooting.
- Pulse - review electrical pulse counters and rates for troubleshooting.
- Modules - review the status of selected relays for troubleshooting.
- Flow/Wind - review flowmeter and wind speed information from the flowmeter option and the wind speed indicator option.
- Moisture - review moisture readings from a soil probe when Water Scout option is installed.

0 EXIT	3 MODULES
1 A/D	4 FLOW/WIND
2 PULSE	5 MOISTURE
PRESS NUMBER >	

Figure 46-1

Reviewing Data

To review data, follow these steps:

1. Press  and  to display the Data screen. See figure 46-1.
2. Select the data to be displayed.

A/D - Analog to Digital Voltages

A/D is used to review analog voltages. There are eight analog channels, numbered 0 through 7, to monitor voltage feedback:

- Channel 0 and 1 monitor two voltage signals from the resolver, located in the collector ring. These voltages will change as the pivot moves and are used to calculate the position of the pivot in degrees. The voltage readings should be between 0 and 5000 mV.
- Channel 2 is not used but may display random values which should be ignored.
- Channel 3 monitors voltage from the pressure transducer. This voltage will vary as pressure increases and decreases and it is converted into a pressure reading in either pounds per square inch (psi) or kilopascals (kPa). This voltage will vary between 1000 mV [0 psi (0 kPa)] and 4000 mV [200 psi (1387 kPa)].
- Channel 4 monitors machine voltage. This value varies as the voltage to the machine varies from the power source.
- Channel 5 displays one half of the voltage available to the pressure transducer. The voltage should always be around 2500 mV.
- Channel 6 displays resolver bias reference voltage. The voltage should be around 2500 mV.
- Channel 7 is not used but may display random values which should be ignored.

Data (continued)

Reviewing A/D

To review analog voltages, do the following:

1. Press , , and  to display the A/D screen. See figure 47-1.

ANALOG VOLTAGES			
0 4326	2 0	4 3005	6 2506
1 2957	3 1495	5 2565	7 0
PRESS ANY KEY > 0/1 = 13.9 -> 14.4			

Figure 47-1

Pulse

Pulse is used to review pulse counts from external equipment such as the flowmeter and wind meter. There are three pulse channels, numbered 0 through 2, to count electrical pulses from external equipment:

- Channel 0 is reserved for the flowmeter option. The flowmeter propeller will produce a certain number of electrical pulses per gallon or liter (example would be 1.250 pulses per gallon).
 - Counter Reading for channel 0, counts and totals the electrical pulses from the flowmeter. This value is converted to millions of gallons or cubic meters and is displayed as total flow in the FLOW/WIND screen.
 - Pulses Per Minute for channel 0, provides the rate of pulses from the flowmeter in pulses per minute. This value is converted to gallons per minute or liters per second and is displayed as flowmeter in the FLOW/WIND screen.
- Channel 1 is reserved for the wind speed indicator option. The wind speed pulses are provided by an anemometer. Two pulses are recorded for each turn of the anemometer.
 - Counter Reading for channel 1, counts and totals the electrical pulses from the anemometer. This value is NOT converted or displayed in the FLOW/WIND screen.
 - Pulses Per Minute for channel 1, provides the rate of pulses from the anemometer in pulses per minute. This value is converted to miles per hour or meters per second and is displayed as wind speed in the FLOW/WIND screen.
- Channel 2 is for expansion purposes.

Reviewing Pulse

To review pulse count totals and rates do the following:

1. Press , , and  to display the Pulse screen. See figure 47-2.

COUNTER	0	0	PULSES	0	0
READING	1	0	PER	1	0
	2	0	MINUTE	2	0
PRESS ANY KEY >					

Figure 47-2

Valley AutoPilot Control Panel

System

Data (continued)

Modules

Modules are used to review the condition or the control of all input and output relays used to monitor and control the machine. The following relay conditions are displayed on the modules screen:

- Pressure indicates if the water pressure is above or below the low pressure limit.
 - » ON indicates a pressure higher than the low pressure limit.
 - » OFF indicates a pressure lower than the low pressure limit.

NOTE •If a mechanical pressure switch is used, ON indicates closed and OFF indicates open.

- AuxOut1/AuxOut2 monitors the contacts of the relays that control voltage from the panel to auxiliary equipment.
 - » ON indicates the contacts are closed.
 - » OFF indicates the contacts are open.
- AuxIn1/AuxIn2 monitors feedback to the panel from auxiliary equipment. These are 120 volt relays and can be wired to monitor AuxOut1 and AuxOut2 as shown on the wiring diagram on the control panel door.
- Module is another name for a relay. The machine is controlled by a series of relays located in the control panel. Each relay will either be closed (ON) or open (OFF) as the machine is operating. A list of the module numbers and their corresponding relay is shown in figure 48-1.

The user can enter a module number and it will be monitored in the upper right hand corner of the screen as shown in figure 48-1.

Reviewing Modules

To review module relays, do the following:

1. Press , 2, and 3 to display the Modules screen. See figure 48-2.
2. To review a specific module/relay, press 1 to display the modules request screen.
3. Enter the desired module number. See figure 48-3.
4. Press  to display the selected module. See figure 48-4.

MODULE NUMBER	RELAY NUMBER	FUNCTION DESCRIPTION	RELAY BOARD TERMINAL
0	K1	Safety Out	J5-1
1	K2	Percent Timer	J5-2
2	K7	End-gun	J13-5
3	K8	Wide Boundary	J13-6
4	K6	Pump Safety	J13-1, 2, 3
5	K9	Alarm	J6-1, 2, 3
6	K12	Auxiliary 1 Output	J7-1, 2
7	K13	Auxiliary 2 Output	J7-3, 4
8	K4	Contactor Enable	J5-5, 6
9	K3	Direction (Forward=ON, Reverse=OFF)	J5-3, 4
10	D03	Control Panel Backlight	J15-5
11	D02	TTL Output 2	J15-4
12	D01	TTL Output 1	J15-3
13	R01	Phase Reversal	J15-1
14	R02	Pivot / Linear	J15-2
15		Not Used	
16		Remote Start	J6-5
17		Pressure	J6-4
18	K5	3 Second timer	
19	K15	Auxiliary 2 Input	J7-7, 8
20	K14	Auxiliary 1 Input	J7-5, 6
21	K10	Reverse Sense	J5-4
22	K11	Forward Sense	J5-3
23	K5	Safety Sense	J5-7
24	PC4	Span / Cart Align.	J16-9
25	PC5	First Tower Run Time	J16-10

Figure 48-1

```

0 EXIT      PRESSURE...OFF  MODULE 0   OFF
1 MODULE    AUXOUT1.....OFF  AUXIN1.....OFF
            AUXOUT2.....OFF  AUXIN2.....OFF
PRESS NUMBER >
    
```

Figure 48-2

```

0 EXIT      PRESSURE...OFF  MODULE 0   OFF
1 MODULE    AUXOUT1.....OFF  AUXIN1.....OFF
            AUXOUT2.....OFF  AUXIN2.....OFF
ENTER MODULE NUMBER > 22
    
```

Figure 48-3

```

0 EXIT      PRESSURE...OFF  MODULE 22  ON
1 MODULE    AUXOUT1.....OFF  AUXIN1.....OFF
            AUXOUT2.....OFF  AUXIN2.....OFF
PRESS NUMBER >
    
```

Figure 48-4

Valley AutoPilot Control Panel

System

Data (continued)

Flow/Wind

Flow/Wind provides flowmeter and wind speed information from the flowmeter option and the wind speed indicator option.

- Total flow is displayed in millions of gallons or cubic meters.
- Flow rate is displayed in gallons per minute or liters per second.
- Wind speed is displayed in miles per hour or meters per second.

Reviewing Flow/Wind

To review flow/wind information, do the following:

1. Press , **2**, and **4** to display the Flow/Wind screen. See figure 49-1.

TOTAL FLOW.....(MIL. GAL.)	0.000
FLOWMETER.....(GAL. MIN.)	0
WIND SPEED.....(MPH)	1
PRESS ANY KEY >	

Figure 49-1

Moisture

Moisture provides soil moisture information from the Water Scout option. The control panel collects data from the soil probe at the top of every hour and stores up to 7 days of data. Every time new data is collected, the oldest hourly data from 7 days ago is deleted. After being deleted, data cannot be retrieved.

- Soil Depth is the depth of each soil probe sensor based on the soil probe selected during installation. The soil depth is shown in either inches or centimeters depending on the control module unit's setting.
- Current is the most current reading from each soil probe sensor. The values displayed are used with soil moisture charts in the Water Scout Owner's Manual, Part Number 0997075, to determine the percent of moisture depletion.
- Prior Reading is the change in moisture content between the current reading and the actual prior reading.
 - A negative number indicates the soil is currently dryer than the prior reading. See figure 49-2.
 - A positive number indicates the soil is currently more wet than the prior reading. See figure 49-2.

Reviewing Moisture

To review moisture information, do the following:

1. Press , **2**, and **5** to display the Moisture screen. See figure 49-2.
2. To review a different prior reading, press **1** to display the prior reading request screen. See figure 49-2.
3. Enter the desired number of days prior to the current day, 0 through 7, that the prior reading was taken. See figure 49-3.
4. Enter the desired time of day, 0 through 24, that the prior reading was taken. See figure 49-4.
5. Press  to display the desired prior reading. See figure 49-5.

SOIL DEPTH (IN)	4	12	20	28	36
CURRENT	14	16	11	09	07
PRIOR READING	-02	-02	-01	+00	+00
ACTION (1 GET PRIOR READING, 0 EXIT)					

Figure 49-2

CURRENT	PRIOR READING
07/12/07	07/11/07
11:00	11:00
DAYS PRIOR READING (0-7) > 2	

Figure 49-3

CURRENT	PRIOR READING
07/12/07	07/11/07
11:00	11:00
TIME OF DAY PRIOR READING (0-24) > 11	

Figure 49-4

SOIL DEPTH (IN)	4	12	20	28	36
CURRENT	14	16	11	09	07
PRIOR READING	-04	-03	-02	-01	+00
ACTION (1 GET PRIOR READING, 0 EXIT)					

Figure 49-5

Valley AutoPilot Control Panel

System

Reset

Reset is used to clear the battery backed memory. If Reset is executed, it sets the following machine operating conditions back to default values:

- Direction = Forward
- Water = Water OFF
- SIS = SIS OFF

Using Reset

To reset battery backed memory, follow these steps:

1. Press  and **3** to display the Reset screen. See figure 50-1.
2. Press:

1 = Reset

0 = Exit without resetting

```
***** WARNING! *****  
THIS WILL RESET SYSTEM TO DEFAULTS!  
0..EXIT 1..RESET  
PRESS NUMBER >
```

Figure 50-1

Review

Review provides a record of up to 50 of the most recent machine operation status changes for review. The review screen number is in the lower left hand corner. Review 01 is the newest status change and review 50 is the oldest status change.

Using Review

To review status changes, follow these steps:

1. Press , **4**, and **1** to display the Status Review screen 01. See figure 50-2.
2. To view a different Status Review screen do the following as required:

- Press **1** to search backward toward Status Review screen 50.
- Press **2** to search forward toward Status Review screen 01.

```
AUTO 5 FT. STOPPED  
LINEAR B 0..PSI FORWARD  
484 VOLTS E11 25% WATER ON  
REVIEW. 01 * AUX1..ON * 0.60 IN SIS..ON
```

Figure 50-2

Cycle

Cycle provides the following information about Daily OPS Cycle:

- Cycle Repeat ON or OFF.
- Last Cycle Date.
- Next Cycle Date (Only displayed when Daily OPS-Cycle is ON).

Reviewing Cycle

To review Cycle information, do the following:

1. Press  and **5** to display the Cycle information screen. See figure 50-3.

```
CYCLE REPEAT: ON  
LAST CYCLE: 07/03/07  
NEXT CYCLE: 07/06/07  
PRESS ANY KEY >
```

Figure 50-3

Valley AutoPilot Control Panel

System

Transmit

Transmit sends current status information through an optional communication device such as a radio or telephone to another control panel or base station equipped with a similar communication device. There is a random 0 to 10 second delay prior to the transmission of data.

Using Transmit

To Transmit current status information, do the following:

1. Press  and  to Transmit information. See figure 51-1.

0 EXIT	3 RESET	6 TRANSMIT
1 CONSTANTS	4 REVIEW	7 LANGUAGE
2 DATA	5 CYCLE	8 HOURS
PRESS NUMBER >		

Figure 51-1

Language

Language is used to set the language and units of measure to be displayed on the screen and used in operating the machine.

Standard Inch measurement:

- Application rate in inches (in).
- Linear distance in feet (ft).
- Water pressure in pounds per square inch (psi).
- Date by month/day/year.
- Flow in gallons per minute (gpm) and millions of gallons.

International Metric measurement:

- Application rate in millimeters (mm).
- Linear distance in meters (m)
- Water pressure in kilopascal (kPa),
- Date by day/month/year.
- Flow in liters per second (lps) and cubic meters.

Setting Language And Units Of Measure

To select or change the language or unit of measure, follow the steps below:

1. Press  and  for the Language screen. See figure 51-2.
2. Press the number associated with the desired language:

-  = English
-  = Spanish
-  = French
-  = Italian
-  = Portuguese

3. Press the number associated with the desired unit of measure. See figure 51-3.

-  = Standard Inch measurement.
-  = International Metric measurement.

0 EXIT	3 FRANCAIS
1 ENGLISH	4 ITALIANO
2 ESPANOL	5 PORTUGUES
PRESS NUMBER >	

Figure 51-2

0 EXIT	3 FRANCAIS
1 ENGLISH	4 ITALIANO
2 ESPANOL	5 PORTUGUES
0..IN 1..MM (0) >	

Figure 51-3

Valley AutoPilot Control Panel

System

Hours

Hours will display the cumulative hours of machine operation.

Total Hours will display the cumulative hours of both wet and dry operation. The Total hours can be changed by the operator, but only an increase in total hours will be accepted.

Hours Wet will display only the hours that the machine was operated with water. The Wet Hours can be changed by the operator, an increase or decrease will be accepted.

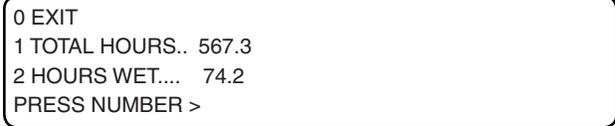
Using Hours

To view or set Total Hours or Hours Wet, follow these steps:

1. Press  and  to view Total Hours and Hours Wet. See figure 52-1.

2. At the Hours screen do one of the following:

- Press  to Exit.
- Press  to increase Total Hours. See figure 52-2.
 - Enter the desired total number of hours, the total number of hours can only be increased. Decimal values are not allowed.
 - Press  to retain the value.
- Press  to adjust Hours Wet. See figure 52-3.
 - Enter the number of hours wet. The number of hours wet can be increased or decreased. Decimal values are not allowed.
 - Press  to retain the value.



```
0 EXIT
1 TOTAL HOURS.. 567.3
2 HOURS WET.... 74.2
PRESS NUMBER >
```

Figure 52-1



```
0 EXIT
1 TOTAL HOURS.. 567.3
2 HOURS WET.... 74.2
HOUR METER ( 567.3 ) >
```

Figure 52-2



```
0 EXIT
1 TOTAL HOURS.. 567.3
2 HOURS WET.... 74.2
HOURS WET ( 74.2 ) >
```

Figure 52-3

Valley AutoPilot Control Panel

Options

Options Screen

From the Options screen the user can change settings or view information at anytime. The following functions can be accessed from the Options screen:

- Aux 1
- Aux 2
- START\$
- STOP\$
- CYCLE\$
- Auto Reverse
- Auto Restart
- Module
- End-Gun
- Wide Boundary
- Notice
- Remote Lockout
- Pivot/Linear

1. Press  for Options screen 1. See figure 53-1.
2. Press 8 for Options screen 2. See figure 53-2.

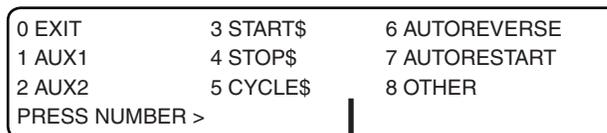


Figure 53-1 Option Screen 1

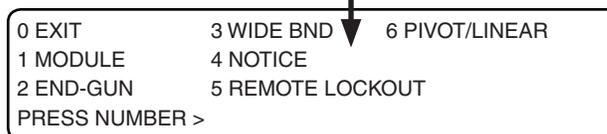


Figure 53-2 Option Screen 2

Auxiliary Relays

Use Aux1 to turn the Auxiliary 1 relay ON (Closed) or OFF (Open). Use Aux2 to turn the Auxiliary 2 relay ON (Closed) or OFF (Open). When a relay is ON, it can control a contactor, solenoid, or other device.

- If Auxiliary relay #1 is ON, it will be displayed on the main status screen. However, if Auxiliary relay #2 is ON, it will not be displayed on the status screen. See figure 53-3.



Figure 53-3

NOTE

- Auxiliaries are intended for irrigation equipment only. Other external uses may cause interference or excessive load on the transformer. Consult with your Valley dealer before using auxiliaries.
- If auxiliary relays #1 or #2 are used to control an injector pump, the schematic for the control panel MUST be followed when wiring. This will ensure operation of the injector pump only with sufficient water pressure.

Using Aux1 or Aux2

To turn Aux1 option or Aux2 option ON or OFF, follow these steps:

1. Select one of the following:

- Press  and 1 to display the Aux1 screen. See figure 53-4.
- Press  and 2 to display the Aux2 screen.



Figure 53-4

2. Select the desired setting:

- 1 = ON
- 0 = OFF

NOTE

- The value shown in parenthesis indicates the current command being used by the control module.

Valley AutoPilot Control Panel

Options

START\$ Program

The START\$ program is a special command string program that does not have a condition for the first step because it is executed immediately when commanded, either by another program or a machine function such as the CYCLE\$ EXECUTE command, the Power Restart option, or the DAILY OPS function. See START\$ Program Examples in the Program Examples section.

The START\$ program is used to command how the machine should start and is used by Power Restart function, CYCLE\$, and Daily OPS. Listed below are two ways that the START\$ can be programmed:

1. Delayed START\$ program: A start up procedure that includes a delay before the Water ON and Start commands.
2. Immediate START\$ program: A start up procedure that only includes the start command.

Listed below are important details about the START\$ program:

- The START\$ can only be programmed for one situation at a time.
- The START\$ program will not automatically start the machine unless the START command is in the START\$ program.
- If AUTORestart is enabled, the power restart function will execute the START\$ program. If running conditions are not specified in the START\$ program, the machine will not start for power restart or pressure restart after a pivot cycle.
- The START\$ program cannot be edited like a Stored Program. To change the START\$ program, the entire START\$ program must be rewritten.



A DELAYED START IS RECOMMENDED TO REDUCED THE POSSIBILITY OF DAMAGE TO AN ELECTRIC PUMP IF POWER IS LOST AND REGAINED IN A SHORT PERIOD OF TIME.

Using Review START\$

To review the START\$ program, follow these steps:

1. Press , **3**, and **1** to display the START\$ Review screen. See figure 54-1.
2. Press any key to advance to the next step of the program or leave the screen.

STEP2 AT: 10 MINUTE DELAY, WATER ON, START,

PRESS ANY KEY >

Figure 54-1

Using Write START\$

To write a delayed START\$ program, follow these steps and see START\$ Program Examples in the Program Example section:

1. Press , **3**, and **2** to display the START\$ Write screen. See figure 54-2.
2. Press for the next step screen. See figure 54-3.

WRITE START\$,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 54-2

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 54-3

Valley AutoPilot Control Panel

Options

START\$ Program (continued) Using Write START\$ (continued)

3. Program step 2 by delay. See figure 55-1.

Press for NEXT STEP.

Press for DELAY.

4. Select the type of delay, either seconds or minutes.
See figure 55-2.

Press for SECONDS.

OR

Press for MINUTES.

For this example use seconds.

5. Enter the appropriate length of delay for the application. See figures 55-3 and 55-4.

For this example use 170 seconds.

Press , , for 170 seconds.

Press to retain the value.

6. Enter the commands for step 2. The command appears on the screen when entered. See figure 55-5.

Press .

7. When finished entering command(s), press .

8. Finish the START\$ program. See figure 55-6.

Press for PROGRAM FINISHED.

The START\$ program is saved.

```
STEP 1 PROGRAM BY:
0 EXIT      2 POSITION  4 DELAY      6 OTHER
1 TIME     3 PRESSURE 5 FOR/REV
PRESS NUMBER >
```

Figure 55-1

```
STEP 2 PROGRAM BY: DELAY
DELAY 0..SECONDS 1..MINUTES > 0
```

Figure 55-2

```
STEP 2 PROGRAM BY: DELAY
ENTER DELAY IN SECONDS > 170
```

Figure 55-3

```
STEP 2 AT: 170 SECONDS DELAY,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 55-4

```
STEP 2 AT: 170 SECONDS DELAY,
START,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 55-5

NOTE •The START\$ program MUST contain the START command.

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 55-6

Using Execute START\$

To immediately Execute the START\$ program, do the following:

1. Press , , and to immediately execute the START\$ program. See figure 55-7.

```
START$
0 EXIT      2 WRITE
1 REVIEW   3 EXECUTE
PRESS NUMBER > 3
```

Figure 55-7

Valley AutoPilot Control Panel

Options

STOP\$ Program

The STOP\$ program is a special command string program that does not have a condition for the first step because it is executed immediately when commanded by the DAILY OPS function. The STOP\$ program is used to command how the machine should stop after it completes its last cycle. See STOP\$ Program Example in the Program Examples section.

Listed below are important details about the STOP\$ program:

- It is not necessary to write the STOP\$ program unless the user wants the machine to do something in addition to the stop command.
- The STOP\$ program by default will stop the machine unless programmed to do otherwise.
- The STOP command is not required to be in the STOP\$ program.
- The STOP\$ program can only be written for one situation at a time.



WARNING

TO REDUCE THE POSSIBILITY OF SEVERE INJURY, DEATH AND/OR MAJOR EQUIPMENT OR PROPERTY DAMAGE, NEVER USE THE START COMMAND IN THE STOP\$ PROGRAM.

Using Review STOP\$

To review the STOP\$ program, follow these steps:

1. Press , **4**, and **1** to display the STOP\$ Review screen. See figure 56-1.
2. Press any key to advance to the next step of the program or leave the screen.

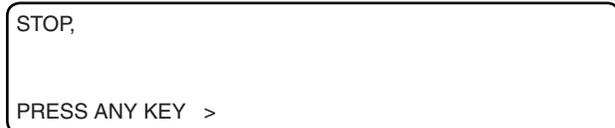


Figure 56-1

Using Write STOP\$

To write a simple STOP\$ program, follow these steps:

1. Press , **4**, and **2** to display the STOP\$ Write screen. See figure 56-2.
2. Enter the desired commands to set the stopping conditions of the machine, then press . See figure 56-3.
3. Press .
4. At the Next Step screen, do one of the following. See figure 56-4.

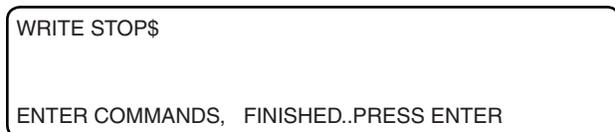


Figure 56-2

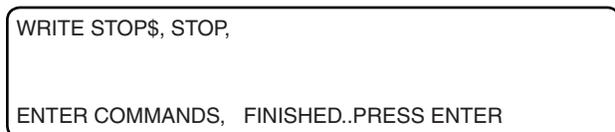


Figure 56-3

- Press **0** to Exit.
- Press **1** for Program Finished to save program.
- Press **2** for Next step, to add another step to the program.

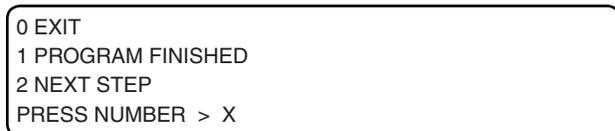


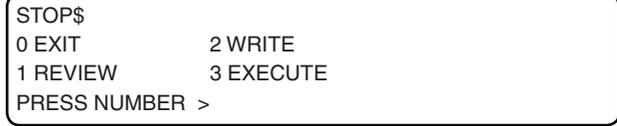
Figure 56-4

STOP\$ Program (continued)

Using Execute STOP\$

To immediately Execute the STOP\$ program, do the following:

1. Press , , and  to immediately Execute the STOP\$ program. See figure 57-1.



```
STOP$
0 EXIT          2 WRITE
1 REVIEW        3 EXECUTE
PRESS NUMBER >
```

Figure 57-1

CYCLE\$ Program

The CYCLE\$ program is a special command string program that does not have a condition for the first step because it is executed immediately when commanded by the CYCLE\$ EXECUTE command or the Daily OPS Cycle function. See CYCLE\$ Program Examples in the Program Examples section.

The CYCLE\$ program allows the operator to repeat a sequence of events for an irrigation cycle. A cycle may consist of one full pass, a full circle, or part circle. The operator commands the equipment to execute a number of cycles, the machine will immediately start, complete the desired number of cycles, and stop after the last cycle is completed.

When using the CYCLE\$ program the Stop-In-Slot must be OFF. If the Stop-In-Slot is ON, the machine will stop at the Stop-In-Slot location after the first cycle.

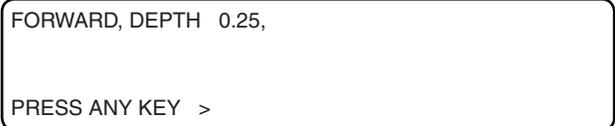
An internal counter uses the Stop-In-Slot position as a reference point for counting the number of cycles that have executed. Each time the machine advances to the Stop-In-Slot position, the CYCLE\$ program is executed and the number of times remaining to execute the CYCLE\$ program is reduced by one.

When the machine has advanced to the Stop-In-Slot position and the number of times to execute the CYCLE\$ program has counted down to zero, the STOP\$ program is executed and the machine stops at the Stop-In-Slot position even though Stop-In-Slot is OFF.

Using Review CYCLE\$

To review the CYCLE\$ program, follow these steps:

1. Press , , and  to display the CYCLE\$ Review screen. See figure 57-2.
2. Press any key to advance to the next step of the program or leave the screen.



```
FORWARD, DEPTH 0.25,
PRESS ANY KEY >
```

Figure 57-2

Valley AutoPilot Control Panel

Options

CYCLE\$ Program (continued)

Write CYCLE\$

Use Write to create the CYCLE\$ program. The CYCLE\$ program first step can immediately execute a command or additional steps can be programmed by condition to execute commands, options, or stored programs. See CYCLE\$ Program Examples in the Program Examples section.

Listed below are important details about writing a CYCLE\$ program:

- The CYCLE\$ program cannot be edited like a Stored Program. To change the CYCLE\$ program, the entire CYCLE\$ program must be rewritten.
- Do not change the machine direction manually or within a stored program. This could cause the CYCLE\$ program to work incorrectly.
- If the machine is irrigating a part circle or is equipped with end-of-field stop/auto-reverse hardware, special consideration will be required for writing and executing the CYCLE\$ program since the machine will pass the Stop-In-Slot position while traveling in both directions.
- The CYCLE\$ program requires that the Stop-In-Slot position be within the boundaries of the part circle.
- DO NOT use the Stop-In-Slot position as a condition in a CYCLE\$ program step or stored program step that is used by the CYCLE\$ program.
- A CYCLE\$ program step or Stored Program step that uses a position that is the same as the Stop-In-Slot position will not be executed because the CYCLE\$ program will restart at its first step.

Available Commands

- Percent
- Depth
- Start
- Stop
- Forward
- Reverse
- Water ON
- Water OFF
- SIS ON
- SIS OFF

Available Options

- Auxiliary 1 ON/OFF
- Auxiliary 2 ON/OFF
- Module
- Autoreverse (when enabled)
- Autorestart

Stored Program

- Any stored step program can be ran from the last step of a CYCLE\$ program.
- **See Run a Stored Program From a Program in the Program section.**

Programming Conditions Available

- Time - Execute commands based on the date and time of day.
- Position - Execute commands based on the position of the machine.
- Pressure - Execute commands based on water pressure.
- Delay - Execute commands based on a time delay in seconds or minutes.
- For/Rev - Execute commands based on direction of machine movement.
- Other Conditions - **See "Other Programming Conditions" in the Program section.**
 - Analog - Execute commands based on an analog channel and its value.
 - Module - Execute commands based on a module's status.
 - Pulse - Execute commands based on counter number and pulse rate.
 - Count - Execute commands based on counter number and count.
 - Zone - Execute commands based on pivot or linear zone.

CYCLE\$ Program (continued)

Using Write CYCLE\$

To write the CYCLE\$ program, follow these steps and see CYCLE\$ Program Examples in the Program Examples section:

1. Press , **5**, and **2** to display the STOP\$ Write screen. See figure 59-1.
2. Enter the desired commands to run the machine.
3. When finished entering command(s), press .
4. At the Next Step screen, do one of the following. See figure 59-2.
 - Press **0** to Exit.
 - Press **1** for Program Finished to save program.
 - Press **2** for Next Step to add another step to the program.
 - Execute CYCLE\$



Figure 59-1

NOTE •During each cycle, the machine **MUST** pass the Stop-In-Slot position in order to execute the CYCLE\$ program again.



Figure 59-2

Use Execute to review, edit, or set the number of irrigation cycles and then execute the CYCLE\$ program. The first execution of the CYCLE\$ program starts after the operator enters the number of cycles to execute or a stored program step with the SET CYCLE command is executed.

When a cycle is executed the machine starts according to the start-up procedure in the START\$ program. The machine completes the desired number of cycles past the Stop-In-Slot position. Each cycle executes commands according to the steps in the CYCLE\$ program. After the machine completes the desired number of cycles, it will stop according to the stop procedure in the STOP\$ program.

Listed below are important details about executing the CYCLE\$ program:

- The number of cycles remaining to be executed can be reviewed and/or edited at any time to add additional cycles or to reduce the number of cycles remaining.
- When CYCLE\$ program is executed the machine starts immediately and *PROGRAM* is displayed on the Status Screen until all commands for that cycle have been executed.
- If the operator stops the machine during a cycle, it can be restarted. The program will resume and complete the cycle(s) as programmed.
- The Stop-In-Slot must be OFF when using the CYCLE\$ program or the Stop-In-Slot function will stop the machine after the first cycle.
- During each cycle, the machine **MUST** pass the Stop-In-Slot position in order to execute the CYCLE\$ program again.

Using Execute CYCLE\$

To Execute the CYCLE\$ program, do the following:

1. Press , **5**, and **3** to display the CYCLE\$ Execute screen. See figure 59-3.
2. Select the number of cycles to run, then press  to immediately execute the CYCLE\$ program.

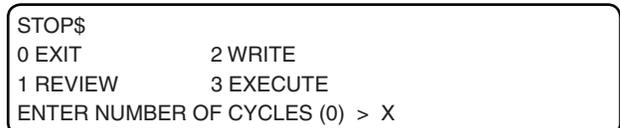


Figure 59-3

Valley AutoPilot Control Panel

Options

CYCLE\$ Program Execute CYCLE\$ (continued)

Using SET CYCLE to Execute CYCLE\$

To execute the CYCLE\$ program at a specific time and date for a set number of cycles, program a step program by the time condition, and use the set cycle command, follow the steps below:

1. Press , **1**, **2**, and **1** to display the TIME screen.
2. Enter the desired date for cycle to begin. Press  to retain the value.
3. Enter the desired time for cycle to begin. Press  to retain the value. See figure 60-1.
4. Press  and **3** to display the set cycle screen.
5. Enter the desired number of cycles to run. Press  to retain the value. See figure 60-2.
6. Press  to finish the step.
7. At the Next Step screen, press **1** for Program Finished. See figure 60-3.
8. At the save screen, do one of the following. See figures 60-4 and 60-5.

- Press **1** to Save Program.
 - Assign program number, 1-17.
 - Press  to save program.
- Press **2** to Save Program and Run.
 - Assign program number, 1-17.
 - Press  to save and run program.
- Press **3** to Cancel Program.

```
STEP 1 AT: 08/08/07 06:30:00,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 60-1

```
STEP 1 AT: 08/08/07 06:30:00,  
SET CYCLE 4,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 60-2

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > X
```

Figure 60-3

```
0 EXIT  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
3 CANCEL PROGRAM  
PRESS NUMBER > X
```

Figure 60-4

```
STORED PROGRAMS  
  
PRESS NUMBER FROM 1 TO 17 TO SAVE  
ENTER PROGRAM NUMBER > X
```

Figure 60-5

Review or Edit Remaining Cycles

The number of cycles remaining to be executed can be reviewed at any time. The number can also be edited to add additional cycles or to reduce the number of cycles remaining.

To Review or Edit the current number of cycles remaining on the CYCLE\$ execute screen, do the following:

1. Press , **5**, and **3** to display the CYCLE\$ Execute screen. See figure 60-6.
2. Do one of the following:
 - Review the current number of cycles remaining (number in parenthesis), then press  to leave the screen without making changes.

OR

- Enter the desired number of cycles to run, then press .

```
STOP$  
0 EXIT  
1 REVIEW  
2 WRITE  
3 EXECUTE  
ENTER NUMBER OF CYCLES (4) > X
```

Figure 60-6

Valley AutoPilot Control Panel

Options

Auto Reverse

Use AUTOREVERSE option to select the desired function of the drive unit mounted end-of-field stop/auto-reverse when the actuator arm is tripped, choose either Auto Reverse or Auto Stop.

To use this option the machine must be equipped with a drive unit mounted end-of-field stop/auto-reverse and Auto Reverse must be enabled by setting the AR/AS Constant to ON.

- If the AR/AS Constant is set to OFF the message "AUTOREVERSE (DISABLED)" will be displayed on the bottom line of the Auto Reverse screen. See figure 61-1.

```
0 EXIT          3 START$       6 AUTOREVERSE
1 AUX1          4 STOP$        7 AUTORESTART
2 AUX2          5 CYCLE$       8 OTHER
AUTOREVERSE ( DISABLED ) >
```

Figure 61-1

If the machine is not equipped with a drive unit mounted end-of-field stop/auto-reverse, the control panel should be programmed to change directions and the Autoreverse option should be ignored.

CAUTION

IF THE MACHINE NEEDS TO REVERSE AROUND AN OBSTACLE SUCH AS A TREE LINE, BUILDING OR FENCE, A DRIVE UNIT MOUNTED END-OF-FIELD STOP/AUTO-REVERSE MUST BE INSTALLED WITH PHYSICAL BARRICADES AS A SAFETY BACK-UP.

Using Auto Reverse

To select the desired Auto Reverse function, follow these steps:

1. Press  and **6** to display the AUTOREVERSE screen. See figure 61-2.
2. Press the number associated with the desired command:

1 = Auto Reverse

0 = Auto Stop

```
0 EXIT          3 START$       6 AUTOREVERSE
1 AUX1          4 STOP$        7 AUTORESTART
2 AUX2          5 CYCLE$       8 OTHER
AUTOREVERSE 1..AR 0..AS ( AS ) >
```

Figure 61-2

NOTE

•The operator must verify that the AR/AS constant is on before using this option.

Auto Restart

Use the Auto Restart option to restart a machine automatically if it was last shut down because of a loss of power or pressure.

When auto restart is ON a "*RESTART*" message will be displayed on the Status Screen to remind the user that the machine is programmed to restart automatically. See figure 61-3.

If the machine is shut down by pressing the Stop key, by the stop-in-slot, or by a programmed shut down, then auto restart is temporarily disabled by the control panel and the "*RESTART*" message disappears from the status screen.

If the operator starts the machine again by pressing the Start key or by a programmed start, then the "*RESTART*" message will appear on the status screen and auto restart will be active again.

```
AUTO          180 DEG  RUNNING
PIVOT A       *RESTART* 33 PSI   FORWARD
477 VOLTS     50 %     WATER ON
48.0 HR       0.50 IN  SIS...90
```

Figure 61-3

NOTE

•The *RESTART* message is also shown on the status screen when Daily OPS is ON. The operator must verify that Auto Restart is ON if a restart due to the loss of power or pressure is desired.

Valley AutoPilot Control Panel

Options

Auto Restart (continued)

Pressure Restart

When AUTORESTART is ON and a shut down occurs because of a loss of pressure, the machine will restart when pressure is regained and reaches the Low Pressure Limit. Pressure restart does NOT use the START\$ program unless the power is cycled. If a machine restarts due to a loss of pressure, it will start with the same running conditions as when it previously lost pressure, just as if START was pressed.

Power Restart

When AUTORESTART is ON and a shutdown occurs because of a loss of power, the control panel will run the START\$ program when power is restored.

The START\$ program must contain all commands required to restart the machine to the desired status including an adequate delay and the Start command. This is important when a pump restart delay is required after a momentary loss of power resulting in a shutdown.

NOTE

- If START\$ is not programmed with a Start-Up procedure, power restart will not operate correctly, even though Auto Restart is ON.
- If a machine was shut down by pressing the Stop key, by the stop-in-slot, or by a programmed shut down, it would NOT power restart if the power disconnect was turned OFF and then ON to simulate a loss of power because the initial shut down was not caused by loss of power or pressure.

Using Auto Restart

To command the Auto Restart option ON or OFF, follow these steps:

1. Press  and  to display the Auto Restart screen. See figure 62-1.
2. Press the number associated with the desired command:

 = ON

 = OFF

```
0 EXIT          3 START$      6 AUTOREVERSE
1 AUX1          4 STOP$       7 AUTORESTART
2 AUX2          5 CYCLE$     8 OTHER
AUTORESTART 1..ON 0..OFF (OFF) >
```

Figure 62-1

Module

Use Module option to turn individual relays on the relay board ON or OFF. The Module option should only be used by Valley factory trained technicians.

End-Gun

Use End-Gun option to enable or disable the first end-gun. Enabling or disabling the end-gun option does not affect the programmed end-gun constants.

Using End-Gun

To enable or disable the end-gun, follow these steps:

1. Press , , and  to display the End-Gun screen. See figure 62-2.
2. Press the number associated with the desired command:

 = ENABLE

 = DISABLE

```
0 EXIT          3 WIDE BND   6 PIVOT/LINEAR
1 MODULE        4 NOTICE
2 END-GUN       5 REMOTE LOCKOUT
END-GUN 1..ENABLE 0..DISABLE (0) > X
```

Figure 62-2

Wide Bnd (Wide Boundary)

Use Wide Bnd option to enable or disable the second end-gun. Enabling or disabling the wide boundary option does not affect the programmed wide boundary constants.

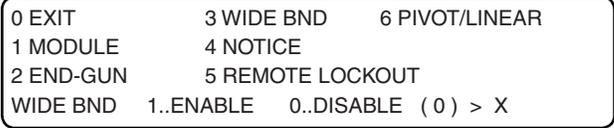
Using Wide Bnd

To enable or disable the end-gun, follow these steps:

1. Press , **8**, and **3** to display the End-Gun screen. See figure 63-1.
2. Press the number associated with the desired command:

1 = ENABLE

0 = DISABLE



```
0 EXIT          3 WIDE BND    6 PIVOT/LINEAR
1 MODULE        4 NOTICE
2 END-GUN       5 REMOTE LOCKOUT
WIDE BND 1..ENABLE 0..DISABLE (0) > X
```

Figure 63-1

Notice (Real-Time Update - BaseStation2)

Use Notice to configure communications and enable even notification for the Real-Time Update feature, where the control panel is able to transmit a notice that its status has changed. This provides the BaseStation2 with status information at the time that the change occurred, rather than requiring the BaseStation2 to request it at a later time.

Notice is grouped according to event types, Shutdown, Warning, and operational Status Changes.

AutoPilot Notice communications must be configured and event notification must be enabled before Real-Time Updates will notify the BaseStation2 that the status has changed.

To use Real-Time Updates:

- The AutoPilot module software must be version 1.00 or later.
- Notice events for Real-Time Updates must be enabled in the AutoPilot module.
- The BaseStation software must be BaseStation2 version 6.0 or later.
- If a radio is used, it must be set to monitor channel busy information.
- The radio and modem hardware must support the flow control signals in order to use the CTS or DCD settings.
- Reprogramming the radio with modification or replacement of modem and harness may be necessary. Contact your Valley dealer for more information.

Event Notification

There are three event notification groups:

- Shutdown - is defined as unplanned shutdowns.
- Warning - is defined as unstable operating conditions.
- Status Change - is defined as locally controlled events that the Base Station needs to be aware of.

The default state for all event notification is disabled. When an event is enabled, and the event occurs, a Real-Time update is sent from the control module to the BaseStation2 when the radio channel is clear. On the BaseStation2 Main Window, the user is notified that there has been a Real-Time update when the name of a machine turns to WHITE on a BLACK background. Alarms may be triggered, depending on the configuration of the alarms for the machine.

Valley AutoPilot Control Panel

Options

Notice, Event Notification (continued)

Shutdown Events

- The safety circuit opens for longer than 3 seconds.
- The system pressure drops below the low pressure limit for longer than 30 seconds.
- Voltage drops below the low voltage limit for longer than 15 seconds.
- Wind speed increases above the high wind speed limit for longer than 1 minute.
- Relay communications drop out causing the machine to shutdown.
- Machine stops due to power outage. A Real-Time update will be sent when power is restored.

Warning Events

- Safety is interrupted more than 2 times in a 30 second period. (The system does not lose safety long enough to trigger a fault).
- Pressure drops below the low pressure limit more than 2 times in a 30 second period. This feature will not be active until after the low pressure delay timer has expired. (The pressure is not below the low pressure limit long enough to trigger a fault).
- Voltage drops below the low voltage limit more than 2 times in a 30 second period. (The voltage is not below the low voltage limit long enough to trigger a fault).
- When the Pro2 module's computer is reset and its operating system restarts.
- System constants were modified. These constants are SIS, END-GUN, PRES DLY, LOW PRES, MIN APP, HRS/REV, WIDE BND, and AR/AS.
- Auxiliary input #1 changes state.
- Auxiliary input #2 changes state.

Status Change Events

- Running/Stopped status change.
- Depth/percent change.
- Position changes by more than a user defined degree interval from 1-359, the default value is 10°. (The user is prompted to enter the number of degrees when the option is toggled to the enabled state)
- Absolute Position that is a user defined degree from 0.0-359.9, the default value is 180.0°. (The user is prompted to enter the position, in degrees, when the option is toggled to the enabled state).
- Direction changes (Forward/Reverse).
- A step in a user program finishes executing.
- When end-gun is enabled, on/off status change (does not include Wide Boundary).
- Stop-in-slot enable is turned on/off.
- Daily Ops enable is turned on/off.

Notice (continued)

Events

Use EVENTS to display the SHUTDOWN, WARNING, and STATUS CHANGE event notification menus. Then enable or disable notification to the BaseStation2 for only selected events if the event should occur.

Shutdown Events

To enable or disable notification to the BaseStation2 for the listed System Fault events, do the following:

1. Press , **8**, **4**, and **1** to display the Shutdown screen. See figure 65-1.
2. Enable or disable events as desired:
 - Safety Fault - Press **1** to enable or disable
 - Pressure Fault - Press **2** to enable or disable
 - Voltage Fault - Press **3** to enable or disable
 - Wind Fault - Press **4** to enable or disable
 - Relay Com Fault - Press **5** to enable or disable

```
0 EXIT          3 VOLTAGE
1*SAFETY       4 WIND
2 PRESSURE     5 RELAY COM
PRESS NUMBER TO TOGGLE > *= ENABLED
```

Figure 65-1

NOTE •An asterisk (*) in front of an event name indicates that the event notification is enabled.

Warning 1 Events

To enable or disable notification to the BaseStation2 for the listed events, do the following:

1. Press , **8**, **4**, and **2** to display the Shutdown screen. See figure 65-2.
2. Enable or disable events as desired:
 - Safety - E05 - Press **1** to enable or disable
 - Pressure - E06 - Press **2** to enable or disable
 - Voltage - E04 - Press **3** to enable or disable
 - CPU Reset - E03 - Press **4** to enable or disable
 - New Constant - Press **5** to enable or disable

```
0 EXIT          3 VOLTAGE
1*SAFETY       4 CPU RESET
2 PRESSURE     5 NEW CONSTANT
PRESS NUMBER TO TOGGLE > *= ENABLED
```

Figure 65-2

NOTE •An asterisk (*) in front of an event name indicates that the event notification is enabled.

Warning 2 Events

To enable or disable notification to the BaseStation2 for the listed events, do the following:

1. Press , **8**, **4**, and **3** to display the Shutdown screen. See figure 65-3.
2. Enable or disable events as desired:
 - Aux1 in status - Press **1** to enable or disable
 - Aux2 in status - Press **2** to enable or disable

```
0 EXIT
1*AUX1 IN STATUS
2 AUX2 IN STATUS
PRESS NUMBER TO TOGGLE > *= ENABLED
```

Figure 65-3

NOTE •An asterisk (*) in front of an event name indicates that the event notification is enabled.

Valley AutoPilot Control Panel

Options

Events (continued)

Status Change 1 Events

To enable or disable notification to the BaseStation2 for the listed events, do the following:

1. Press , **8**, **4**, and **4** to display the Status Change 1 screen. See figure 66-1.

2. Enable or disable events as desired.

- Run/Stop - Press **1** to enable or disable
- Depth/% - Press **2** to enable or disable
- For/Rev - Press **3** to enable or disable
- Daily On/Off - Press **4** to enable or disable
- PGM Step - Press **5** to enable or disable

```
0 EXIT          3 FOR / REV
1*RUN / STOP   4 DAILY ON / OFF
2 DEPTH / %    5 PGM STEP
PRESS NUMBER TO TOGGLE > *= ENABLED
```

Figure 66-1

NOTE •An asterisk (*) in front of an event name indicates that the event notification is enabled.

Status Change 2 Events

To enable or disable notification to the BaseStation2 for the listed events, do the following:

1. Press , **8**, **4**, and **5** to display the Status Change 2 screen. See figure 66-2.

2. Enable or disable events as desired.

- End Gun - Press **1** to enable or disable
- SIS On/Off - Press **2** to enable or disable
- Deg Change - Press **3** to enable or disable
- Degree - Press **4** to enable or disable
- Region - Press **5** to enable or disable

```
0 EXIT          3 DEG CHANGE ( 10 )
1*END GUN      4 DEGREE (0.0)
2 SIS ON/OFF   5 REGION
PRESS NUMBER TO TOGGLE > *= ENABLED
```

Figure 66-2

NOTE •An asterisk (*) in front of an event name indicates that the event notification is enabled.

Remote Lockout

Enabling the remote lockout prevents any remote changes by the operator. The operator does have the ability to check the status of the machine remotely if the remote lockout is turned on.

1. Press , **8**, and **5** to display the Status Change 2 screen. See figure 66-3.

2. Enable or disable the remote lockout.

```
0 EXIT          3 WIDE BND      6 PIVOT/LINEAR
1 MODULE        4 NOTICE
2 END-GUN       5 REMOTE LOCKOUT
REMOTE LOCKOUT 1 .. LOCK 0 .. UNLOCK (0) >
```

Figure 66-3

Valley AutoPilot Control Panel

Options

Pivot/Linear

Pivot/Linear and the Pivot/Linear key perform the same functions.

Pivot/Linear is used to select transition mode and set machine mode/zone of operation. There are two transition modes: Automatic transition mode and Manual transition mode. There are six machine mode/zones: Pivot A, B, C, D, and Linear A, B.

When the system type is set to AUL, the selection of the machine mode and zone can be automated. When a machine is at a transition point in the field, the correct machine mode and zone are automatically selected by the control panel based on transition point and transition program. A VSAL must not be set to Auto Mode! If a Valley Swing Around Linear - 4 Wheel system with an end inlet is set up using the AUL/VSAL system type, then use Linear or Pivot modes only.

If the machine is not at a transition or the control panel does not recognize the machine position in the field, the zone screen is displayed and the user is prompted to select the correct zone.

When the system type is set to Swing Around Linear, Linear (No Swing), or Towable Pivot the transition mode is always Manual and the machine mode/zone is user selected.

Transition mode and machine mode/zone availability are based on the system type. See figure 67-1.

System Type	Transition Mode	Machine Mode/Zone
AUL/VSAL (Auto Universal Linear/ Valley Swing Around Linear)	Auto (AUL ONLY!)	Linear A , Linear B, Pivot A, Pivot B, Pivot C, or Pivot D
	Manual	Pivot A, Pivot B, Pivot C, or Pivot D Linear A or Linear B
Swing Around Linear	Manual	Linear A, Linear B or Pivot
Linear (No Swing) (Standard Linear)	Manual	Linear A or Linear B
Towable Pivot	Manual	Pivot A, Pivot B, Pivot C, or Pivot D

Figure 67-1

NOTE •Do not use Auto Mode when setting up a Valley Swing Around Linear - 4 Wheel system with an end inlet. Manual Linear or Pivot mode ONLY!

Using Pivot/Linear

To change the transition mode or machine mode/zone use the Pivot/Linear key, or follow these steps:

1. Press , **8**, and **6** to display the Pivot/Linear screen. See figure 67-2.
2. Select the desired transition mode from the modes displayed.
3. If prompted, select the correct zone based on the machine mode.

```
0 EXIT          3 WIDE BND     6 PIVOT/LINEAR
1 MODULE        4 NOTICE
2 END-GUN       5 REMOTE LOCKOUT
ENTER 1.AUTO   2.PIVOT  3.LINEAR (1) > X
```

Figure 67-2

Valley AutoPilot Control Panel

Options

Valley AutoPilot Control Panel

Program

Program Screen

There are four programming choices available from the program screen based on the System Type setting:

- Step Programs - Execute a wide range of commands based on a selected machine condition.
- Sector Programs - Execute a limited number of commands based on machine position and direction of travel.
- Program Transitions - Execute operator written programs for machine movement across field. Only available when the System Type is set to Universal Linear.
- Auto-Prog Transitions - Execute factory set programs for machine movement across field. Only available when the System Type is set to Universal Linear.
- Press  to display the Program screen. See figure 69-1.

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER >
```

Figure 69-1

Program Screen

Step Programs

Use step programs to execute one or more commands, options, or a stored step program based on a selected programming condition.

The user can program 1 to 17 step programs with up to nine steps in each program. Each step of a program is executed in numerical order. Program numbers 18, 19, and 20 are used for the START\$, STOP\$, AND CYCLE\$ programs.

Up to twenty programs can be run or be current at the same time. If more than one program is current, the computer continuously scans all of the current programs and looks for a step with a condition which is met. If the same condition in two or more step programs is met at the same time, the step in the program that was loaded last will be executed.

When the last step of a program is complete, the program is deleted from the current memory, but still remains in the stored memory.

- Press  and **1** to display the Step Program screen. See figure 69-2.

```
0 EXIT                3 REVIEW CURRENT    6 ERASE
1 RUN STORED         4 REVIEW STORED
2 CREATE NEW         5 EDIT
PRESS NUMBER >
```

Figure 69-2

Step Program Screen

Valley AutoPilot Control Panel

Program

Step Programs

Step Program Functions

- Run Stored - Execute stored step programs.
- Review Stored - Review stored step programs.
- Create New - Write new step programs.
- Review Current - Review the current step program.
- Edit - Edit stored step programs.
- Erase - Erase stored step programs from memory.

Programming Conditions

- Time - Execute commands based on the date and time of day.
- Position - Execute commands based on the position of the machine.
- Pressure - Execute commands based on water pressure.
- Delay - Execute commands based on a time delay in seconds or minutes.
- For/Rev - Execute commands based on direction of machine movement.
- Other Conditions - **See "Other Programming Conditions" in this section.**
 - » Analog - Execute commands based on an analog channel and its value.
 - » Module - Execute commands based on a module's status.
 - » Pulse - Execute commands based on counter number and pulse rate.
 - » Count - Execute commands based on counter number and count.
 - » Zone - Execute commands based on pivot or linear zone.

Available Commands

- Percent
- Depth
- Start
- Stop
- Forward
- Reverse
- Water ON
- Water OFF

Available Options

- SIS ON
- SIS OFF
- Auxiliary 1 ON/OFF
- Auxiliary 2 ON/OFF
- Start\$
- Stop\$
- Cycle\$
- Module
- Autoreverse (when enabled)
- Autorestart

Stored Program

- Any stored step program can be ran from the last step of another step program.
- **See "Run a Stored Program From a Program" in this section.**

Other Programming Conditions

Selecting Other Condition from the Create New Screen offers the programming conditions listed below:

1. Press , **1**, **2**, and **6** to display the Other Condition screen. See figure 70-1.

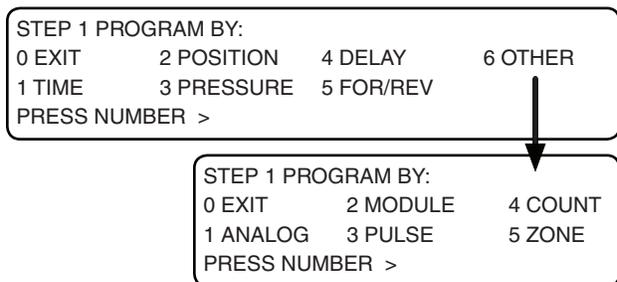


Figure 70-1

Valley AutoPilot Control Panel

Program

Step Programs

Analog

This programming condition based on an analog voltage being higher or lower than the set value. This condition can only be used if an external device with an analog voltage output is connected to the Pro2 control panel. See figure 71-2.

Analog Number	Description
0	Monitors Resolver Signal X
1	Monitors Resolver Signal Y
2	Not Used
3	Monitors Pressure Transducer Voltage

Analog Number	Description
4	Monitors Machine Voltage
5	Monitors Voltage to Pressure Transducer
6	Monitors Resolver Bias Reference Voltage
7	Not Used

Figure 71-2

Module

This programming condition is based on the condition, either ON/Closed or OFF/Open, of a control relay in the Pro2 control panel. Listed below are the available Modules/Relays. See figure 71-3.

MODULE NUMBER	RELAY NUMBER	FUNCTION DESCRIPTION	RELAY BOARD TERMINAL
0	K1	Safety Out	J5-1
1	K2	Percent Timer	J5-2
2	K7	End Gun	J13-5
3	K8	Wide Boundary	J13-6
4	K6	Pump Safety	J13-1, 2, 3
5	K9	Alarm	J6-1, 2, 3
6	K12	Auxiliary 1 Output	J7-1, 2
7	K13	Auxiliary 2 Output	J7-3, 4
8	K4	Contactora Enable	J5-5, 6
9	K3	Direction (Forward=ON, Reverse=OFF)	J5-3, 4
10	D03	Control Panel Backlight	J15-5
11	D02	TTL Output 2	J15-4

MODULE NUMBER	RELAY NUMBER	FUNCTION DESCRIPTION	RELAY BOARD TERMINAL
12	D01	TTL Output 1	J15-3
13	R01	Phase Reversal	J15-1
14	R02	Pivot / Linear	J15-2
15		Not Used	
16		Remote Start	J6-5
17		Pressure	J6-4
18	K5	3 Second timer	
19	K15	Auxiliary 2 Input	J7-7, 8
20	K14	Auxiliary 1 Input	J7-5, 6
21	K10	Reverse Sense	J5-4
22	K11	Forward Sense	J5-3
23	K5	Safety Sense	J5-7
24	PC4	Span / Cart Align.	J16-9
25	PC5	First Tower Run Time	J16-10

Figure 71-3

Valley AutoPilot Control Panel

Program

Step Programs

Pulse

This programming condition is based on pulse rates being higher or lower than the set value. This condition can only be used if a device with a pulse output is connected to the Pro2 control panel.

Count

This programming condition is based on pulse counts being higher than the set value.

This condition can only be used if a device with a pulse output is connected to the Pro2 control panel. See figure 72-1.

Counter Number	Description
0	Monitors Flow Meter
1	Monitors Wind Meter
2	Not Currently Used

Figure 72-1

Zone

This programming condition is based on the system type setting and whether the machine is in a pivot or linear zone.

The zones and their availability are based on system type. See figure 72-2.

Zones	Available When System Type Is:
Pivot A	AUL/VSAL or Towable Pivot
Pivot B	AUL/VSAL or Towable Pivot
Pivot C	AUL/VSAL or Towable Pivot
Pivot D	AUL/VSAL or Towable Pivot
Linear A	AUL/VSAL, Swing Around Linear or Linear (No Swing)
Linear B	AUL/VSAL, Swing Around Linear or Linear (No Swing)

Figure 72-2

Run Program Command

A stored step program can be loaded and ran from the last step within the same or another step program. It is recommended that the run program command be the last command on the last step of the program.

This programming feature can be used to run the same program over or run programs in a sequence. For example, if there are 3 stored programs, program 1, 2, and 3 need to be ran in sequence, the last step of program 1 would command program 2 to run. The last step in program 2 would command program 3 to run and the last step in program 3 would command program 1 to run, starting the sequence over.

Adding Run Program

To add the Run Program command to the last step in another program, follow the instructions below:

1. When programming the last step of a program press  to display the Stored Programs. See figure 72-3.
2. Select the program to be ran. See figure 72-3.
3. Press  to add the Run Program command as the last command of the step. See figure 72-4.
4. Press  to finish the program.

STORED PROGRAMS 1, 2, 3, 4

ENTER PROGRAM NUMBER > X

Figure 72-3

STEP 1 AT 180.0 DEGREES, WATER ON, FORWARD,
RUN PROGRAM 2,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 72-4

Valley AutoPilot Control Panel

Program

Step Programs

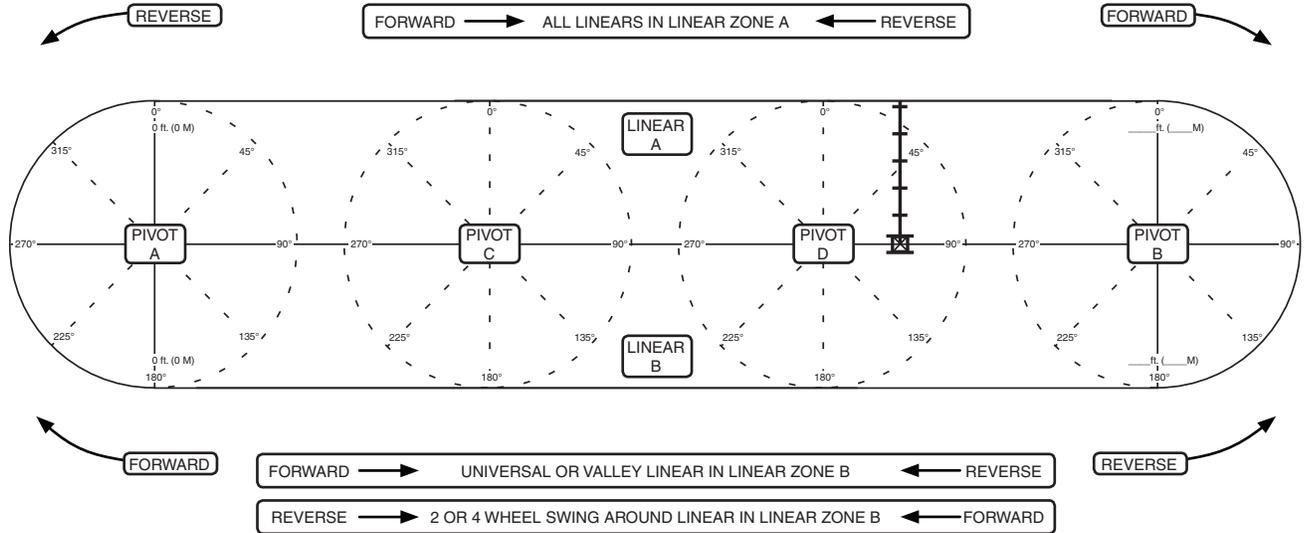
Step Program Design Form

Additional blank forms available in Program Examples section.

System Type _____

Program Number _____

Field I.D. _____



	STEP NUMBER								
	1	2	3	4	5	6	7	8	9
CONDITIONS									
TIME									
POSITION									
PRESSURE									
DELAY									
FOR/REV									
OTHER CONDITIONS									
ANALOG									
MODULE									
PULSE									
COUNT									
ZONE									
COMMAND KEYS									
WATER ON									
WATER OFF									
PERCENT									
DEPTH									
FORWARD									
REVERSE									
STOP-IN-SLOT ON									
STOP-IN-SLOT OFF									
START									
STOP									
OPTIONS									
AUX1 ON / OFF									
AUX2 ON / OFF									
START\$									
STOP\$									
CYCLES\$									
MODULE									
AUTOREVERSE									
AUTORESTART									

Figure 73-1

Valley AutoPilot Control Panel

Program

Step Programs

Using Create New

To write a new step program, use a copy of the Step Program Design Form in figure 73-1 and follow the steps below:

1. Press , , and to display the first Create New screen. See figure 74-1.

2. Select one of the following conditions to program by. See figure 74-1.

= Time

= Position

= Pressure

= Delay

= Forward or Reverse

= Other-See Other Programming Conditions

3. Enter the requested value for the selected programming condition and press  as required to retain the information.

4. Select the desired command(s), option(s), or program for this program step by pressing the desired command, option, or program key(s). See figure 74-2.

5. When finished entering command(s), option(s), or program press .

6. At the Next Step screen, do one of the following. See figure 74-3.

- Press to Exit.
- Press for Program Finished.
- Press for Next Step to add another step to the program.

7. If Program Finished is selected, do one of the following. See figures 74-4 and 74-5.

- Press to Save Program.
 - Assign program number, 1-17.
 - Press  to save program.
- Press to Save Program and Run.
 - Assign program number, 1-17.
 - Press  to save and run program.
- Press to Cancel Program.

```
STEP 1 PROGRAM BY:
0 EXIT      2 POSITION  4 DELAY      6 OTHER
1 TIME      3 PRESSURE 5 FOR/REV
PRESS NUMBER >
```

```
STEP 1 PROGRAM BY:
0 EXIT      2 MODULE  4 COUNT
1 ANALOG    3 PULSE   5 ZONE
PRESS NUMBER >
```

Figure 74-1

```
STEP 1 AT 180.0 DEGREES, WATER ON

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 74-2

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > X
```

Figure 74-3

```
0 EXIT      3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

Figure 74-4

```
STORED PROGRAMS

PRESS NUMBER FROM 1 TO 17 TO SAVE
ENTER PROGRAM NUMBER > X
```

Figure 74-5

NOTE •When Save Program and Run is used, PROGRAM is displayed on the status screen indicating the program is loaded and ready to run.

Step Programs (continued)

Using Review Current

To review current step program(s) that are running or will be executed as soon as their conditions are met, follow the steps below. All steps in a program can be reviewed while the program is running. As the running program is being reviewed, an asterisk (*) located in the lower left hand corner indicates the step that contains the next step to be executed. Step program numbers are not displayed on the review current screen.

1. Press , **1**, and **3** to display the Review Current screen. See figure 75-1.

- If a program is in Current Memory the first step is displayed.

2. Press any key to advance to the next step.

- 3 At the last step the Review Decision screen is displayed. See figure 75-2. Do one of the following:

- Press  for Next.
 - If another program is in Current Memory, the first step of that program is displayed.

OR

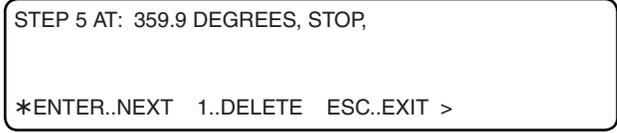
- If NO other programs are in Current Memory, the End Of Current Program screen is displayed. See figure 75-3.

- Press **1** to Delete the program from the Current Memory.
- Press  to Exit Review Current.



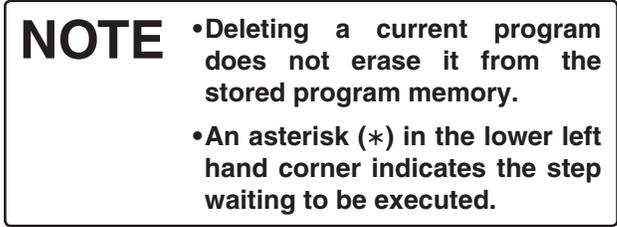
```
STEP 1 AT: 06/22/07 06:30:00, WATER ON,  
  
PRESS ANY KEY >
```

Figure 75-1



```
STEP 5 AT: 359.9 DEGREES, STOP,  
  
*ENTER..NEXT 1..DELETE ESC..EXIT >
```

Figure 75-2



NOTE

- Deleting a current program does not erase it from the stored program memory.
- An asterisk (*) in the lower left hand corner indicates the step waiting to be executed.



```
*** END OF CURRENT PROGRAMS ***  
  
PRESS ANY KEY >
```

Figure 75-3

Using Review Stored

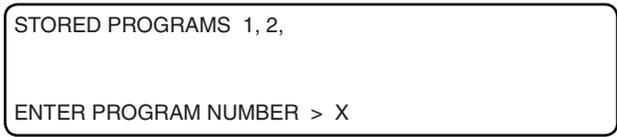
All steps in a program can be reviewed while the program is running. To review a step program stored in memory, follow the steps below:

1. Press , **1**, and **4** to display the Stored Programs screen. See figure 75-4.

2. Enter the desired program number from the stored program number list at the top of the screen.

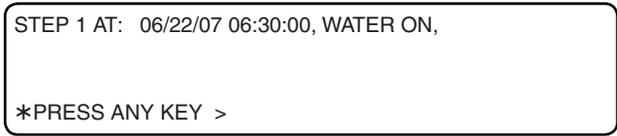
3. Press  to confirm the program number selection and step 1 of the program is displayed. See figure 75-5.

4. Press any key to advance to the next step of the program.



```
STORED PROGRAMS 1, 2,  
  
ENTER PROGRAM NUMBER > X
```

Figure 75-4



```
STEP 1 AT: 06/22/07 06:30:00, WATER ON,  
  
*PRESS ANY KEY >
```

Figure 75-5

Valley AutoPilot Control Panel

Program

Step Programs (continued)

Using Edit

To edit a step program stored in memory, follow the steps below:

1. Press , **1**, and **5** to display the Stored Programs screen. See figure 76-1.
2. Enter the desired program number from the stored program number list at the top of the screen.
3. Press  to confirm the program number selection and step 1 of the program is displayed. See figure 76-2.
4. Edit the program step if desired.

- If NO changes are required, press  to accept the step and display the Next Step.
- If changes are required, do one or more of the following:

Press  to move the flashing cursor back through the step to change a command or condition.

Press  to delete the command or condition that the cursor is highlighting.

When done, press  to accept the step.

5. At the Next Step screen, do one of the following. See figure 76-3.
 - Press **1** to insert a new step, then select the programming condition and commands.
 - Press **0** to display the next step in the program.

Repeat steps 4 and 5 of this instruction for each program step.

Using Erase

To Erase a step program from stored in memory, follow the steps below:

1. Press , **1**, and **6** to display the Stored Programs screen. See figure 76-4.
2. Enter the desired program number from the stored program number list at the top of the screen. Press  to confirm and erase the stored program number. See figure 76-5.

NOTE •To delete current programs, use Review Current screen.

```
STORED PROGRAMS 1, 2,  
  
ENTER PROGRAM NUMBER > X
```

Figure 76-1

```
STEP 1 AT: 06/22/07 06:30:00, WATER ON,  
  
ENTER..ACCEPT BS..CURSOR ..DEL >
```

Figure 76-2

```
STEP 1 AT: 06/22/07 06:30:00, WATER ON,  
  
1..INSERT STEP 0..DISPLAY NEXT STEP >
```

Figure 76-3

```
STORED PROGRAMS 1, 2,  
  
ENTER PROGRAM NUMBER > 1
```

Figure 76-4

```
PROGRAM 1 ERASED  
  
PRESS ANY KEY >
```

Figure 76-5

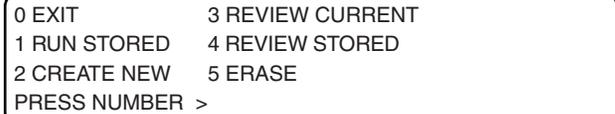
Valley AutoPilot Control Panel

Program

Sector Programs

Use sector programs to execute one or more temporary commands based on machine position and running direction in a pivot or linear zone. A sector program has a beginning position and an ending position. When the machine is in a sector, the temporary command(s) are executed. When the machine is out of the sector, the machine reverts back to the prior setting. The user can program up to nine, one step sector programs. Sector programs that overlap the same mode and zone distance or degree cannot be ran at the same time. Zone availability is based on System Type setting.

- Press  and  to display the Sector Program screen See figure 77-1.



```
0 EXIT          3 REVIEW CURRENT
1 RUN STORED   4 REVIEW STORED
2 CREATE NEW   5 ERASE
PRESS NUMBER >
```

Figure 77-1 Sector Program Screen

Sector Program Functions

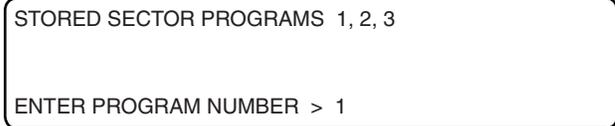
- Run Stored - Use to execute stored sector programs.
- Create New - Use to write new sector programs.
- Review Current - Use to review the current sector program.
- Review Stored - Use to review and save stored sector programs.
- Erase - Use to erase stored sector programs from memory.

Using Run Stored

To run a stored sector program, follow the steps below:

1. Press , , and  to display the Stored Programs screen. See figure 77-2.
2. Enter the desired program number from the stored program number list at the top of the screen. See figure 77-2.
3. After the selection is made, a confirmation screen is displayed and the program is copied to the Current Programs Memory to be executed. See figure 77-3.

PROGRAM is displayed on the status screen.

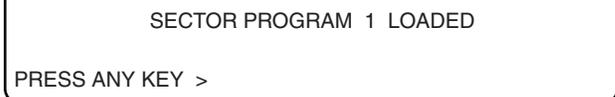


```
STORED SECTOR PROGRAMS 1, 2, 3

ENTER PROGRAM NUMBER > 1
```

Figure 77-2

NOTE •If NO programs have been saved, NO program numbers can be displayed.



```
SECTOR PROGRAM 1 LOADED

PRESS ANY KEY >
```

Figure 77-3

NOTE •Sector programs that overlap the same mode and zone distance or degree cannot be ran at the same time. When there is an overlap conflict, a warning is shown:

- WARNING SECTOR PROGRAM 2 NOT LOADED
- OVERLAPS WITH RUNNING SECTOR PROGRAM 1

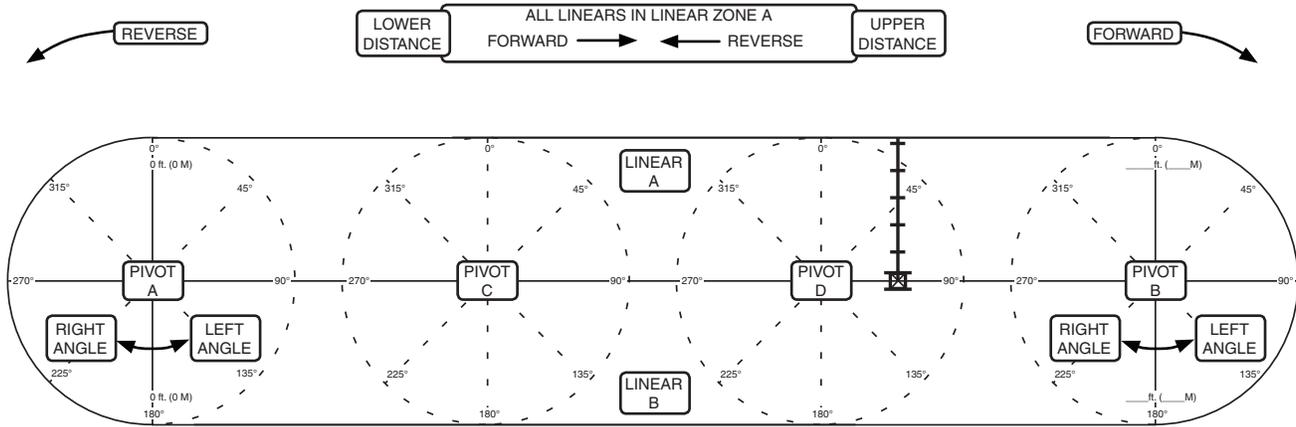
Valley AutoPilot Control Panel

Program

Sector Programs (continued)

Sector Program Design Form Additional blank forms available in Program Examples section.

System Type _____ **Field I.D.** _____



ZONE	SECTOR PROGRAM NUMBER								
	1	2	3	4	5	6	7	8	9
LINEAR A									
LINEAR B									
PIVOT A									
PIVOT B									
PIVOT C									
PIVOT D									
SECTOR									
LOWER DISTANCE									
UPPER DISTANCE									
LEFT ANGLE									
RIGHT ANGLE									
DIRECTION									
BOTH									
FORWARD									
REVERSE									
COMMANDS									
WATER ON									
WATER OFF									
PERCENT									
DEPTH									
OPTIONS									
AUX1 ON / OFF									
AUX2 ON / OFF									
MODULE									

Figure 78-1

Sector Programs (continued)

Using Create New

To write a new sector program, use a copy of the Sector Program Design form shown in figure 78-1 and follow the steps below:

1. Press , , and  to display the first Create New screen. Press  OTHER to view the second Create New screen. See figure 79-1.
2. Select the Machine Mode that the program will run in:

 = Pivot

 = Linear

3. Select the Zone within the Mode that the program will run in. See figure 79-2.

- If the Mode is Pivot:

Press  for Zone A.

Press  for Zone B.

Press  for Zone C.

Press  for Zone D.

- If the Mode is Linear:

Press  for Zone A.

Press  for Zone B.

4. Enter the Sector values for the Machine Mode and Zone. See figures 79-3 and 79-4.

- If the Mode is Pivot:

- Enter the Left Angle within the selected Zone and press Enter.

- Enter the Right Angle within the selected Zone and press Enter.

- If the Mode is Linear:

- Enter the Lower Distance in the selected Zone and press Enter.

- Enter the Upper distance in the selected Zone and press Enter.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
```

```
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 79-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT
```

```
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 79-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT A,
```

```
ENTER LEFT ANGLE (270.0) >
```

Figure 79-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT A, 270.0-
```

```
ENTER RIGHT ANGLE (359.9) >
```

Figure 79-4

Valley AutoPilot Control Panel

Program

Sector Programs (continued)

Using Create New (continued)

5. Select the direction for the program to work. See figure 80-1.

Press **0** for Both Forward and Reverse.

Press **1** for Forward.

Press **2** for Reverse.

6. After entering Sector values for the mode and Zone, select the command(s) for this program by pressing the desired command key(s). See figures 80-2 and 80-3.

7. When finished entering command(s), press  to display the Save Program screen. See figure 80-4. Then do one of the following:

- Press **0** to Exit without saving the program.

OR

- Press **1** for Save Program, then press desired program number to save program to stored memory. See figures 80-5 and 80-6.

OR

- Press **2** to Save Program and Run, then press desired program number to save program to stored memory and current memory to run program. PROGRAM is displayed on the status screen. See figures 80-5 and 80-6.

OR

- Press **3** for Cancel Program, the changes to program is not saved and the Sector Program screen is displayed.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0-359.9

DIR 0..BOTH 1..FOR 2..REV >
```

Figure 80-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 359.9, FOR: THEN

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 80-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 359.9, FOR: THEN
DEPTH 1.00,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 80-3

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

Figure 80-4

```
STORED SECTOR PROGRAMS:

PRESS NUMBER FROM 1 TO 9 TO SAVE
ENTER PROGRAM NUMBER > X
```

Figure 80-5

```
SECTOR PROGRAM X SAVED

PRESS ANY KEY >
```

Figure 80-6

NOTE •Sector programs that overlap the same mode and zone distance or degree cannot be ran at the same time.

Sector Programs (continued)

Using Review Current

To review current step program(s) that are running or will be executed as soon as their conditions are met, follow the steps below. All steps in a program can be reviewed while the program is running. As the running program is being reviewed, an asterisk (*) located in the lower left hand corner indicates the step that contains the next step to be being executed. Sector program numbers are not displayed on the review current screen.

1. Press , , and  to display the Review Current screen. See figure 81-1.

- If a program is in Current Memory, the Sector program is displayed. See figure 81-1.

2. Do one of the following:

- Press  for Next.
 - If another program is in Current Memory, that program is displayed.

OR

- If NO other programs are in Current Memory, the End Of Current Program screen is displayed. See figure 81-2.

- Press  to Delete the program from the Current Memory.
- Press  to Exit Review Current.

Using Review Stored

All steps in a program can be reviewed while the program is running. To review and/or edit a sector program stored in memory, follow the steps below:

1. Press , , and  to display the Stored Programs screen. See figure 81-3.

2. Enter the desired program number from the stored program number list at the top of the screen.

3. Edit the program if desired. See figure 81-4.

- If NO changes are required, press Enter to accept the program and display the Save Program screen.
- If changes are required, do one or more of the following:

Press  to move the flashing cursor back through the program to change a command, direction, zone, or mode.

Press  to delete the command or direction, zone, and mode that the cursor is highlighting.

When done, press  to accept the program.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 359.9, FOR: THEN
DEPTH 1.00,
*ENTER..NEXT 1..DELETE ESC..EXIT >
```

Figure 81-1

NOTE

- Deleting a current program does not erase it from the stored program memory.
- An asterisk (*) in the lower left hand corner indicates the step waiting to be executed.

```
*** END OF CURRENT PROGRAMS ***
PRESS ANY KEY >
```

Figure 81-2

```
STORED SECTOR PROGRAMS 1, 2,
ENTER PROGRAM NUMBER > X
```

Figure 81-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 359.9, FOR: THEN
DEPTH 1.00,
ENTER..ACCEPT BS..CURSOR -..DEL >
```

Figure 81-4

Valley AutoPilot Control Panel

Program

Sector Programs (continued)

Using Review Stored

4. At the Save Program screen, do one of the following. See figure 82-1.

- Press **0** to Exit without saving changes.

OR

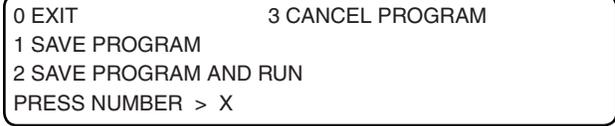
- Press **1** for Save Program, then press desired program number to save program to stored memory. See figures 82-2 and 82-3.

OR

- Press **2** to Save Program and Run. Then press desired program number to save program to stored memory and current memory to run program. PROGRAM is displayed on the status screen. See figures 82-2 and 82-3.

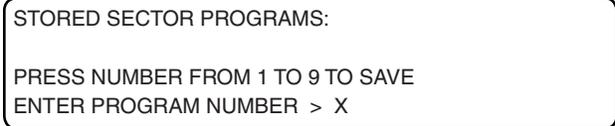
OR

- Press **3** for Cancel Program. The changes to the program are not saved and the Sector Program screen is displayed.



```
0 EXIT          3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

Figure 82-1



```
STORED SECTOR PROGRAMS:
PRESS NUMBER FROM 1 TO 9 TO SAVE
ENTER PROGRAM NUMBER > X
```

Figure 82-2



```
SECTOR PROGRAM X SAVED
PRESS ANY KEY >
```

Figure 82-3

NOTE •Sector programs that overlap the same mode, zone, or distance cannot be ran at the same time.

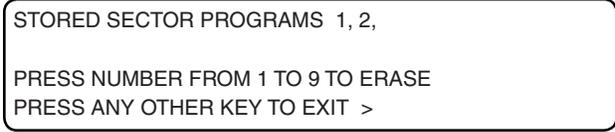
Using Erase

To Erase a sector program from stored in memory, follow the steps below:

1. Press **0**, **2**, and **5** to display the Stored Programs screen. See figure 82-4.
2. Enter the desired program number from the stored sector program number list at the top of the screen and the program is erased. See figure 82-5.

OR

Press any other key to Exit without erasing a program.



```
STORED SECTOR PROGRAMS 1, 2,
PRESS NUMBER FROM 1 TO 9 TO ERASE
PRESS ANY OTHER KEY TO EXIT >
```

Figure 82-4



```
PROGRAM 1 ERASED
PRESS ANY KEY >
```

Figure 82-5

NOTE •To erase current programs, use Review Current screen.

Valley AutoPilot Control Panel

Program

Program Transitions

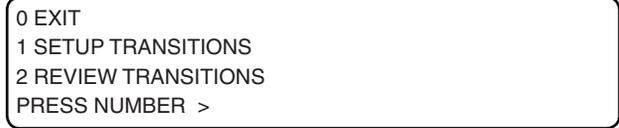
Use Program Transitions to program the transitions between pivot and linear zones. There are up to eight transitions available, T1 - T8, depending on the field configuration. Each Transition relates to a microswitch in the field. Each Transition has four running modes that must be programmed: Pivot Forward, Pivot Reverse, Linear Forward, and Linear Reverse.

The running mode is the mode and direction that the machine is in when the transition is reached. If the transition is reached in a running mode, a transition mode tells the machine to move in a programmed direction or to stop.

There are five transition modes: Pivot Forward, Pivot Reverse, Linear Forward, Linear Reverse, and Stop. Transition modes are user selected for each running mode within a transition depending on field design, type of guidance system, and type of water delivery system.

To use Program Transitions, the system type must be set to Universal Linear and transition mode must be set to Auto. Program Transitions are not available when system type is set to Swing Around Linear, Standard Linear, or Towable Pivot.

- Press  and  to display the Program Transitions screen. See figure 83-1.



```
0 EXIT
1 SETUP TRANSITIONS
2 REVIEW TRANSITIONS
PRESS NUMBER >
```

Figure 83-1 Program Transitions Screen

Setup Transitions

When setting up transitions use a copy of the Transition Program Design form, figure 83-1 on page 83. Based on the number of transitions in the field, sketch the field on top of the appropriate Transition Field Sketch.

For each running mode that could reach a transition, select the appropriate transition mode to move the machine across the field as desired.

For each running mode that cannot reach a transition, select any transition mode. Transitions should be programmed so that the machine can make one complete pass of the field in each linear direction.

To reduce the possibility of the machine shutting down due to a Safety Fault, keep the guidelines below in mind:

- In all situations:
 - DO NOT USE Linear Reverse from T1 or T2.
 - DO NOT USE Linear Forward from T3 or T4.
- If the guidance system is above ground cable or the water delivery system is a ditch:
 - DO NOT USE Pivot Forward from T1, T4, T5, T6, T7, or T8.
 - DO NOT USE Pivot Reverse from T2, T3, T5, T6, T7, or T8.

Valley AutoPilot Control Panel

Program

Program Transitions (continued)

Simple Transition Program

The simple transition program shown in figure 84-1 illustrates the linear forward and linear reverse programming for each transition on a four transition field.

1. Determine the possible running mode that could reach a transition based on the field design.
2. Select and record the desired transition mode for each possible running mode.
3. Select and record any transition mode for each running mode that cannot reach a transition.

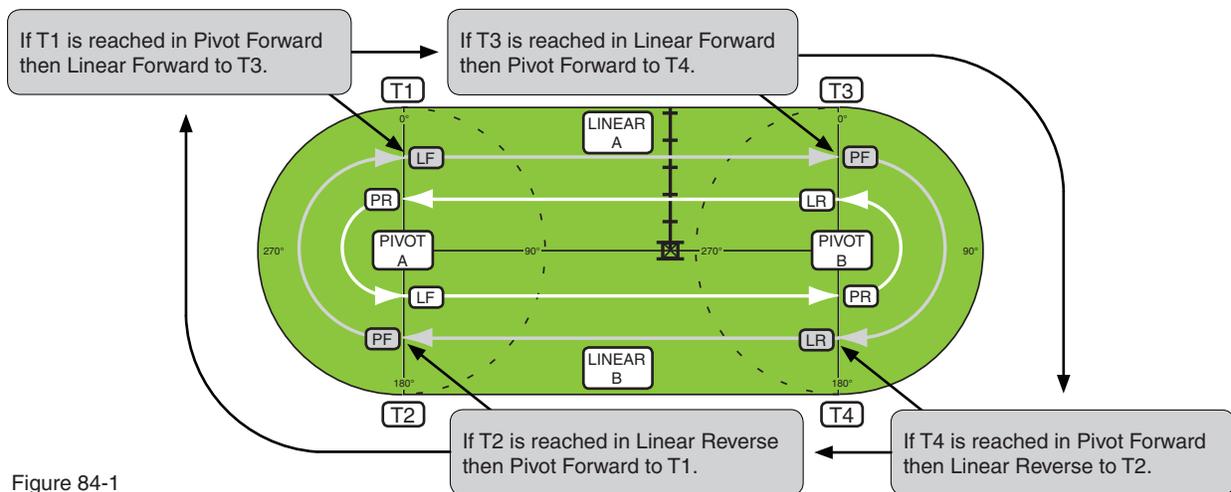


Figure 84-1

IF RUNNING MODE IS	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
	THEN CHANGE TO TRANSITION MODE							
Pivot/Forward	✓ LF	PR	PF	✓ LR	PF	PF	PF	ST
Pivot/Reverse	PR	✓ LF	✓ LR	PR	PF	PF	PF	ST
Linear/Forward	LF	LF	✓ PF	✓ PR	PF	PF	PF	ST
Linear/Reverse	✓ PR	✓ PF	LR	LR	PF	PF	PF	ST

CHANGE TO TRANSITION MODE - PF = Pivot Forward, PR = Pivot Reverse, LF = Linear Forward, LR = Linear Reverse, ST = Stop

✓ A check mark indicates possible running mode that could reach the transition based on field design.

□ Programming for one continuous pass around the field is highlighted.

Valley AutoPilot Control Panel

Program

Program Transitions (continued)

Advanced Transition Program

The advanced transition program shown in figure 85-1 illustrates the linear forward and linear reverse programming for each transition on an eight transition field.

To run an advanced transition program like the one shown below, the machine must be equipped with a furrow or below ground guidance system and water delivery system must be hose drag.

1. Determine the possible running mode that could reach a transition based on the field design.
2. Select and record the desired transition mode for each possible running mode.
3. Select and record any transition mode for each running mode that cannot reach a transition.

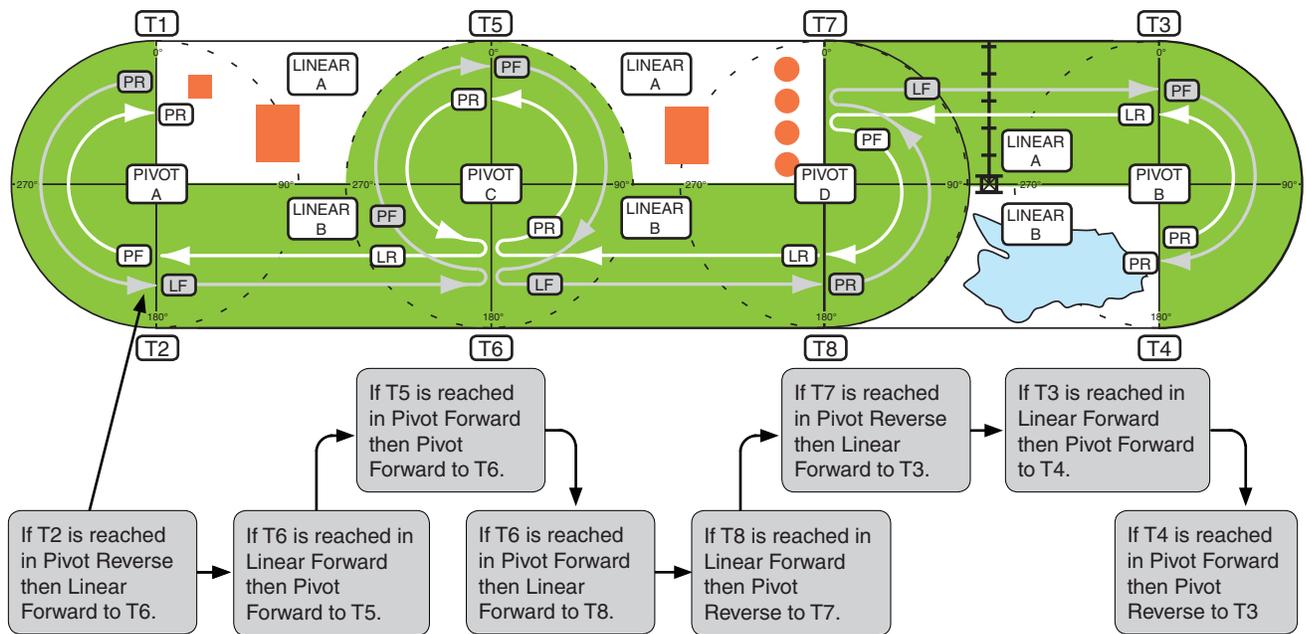


Figure 85-1

IF RUNNING MODE IS	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
	THEN CHANGE TO TRANSITION MODE							
Pivot/Forward	✓ PR	LF	PF	✓ PR	✓ PF	✓ LF	PF	✓ LR
Pivot/Reverse	PR	✓ LF	✓ LR	PR	✓ PR	✓ LR	✓ LF	PR
Linear/Forward	ST	LF	✓ PF	ST	PF	✓ PF	LF	✓ PR
Linear/Reverse	ST	✓ PF	LR	ST	PR	✓ PR	✓ PF	LR

CHANGE TO TRANSITION MODE - PF = Pivot Forward, PR = Pivot Reverse, LF = Linear Forward, LR = Linear Reverse, ST = Stop

✓ A check mark indicates possible running mode that could reach the transition based on field design.

□ Programming for one continuous pass around the field is highlighted.

Valley AutoPilot Control Panel

Program

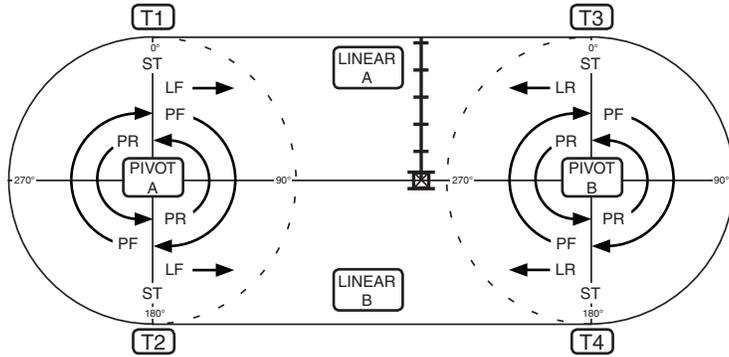
Program Transitions (continued)

Transition Program Design Form AUL/VSAL System Type Only

Additional blank forms available in Program Examples section.

Field I.D. _____

1-4 Transition Field Sketch

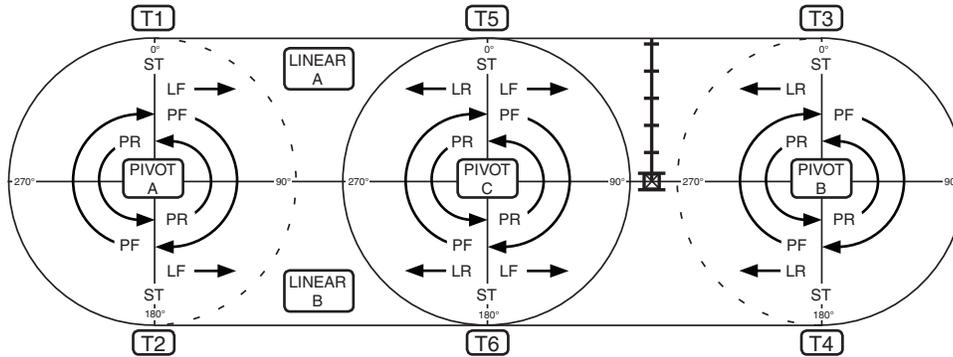


TRANSITION GUIDELINES

- In all situations:
 - DO NOT USE Linear Reverse from T1 or T2.
 - DO NOT USE Linear Forward from T3 or T4.
- If the guidance system is above ground cable or the water delivery system is a ditch.
 - DO NOT USE Pivot Forward from T1, T4, T5, T6, T7, or T8.
 - DO NOT USE Pivot Reverse from T2, T3, T5, T6, T7, or T8.

#	MODES
1	PF = Pivot Forward
2	PR = Pivot Reverse
3	LF = Linear Forward
4	LR = Linear Reverse
5	ST = Stop

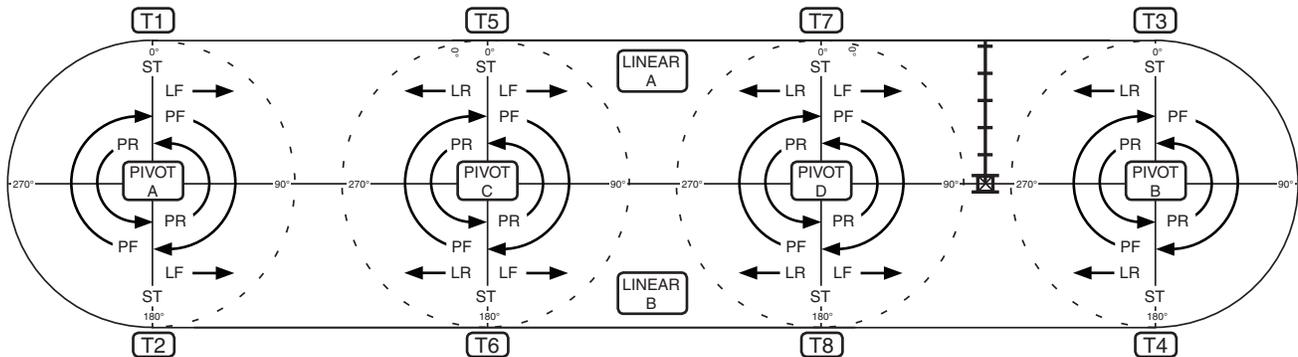
5-6 Transition Field sketch



TRANSITIONS

- T1 = Transition 1
- T2 = Transition 2
- T3 = Transition 3
- T4 = Transition 4
- T5 = Transition 5
- T6 = Transition 6
- T7 = Transition 7
- T8 = Transition 8

7-8 Transition Field Sketch



IF TRANSITION IS REACHED IN RUNNING MODE:	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
THEN USE THIS TRANSITION MODE								
PIVOT FORWARD								
PIVOT REVERSE								
LINEAR FORWARD								
LINEAR REVERSE								

Figure 86-1

Program Transitions (continued)

Using Setup Transitions

To setup transitions, use a copy of the Transitions Program Design Form shown in figure 86-1 and follow the steps below:

1. Press , **3**, and **1** to display the Setup Transitions screen. See figure 87-1.
2. Select the desired transition number, 1-8. Press any other key to Exit. See figure 87-1.
3. Select the desired transition mode for each running mode below based on the field configuration.

(a) Pivot Forward: If transition T1 is reached while the machine is running in PIVOT FORWARD, then change to the user selected transition mode. See figure 87-2.

- Press 1 for PIVOT FORWARD
- Press 2 for PIVOT REVERSE
- Press 3 for LINEAR FORWARD
- Press 4 for LINEAR REVERSE
- Press 5 for STOP

(b) Pivot Reverse: If transition T1 is reached while the machine is running in PIVOT REVERSE, then change to the user selected transition mode. See figure 87-3.

- Press 1 for PIVOT FORWARD
- Press 2 for PIVOT REVERSE
- Press 3 for LINEAR FORWARD
- Press 4 for LINEAR REVERSE
- Press 5 for STOP

(c) Linear Forward: If transition T1 is reached while the machine is running in LINEAR FORWARD, then change to the user selected transition mode. See figure 87-4.

- Press 1 for PIVOT FORWARD
- Press 2 for PIVOT REVERSE
- Press 3 for LINEAR FORWARD
- Press 4 for LINEAR REVERSE
- Press 5 for STOP

(d) Linear Reverse: If transition T1 is reached while the machine is running in LINEAR REVERSE, then change to the user selected transition mode. See figure 87-5.

- Press 1 for PIVOT FORWARD
- Press 2 for PIVOT REVERSE
- Press 3 for LINEAR FORWARD
- Press 4 for LINEAR REVERSE
- Press 5 for STOP

4. Repeat steps 2 and 3 for each transition being setup.

PRESS 1 - 4 FOR STANDARD TRANSITIONS
PRESS 5 - 8 FOR OPTIONAL TRANSITIONS

PRESS ANY OTHER KEY TO EXIT >

Figure 87-1

IF T1 REACHED IN PIVOT FORWARD THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV
CHANGE TO (X): PRESS # >

Figure 87-2

IF T1 REACHED IN PIVOT REVERSE THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV
CHANGE TO (X): PRESS # >

Figure 87-3

IF T1 REACHED IN LINEAR FORWARD THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV
CHANGE TO (X): PRESS # >

Figure 87-4

IF T1 REACHED IN LINEAR REVERSE THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV
CHANGE TO (X): PRESS # >

Figure 87-5

DANGER

TO REDUCE THE POSSIBILITY OF STRUCTURAL DAMAGE TO THE MACHINE:

DO NOT SELECT A TRANSITION MODE THAT WILL CAUSE THE MACHINE TO PIVOT INTO AN ABOVE GROUND GUIDANCE CABLE OR WATER SUPPLY DITCH.

NOTE •Some transitions cannot be reached by all Running Modes, in this case a safe Transition Mode that would not cause damage to the machine must be selected.

Valley AutoPilot Control Panel

Program

Program Transitions (continued)

Using Review Transitions

To setup transitions, follow the steps below:

1. Press , **3**, and **2** to display the Review Transitions screen. See figure 88-1.
2. The transition T1 command line and each running mode/transition mode are displayed.

At the Review Transitions screen, do any of the following:

- Press **0** to Exit.
- Press **1** to view the previous transition.
- Press **2** to view the next transition.

The transition command line, running mode, and transition mode are highlighted in figure 88-1 and are interpreted as written below:

- If Transition T1 is reached while running in Pivot Forward (running mode), then change to Linear Forward (transition mode).
- The interpretation is similar for all transition command lines.

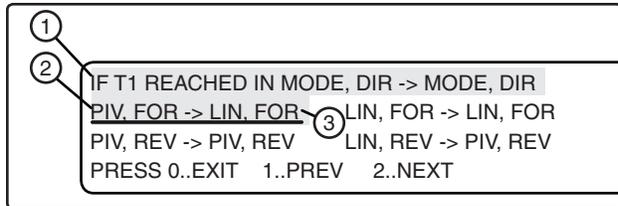


Figure 88-1 1. Transition Command Line
2. Running Mode
3. Transition Mode

Valley AutoPilot Control Panel

Program

Auto-Prog Transitions

An Auto Program Transition is used to control a machine through four transition locations in one of nine different pre-programmed field configurations. The Auto-Prog numbers and field configurations are shown in the Auto-Prog Transition Table. See figure 90-1 on Page 90.

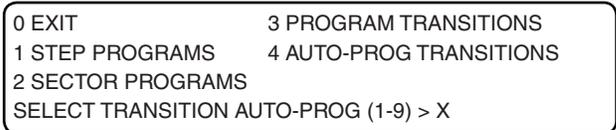
To use Auto Program Transitions the System Type must be set to AUL/VISAL. Auto Program Transitions are not available when the System Type is set to Swing Around Linear, Linear (No Swing), or Towable Pivot.

Auto-Prog Transitions can be reviewed by the operator, but cannot be edited.

Selecting Auto-Prog Transition

To select an Auto Program Transition, follow the steps below:

1. Press  and **4** to display the Auto-Prog Transitions screen. See figure 89-1.
2. Enter the desired Auto-Prog number 1, 2, 3, 4, 5, 6, 7, 8, or 9. See figure 89-1.
3. After the selection is made, a confirmation screen is displayed. Press any key to return to the Program screen.



```
0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS 4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
SELECT TRANSITION AUTO-PROG (1-9) > X
```

Figure 89-1

NOTE •The value shown in parenthesis indicates the Auto-Prog number selection range.

Reviewing Auto-Prog Transition

To review Auto Program Transitions, follow the steps below:

1. Press  and **4** to display the Auto-Prog Transitions screen. See figure 89-2.
2. Enter the desired Auto-Prog number 1, 2, 3, 4, 5, 6, 7, 8, or 9. See figure 89-2.

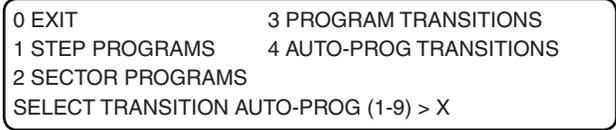
After the selection is made, a confirmation screen is displayed.

3. Press **3**, **3**, and **2** to display the Review Transitions screen. See figure 89-3.
4. Do one of the following:
 - Press **0** to Exit.
 - Press **1** to view a previous transition.
 - Press **2** to view the next transition.

* Although there are eight transitions that can be reviewed, only four transitions, T1 through T4, are used with Auto-Prog.

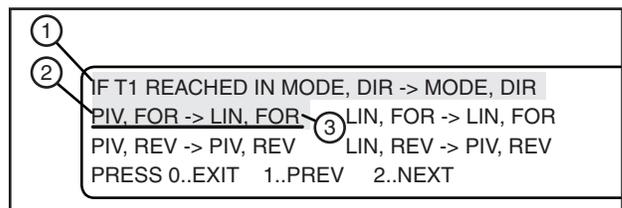
The transition command line, running mode, and transition mode are highlighted in figure 89-3 and are interpreted as written below:

- If Transition T1 is reached, while running in Pivot Forward (running mode), then change to Linear Forward (transition mode).
- The interpretation is similar for all transition command lines.



```
0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS 4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
SELECT TRANSITION AUTO-PROG (1-9) > X
```

Figure 89-2



```
IF T1 REACHED IN MODE, DIR -> MODE, DIR
PIV, FOR -> LIN, FOR LIN, FOR -> LIN, FOR
PIV, REV -> PIV, REV LIN, REV -> PIV, REV
PRESS 0..EXIT 1..PREV 2..NEXT
```

Figure 89-3

1. Transition Command Line
2. Running Mode
3. Transition Mode

Valley AutoPilot Control Panel

Program

Auto-Prog Transitions (continued)

Auto-Prog Transition Table

AUTO-PROG NUMBER	TRANSITION LOCATIONS, MODES AND DIRECTIONS	RUNNING MODE	TRANSITION NUMBER / TRANSITION MODE			
			T1	T2	T3	T4
1		Pivot/Forward	Linear/Forward to T3	Pivot/Forward *	Pivot/Forward *	Linear/Reverse to T2
		Pivot/Reverse	Pivot/Reverse *	Linear/Forward to T4	Linear/Reverse to T1	Pivot/Reverse *
		Linear/Forward	Linear/Forward *	Linear/Forward *	Pivot/Forward to T4	Pivot/Reverse to T3
		Linear/Reverse	Pivot/Reverse to T2	Pivot/Forward to T1	Linear/Reverse *	Linear/Reverse *
2		Pivot/Forward	Linear/Forward *	Linear/Forward to T4	Linear/Reverse to T1	Linear/Reverse *
		Pivot/Reverse	Linear/Forward to T3	Linear/Forward *	Linear/Reverse *	Linear/Reverse to T2
		Linear/Forward	Linear/Forward *	Linear/Forward *	Pivot/Reverse to T4	Pivot/Forward to T3
		Linear/Reverse	Pivot/Forward to T2	Pivot/Reverse to T1	Linear/Reverse *	Linear/Reverse *
3		Pivot/Forward	Linear/Forward to T3	Pivot/Forward *	Linear/Reverse to T1	Pivot/Forward *
		Pivot/Reverse	Pivot/Reverse *	Linear/Forward to T4	Pivot/Reverse *	Linear/Reverse to T2
		Linear/Forward	Linear/Forward *	Linear/Forward *	Pivot/Reverse to T4	Pivot/Forward to T3
		Linear/Reverse	Pivot/Reverse to T2	Pivot/Forward to T1	Linear/Reverse *	Linear/Reverse *
4		Pivot/Forward	Pivot/Forward *	Linear/Forward to T4	Pivot/Forward *	Linear/Reverse to T2
		Pivot/Reverse	Linear/Forward to T3	Pivot/Reverse *	Linear/Reverse to T1	Pivot/Reverse *
		Linear/Forward	Linear/Forward *	Linear/Forward *	Pivot/Forward to T4	Pivot/Reverse to T3
		Linear/Reverse	Pivot/Forward to T2	Pivot/Reverse to T1	Linear/Reverse *	Linear/Reverse *
5		Pivot/Forward	Pivot/Forward *	Pivot/Forward *	Pivot/Forward *	Pivot/Forward *
		Pivot/Reverse	Pivot/Reverse *	Pivot/Reverse	Pivot/Reverse *	Pivot/Reverse *
		Linear/Forward	Linear/Forward *	Linear/Forward *	Linear/Reverse to T1	Linear/Reverse to T2
		Linear/Reverse	Linear/Forward to T3	Linear/Forward to T4	Linear/Reverse *	Linear/Reverse *
6		Pivot/Forward	Pivot/Forward to T2	Pivot/Forward to T1	Pivot/Forward to T4	Pivot/Forward to T3
		Pivot/Reverse	Pivot/Reverse to T2	Pivot/Reverse to T1	Pivot/Reverse to T4	Pivot/Reverse to T3
		Linear/Forward	Pivot/Forward *	Pivot/Reverse *	Pivot/Forward *	Pivot/Reverse *
		Linear/Reverse	Pivot/Reverse *	Pivot/Forward *	Pivot/Reverse *	Pivot/Forward *
7		Pivot/Forward	Pivot/Reverse to T2	Pivot/Forward *	Pivot/Forward *	Pivot/Reverse to T3
		Pivot/Reverse	Pivot/Reverse *	Pivot/Forward to T1	Pivot/Forward to T4	Pivot/Reverse *
		Linear/Forward	Pivot/Reverse *	Pivot/Forward *	Pivot/Forward *	Pivot/Reverse *
		Linear/Reverse	Pivot/Reverse *	Pivot/Forward *	Pivot/Forward *	Pivot/Reverse *
8		Pivot/Forward	Pivot/Reverse to T2	Pivot/Forward *	Pivot/Forward *	Linear/Reverse to T2
		Pivot/Reverse	Pivot/Reverse *	Linear/Forward to T4	Pivot/Forward to T4	Pivot/Reverse *
		Linear/Forward	Pivot/Reverse *	Linear/Forward *	Pivot/Forward *	Pivot/Reverse to T3
		Linear/Reverse	Pivot/Reverse *	Pivot/Forward to T1	Pivot/Forward *	Linear/Reverse *
9		Pivot/Forward	Linear/Forward to T3	Pivot/Forward *	Pivot/Forward *	Pivot/Reverse to T3
		Pivot/Reverse	Pivot/Reverse *	Pivot/Forward to T1	Linear/Reverse to T1	Pivot/Reverse *
		Linear/Forward	Linear/Forward *	Pivot/Forward *	Pivot/Forward to T4	Pivot/Reverse *
		Linear/Reverse	Pivot/Reverse to T2	Pivot/Forward *	Linear/Reverse *	Pivot/Reverse *

Figure 90-1

Although part of the Auto Program, this transition mode will never occur because the machine cannot physically reach the transition in the related running mode.

Valley AutoPilot Control Panel

Program

Valley AutoPilot Control Panel

Program Examples

Designing Step Programs

A Step program is a list of conditions and commands that need to occur in a specified order. The completed step program design form example below illustrates how to use the form to outline the following example program. See figure 92-1.

Example Step Program and Design Form

Current Conditions:

- Machine off at 0 feet in Linear A.
- Stop In Slot is ON and set at 0 feet in Linear A.

Program Machine To:

- Start: On 08/08/07, at 3:00 A.M., Water ON, Depth 0.50", Forward.
- At Pivot B: Water ON, Depth 1.00".
- At Pivot A: Water ON, Depth 1.00".
- At Position 270°: Water ON, Depth 0.50".

The program design form has been filled out to reflect the example program. If you complete the program design form, then entering the program is easy. Just follow each column down and enter the correct information.

Blank sector program design forms are provided at the end of the program examples.

Follow these steps as a guide when thinking about programs you want to write:

1. Make a sketch of the field. Identify what you want the irrigation machine to do.
2. Determine what must happen first. This will be step #1. (Ex. Start on 08/08/07 at 3:00 A.M.)
3. Identify the condition. Will step #1 occur at a position in the field, a date/time, a specified time delay, or other condition. (Ex. 08/08/07 at 3:00 A.M.)
4. Identify what commands need to occur for step 1 (ex. WATER ON, FORWARD, START, DEPTH 0.50 inch).
5. Determine conditions and commands for all other steps.

THE STEP PROGRAM STEPS ARE EXECUTED IN A SEQUENTIAL ORDER.

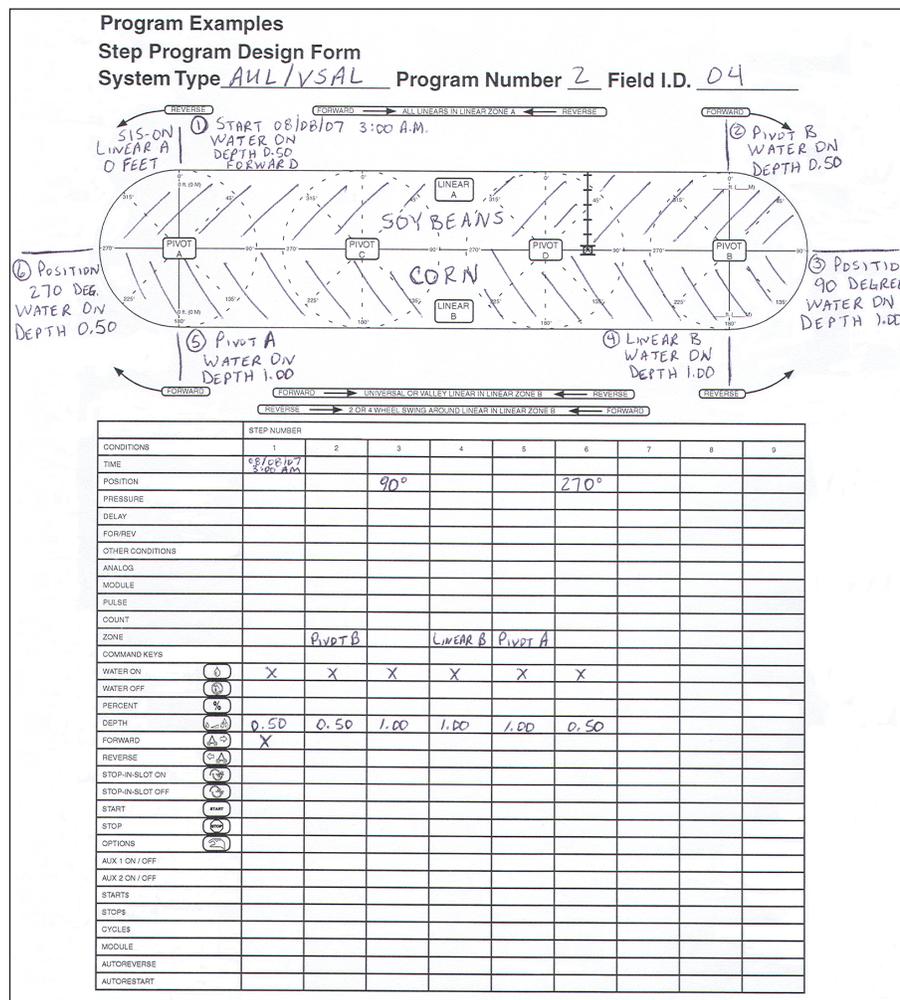


Figure 92-1

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone

In this program example, the machine is being programmed to start on a specific date and time, water part of the field, turn Water OFF and increase speed over set aside acres, then turn Water ON, set depth, water another portion of the field, set depth, water the remainder of the field, and stop at Linear Zone A. See figure 93-1.

Current Machine Condition:

- System Type set to AUL/VSAL.
- Transition Auto-Prog 1 is loaded.
- Machine is OFF at 0 feet in Linear Zone A with transition mode set to Auto.

Program Machine By:

- Time: On 08/08/07, at 3:00 A.M., Water ON, Depth 1.00", Forward, Start.
- Position: At 750 ft., Water OFF, Percent 100.
- Zone: At Pivot Zone B, Water OFF, Percent 100.
- Position: At 45°, Water ON, Depth 0.75".
- Zone: At Linear Zone B, Water ON, Depth 0.75".
- Position: At 500 ft., Depth 1.00".
- Zone: At Pivot Zone A, Water ON, Depth 1.00".
- Zone: At Linear Zone A, Stop.

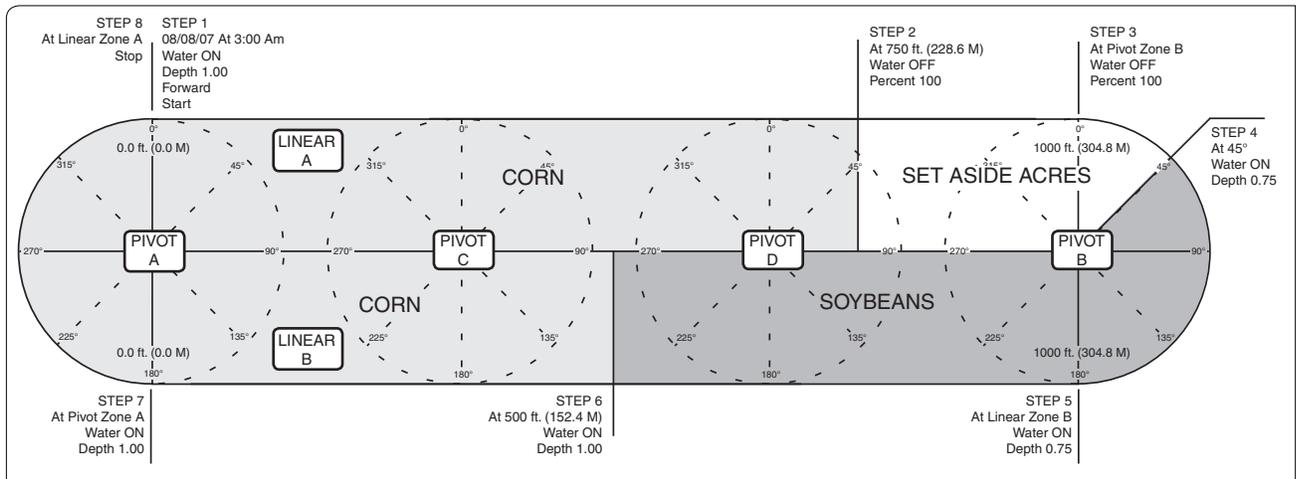


Figure 93-1

To program example 1.0, follow these steps:

1. Start a new program. See figures 93-2, 93-3, and 93-4.

(a) Press .

(b) Press **1** for STEP PROGRAMS.

(c) Press **2** for CREATE NEW.

0 EXIT	3 PROGRAM TRANSITIONS
1 STEP PROGRAMS	4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS	
PRESS NUMBER > 1	

Figure 93-2

0 EXIT	3 REVIEW CURRENT	6 ERASE
1 RUN STORED	4 REVIEW STORED	
2 CREATE NEW	5 EDIT	
PRESS NUMBER > 2		

Figure 93-3

STEP 1 PROGRAM BY:			
0 EXIT	2 POSITION	4 DELAY	6 OTHER
1 TIME	3 PRESSURE	5 FOR/REV	
PRESS NUMBER >			

Figure 93-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

STEP 1 - Example 1.0

2. Program step 1 by Time.

- Press for TIME.
- Enter the date , , , , , for August 8, 2007 and press . See figure 94-1.
- Enter the time , , , , , for 3:00 A.M. and press . See figures 94-2 and 94-3.

3. Enter the commands to execute on 08/08/07 at 3:00 A.M. Each command appears on the screen when entered. See figure 94-4.

- Press .
- Press .
- Press .
- Press for 1.00 inch.
- Press to retain the value.
- Press .

4. Finish step 1. See figure 94-5.

- Press .
- Press for NEXT STEP.

STEP 2 - Example 1.0

5. Program step 2 by position. See figures 94-6, 94-7, and 94-8.

- Press for POSITION.
- Press for DISTANCE.
- Press , , for 750 feet.
- Press to retain the value.

```
STEP 1 PROGRAM BY: TIME

ENTER DATE (07/27/07) > 08/08/07
```

Figure 94-1

```
STEP 1 PROGRAM BY: TIME

ENTER TIME (08:04) > 03:00:00
```

Figure 94-2

```
STEP 1 AT: 08/08/07 03:00:00,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 94-3

```
STEP 1 AT: 08/08/07 03:00:00, WATER ON,
FORWARD, DEPTH 1.00, START,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 94-4

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 94-5

```
STEP 2 PROGRAM BY: POSITION

POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 94-6

```
STEP 2 PROGRAM BY: POSITION

ENTER DISTANCE (900) > 750
```

Figure 94-7

```
STEP 2 AT: 750 FEET,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 94-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

6. Enter the commands to be executed at the position. Each command appears on the screen when entered. See figure 95-1.

(a) Press .

(b) Press .

(c) Press , ,  for 100 percent.

(d) Press  to retain the value.

7. Finish step 2. See figure 95-2.

(a) Press .

(b) Press  for NEXT STEP.

STEP 3 - Example 1.0

8. Program step 3 by zone. See figures 95-3, 95-4, and 95-5.

(a) Press  for OTHER.

(b) Press  for ZONE.

(c) Press  for PIVOT.

(d) Press  for ZONE B.

9. Enter the commands to be executed at the position. Each command appears on the screen when entered. See figure 95-6.

(a) Press .

(b) Press .

(c) Press , ,  for 100 percent.

(d) Press  to retain the value.

10. Finish step 3. See figure 95-7.

(a) Press .

(b) Press  for NEXT STEP.

```
STEP 2 AT: 750 FEET, WATER OFF,  
PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 95-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 95-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 95-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 95-4

```
STEP 3 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 95-5

```
STEP 3 AT: ZONE PIVOT B, WATER OFF,  
PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 95-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 95-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

STEP 4 - Example 1.0

11. Program step 4 by position. See figures 96-1, 96-2, and 96-3.

- (a) Press for POSITION.
- (b) Press for DEGREE.
- (c) Press , for 45 degrees.
- (d) Press to retain the value.

12. Enter the commands to be executed at the position. Each command appears on the screen when entered. See figure 96-4.

- (a) Press .
- (b) Press .
- (c) Press , , for 0.75 inches.
- (d) Press to retain the value.

13. Finish step 4. See figure 96-5.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 5 - Example 1.0

14. Program step 5 by zone. See figures 96-6, 96-7, and 96-8.

- (a) Press for OTHER.
- (b) Press for ZONE.
- (c) Press for LINEAR.
- (d) Press for ZONE B.

```
STEP 4 PROGRAM BY: POSITION

POSITION 1..DISTANCE 2..DEGREES > 2
```

Figure 96-1

```
STEP 4 PROGRAM BY: POSITION

ENTER DEGREES ( 90.0) > 45
```

Figure 96-2

```
STEP 4 AT: 45.0 DEGREES,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 96-3

```
STEP 4 AT: 45.0 DEGREES, WATER ON,
DEPTH 0.75,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 96-4

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 96-5

```
STEP 5 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 96-6

```
STEP 5 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 2
```

Figure 96-7

```
STEP 5 AT: ZONE LINEAR B,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 96-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

15. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 97-1.

- (a) Press .
- (b) Press .
- (c) Press , ,  for 0.75 inches.
- (d) Press  to retain the value.

```
STEP 5 AT: ZONE LINEAR B, WATER ON,  
DEPTH 0.75,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 97-1

16. Finish step 5. See figure 97-2.

- (a) Press .
- (b) Press  for NEXT STEP.

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 97-2

STEP 6 - Example 1.0

17. Program step 6 by position. See figures 97-3, 97-4, and 97-5.

- (a) Press  for POSITION.
- (b) Press  for DISTANCE.
- (c) Press , ,  for 500 feet.
- (d) Press  to retain the value.

```
STEP 6 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 97-3

18. Enter the commands to be executed at the position. Each command appears on the screen when entered. See figure 97-6.

- (a) Press .
- (b) Press .
- (c) Press  for 1.00 inch.
- (d) Press  to retain the value.

```
STEP 6 PROGRAM BY: POSITION  
  
ENTER FEET ( 900 ) > 500
```

Figure 97-4

```
STEP 6 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 97-5

19. Finish step 6. See figure 97-7.

- (a) Press .
- (b) Press  for NEXT STEP.

```
STEP 6 AT: 500 FEET, WATER ON,  
DEPTH 1.00,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 97-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 97-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

STEP 7 - Example 1.0

20. Program step 7 by zone. See figures 98-1, 98-2, and 98-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE A.

21. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 98-4.

(a) Press .

(b) Press .

(c) Press for 1.00 inch.

(d) Press .

22. Finish step 7. See figure 98-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 8 - Example 1.0

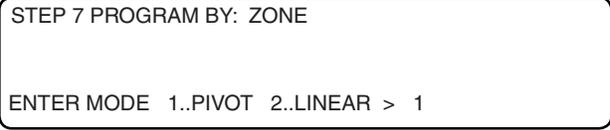
23. Program step 8 by zone. See figures 98-6, 98-7, and 98-8.

(a) Press for OTHER.

(b) Press for ZONE.

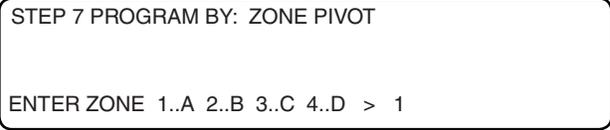
(c) Press for LINEAR.

(d) Press for ZONE A.



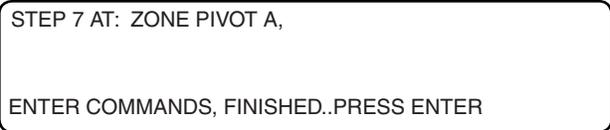
```
STEP 7 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 98-1



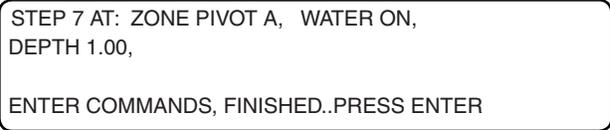
```
STEP 7 PROGRAM BY: ZONE PIVOT
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 98-2



```
STEP 7 AT: ZONE PIVOT A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 98-3



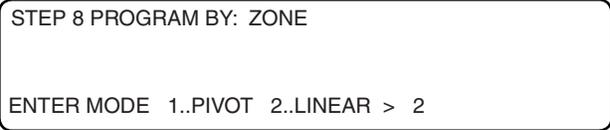
```
STEP 7 AT: ZONE PIVOT A, WATER ON,
DEPTH 1.00,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 98-4



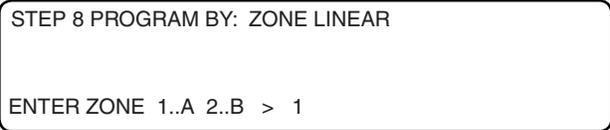
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 98-5



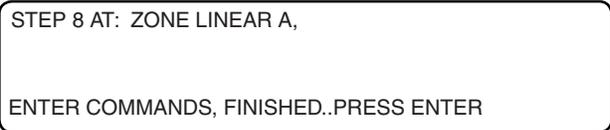
```
STEP 8 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 98-6



```
STEP 8 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 1
```

Figure 98-7



```
STEP 8 AT: ZONE LINEAR A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 98-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.0 Program By Time, Position, And Zone (continued)

24. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 99-1.

(a) Press .

25. Finish step 8.

(a) Press .

26. Finish the program. See figure 99-2.

(a) Press  for PROGRAM FINISHED.

27. Select one of the following. See figures 99-3, 99-4, and 99-5.

• Press  to SAVE PROGRAM.

(a) Select program number 1-17.

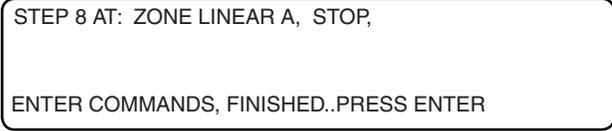
(b) Press  to save program.

• Press  to SAVE PROGRAM AND RUN.

(a) Select program number 1-17.

(b) Press  to save program and run.

• Press  to CANCEL PROGRAM.



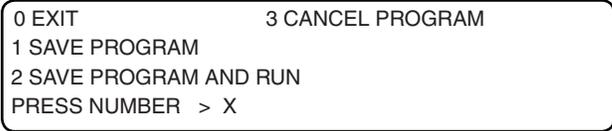
```
STEP 8 AT: ZONE LINEAR A, STOP,  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 99-1



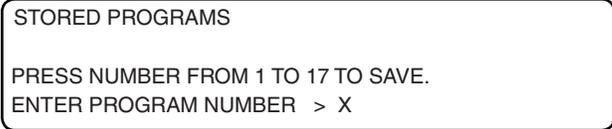
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 99-2



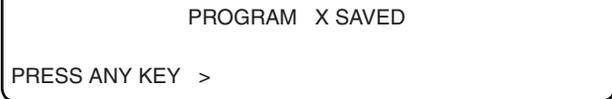
```
0 EXIT  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
3 CANCEL PROGRAM  
PRESS NUMBER > X
```

Figure 99-3



```
STORED PROGRAMS  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > X
```

Figure 99-4



```
PROGRAM X SAVED  
PRESS ANY KEY >
```

Figure 99-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot

In this programming example, the machine is programmed to start at a specific date and time. Water one half of the field, turn AUX1 ON and increase speed over one half of the field, then turn AUX1 OFF, slow down, and turn SIS ON then water the remaining portion of the field. The SIS is set at 90°. See figure 100-1.

Current Conditions:

- System Type set to AUL/VSAL.
- No sector programs are current.
- Transition Auto Program 1 is loaded.
- Machine is OFF at 500 feet in Linear Zone A with transition mode set to Auto.
- SIS is currently OFF and is set at 500 feet in Linear Zone A.

Program Machine By:

- Time: At 3:00 A.M., on 08/08/07, Water ON, Depth 0.75", Forward, Start.
- Zone: At Pivot Zone B, Water ON, Depth 0.75".
- Position: At 90°, Aux1 ON, Percent 100.
- Zone: At Linear Zone B, Water ON, Aux1 ON, Percent 100.
- Zone: At Pivot Zone A, Water ON, Aux1 ON, Percent 100.
- Position: At 270°, Aux1 OFF, Depth 0.75".
- Zone: At Linear Zone A, Water ON, Depth 0.75", SIS ON. Machine will stop at the stop-in-slot position of 500 feet in Linear Zone A.

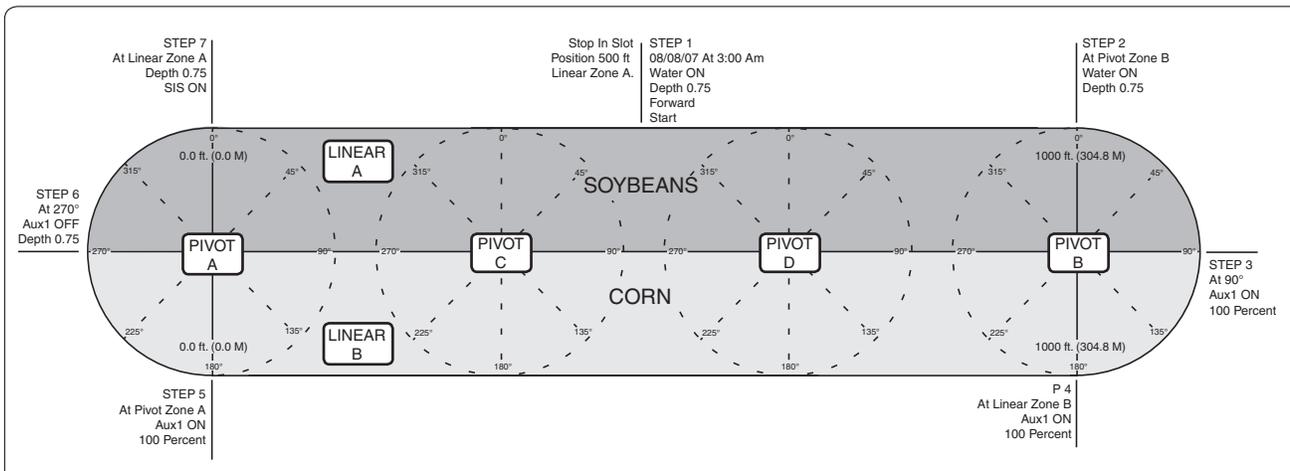


Figure 100-1

To program example 1.1, follow these steps:

1. Start a new program. See figures 100-2, 100-3, and 100-4.
 - (a) Press .
 - (b) Press **1** for STEP PROGRAMS.
 - (c) Press **2** for CREATE NEW.

```

0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 1
    
```

Figure 100-2

```

0 EXIT                3 REVIEW CURRENT    6 ERASE
1 RUN STORED         4 REVIEW STORED
2 CREATE NEW         5 EDIT
PRESS NUMBER > 2
    
```

Figure 100-3

```

STEP 1 PROGRAM BY:
0 EXIT                2 POSITION          4 DELAY          6 OTHER
1 TIME                3 PRESSURE        5 FOR/REV
PRESS NUMBER >
    
```

Figure 100-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot (continued)

STEP 1 - Example 1.1

2. Program step 1 by Time.

(a) Press for TIME.

(b) Enter the date , , , , , for August 8, 2007 and press . See figure 101-1.

(c) Enter the time , , , , , for 3:00 A.M. and press . See figures 101-2 and 101-3.

3. Enter the commands to execute on 08/08/07 at 3:00 A.M. Each command appears on the screen when entered. See figure 101-4.

(a) Press .

(b) Press .

(c) Press .

(d) Press , , for 0.75 inch.

(e) Press to retain the value.

(f) Press .

4. Finish step 1 and display the next step screen. See figure 101-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.1

5. Program step 2 by zone. See figures 101-6, 101-7, and 101-8.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE B.

STEP 1 PROGRAM BY: TIME

ENTER DATE (07/27/07) > 08/08/07

Figure 101-1

STEP 1 PROGRAM BY: TIME

ENTER TIME (08:04) > 03:00:00

Figure 101-2

STEP 1 AT: 08/08/07 03:00:00,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 101-3

STEP 1 AT: 08/08/07 03:00:00, WATER ON,
FORWARD, DEPTH 0.75, START,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 101-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 101-5

STEP 2 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 1

Figure 101-6

STEP 2 PROGRAM BY: ZONE PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 2

Figure 101-7

STEP 2 AT: ZONE PIVOT B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 101-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot (continued)

6. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 102-1.

(a) Press .

(b) Press .

(c) Press , ,  for 0.75 inches.

(d) Press  to retain the value.

7. Finish step 2. See figure 102-2.

(a) Press .

(b) Press  for NEXT STEP.

STEP 3 - Example 1.1

8. Program step 3 by position. See figures 102-3, 102-4, and 102-5.

(a) Press  for POSITION.

(b) Press  for DEGREE.

(c) Press ,  for 90 degrees.

(d) Press  to retain the value.

9. Enter the commands to be executed at the position. See figure 102-6.

(a) Press .

(b) Press  for AUX1.

(c) Press  for AUX1 ON.

(d) Press .

(e) Press , ,  for 100 percent.

(f) Press  to retain the value.

10. Finish step 3 and display the next step screen. See figure 102-7.

(a) Press .

(b) Press  for NEXT STEP.

```
STEP 2 AT: ZONE PIVOT B, WATER ON,  
DEPTH 0.75,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 102-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 102-2

```
STEP 3 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 2
```

Figure 102-3

```
STEP 3 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 180.0) > 90
```

Figure 102-4

```
STEP 3 AT: 90.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 102-5

```
STEP 3 AT: 90.0 DEGREES, AUXOUT1 ON,  
PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 102-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 102-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot (continued)

STEP 4 - Example 1.0

11. Program step 4 by zone. See figures 103-1, 103-2, and 103-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE B.

12. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 103-4.

(a) Press .

(b) Press , , for 100 percent.

(c) Press to retain the value.

13. Finish step 4. See figure 103-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 5 - Example 1.0

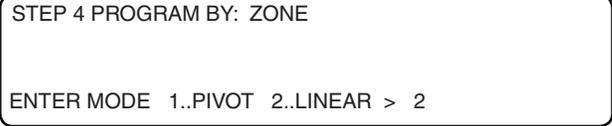
14. Program step 5 by zone. See figures 103-6, 103-7, and 103-8.

(a) Press for OTHER.

(b) Press for ZONE.

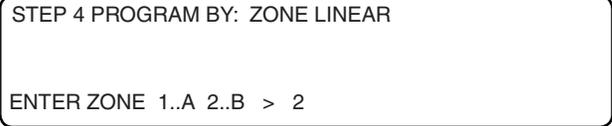
(c) Press for PIVOT.

(d) Press for ZONE A.



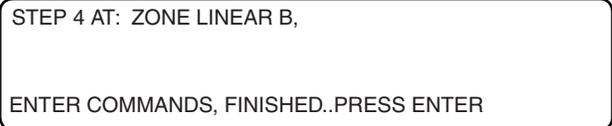
```
STEP 4 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 103-1



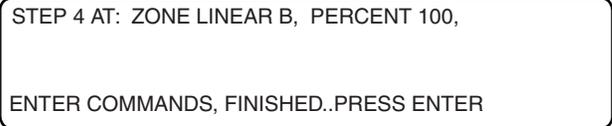
```
STEP 4 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 2
```

Figure 103-2



```
STEP 4 AT: ZONE LINEAR B,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 103-3



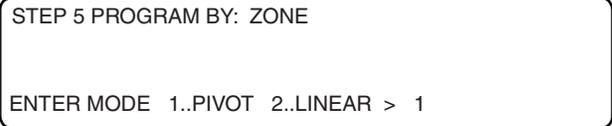
```
STEP 4 AT: ZONE LINEAR B, PERCENT 100,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 103-4



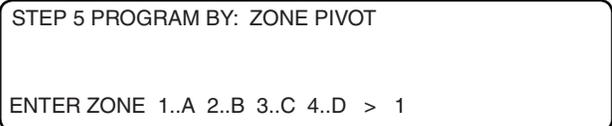
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 103-5



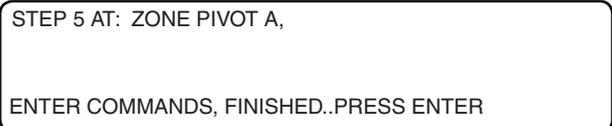
```
STEP 5 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 103-6



```
STEP 5 PROGRAM BY: ZONE PIVOT
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 103-7



```
STEP 5 AT: ZONE PIVOT A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 103-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot (continued)

15. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 104-1.

- (a) Press .
- (b) Press , , for 100 percent.
- (c) Press to retain the value.

16. Finish step 5. See figure 104-2.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 6 - Example 1.1

17. Program step 6 by position. See figures 104-3, 104-4, and 104-5.

- (a) Press for POSITION.
- (b) Press for DEGREE.
- (c) Press , , for 270 degrees.
- (d) Press to retain the value.

18. Enter the commands to be executed at the position. See figure 104-6.

- (a) Press .
- (b) Press for AUX1.
- (c) Press for AUX1 OFF.
- (d) Press .
- (e) Press , , for 0.75 inches.
- (f) Press to retain the value.

19. Finish step 6 and display the next step screen. See figure 104-7.

- (a) Press .
- (b) Press for NEXT STEP.

```
STEP 5 AT: ZONE PIVOT A, PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 104-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 104-2

```
STEP 6 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 2
```

Figure 104-3

```
STEP 6 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 90.0) > 270
```

Figure 104-4

```
STEP 6 AT: 270.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 104-5

```
STEP 6 AT: 270.0 DEGREES, AUXOUT1 OFF,  
DEPTH 0.75,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 104-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 104-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.1 Program By Time, Zone, and Position Using Stop In Slot (continued)

STEP 7 - Example 1.1

20. Program step 7 by zone. See figures 105-1, 105-2, and 105-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE A.

21. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 105-4.

(a) Press .

(b) Press , , for 0.75 inch.

(c) Press to retain the value.

(d) Press .

22. Finish step 7.

(a) Press .

23. Finish the program. See figure 105-5.

(a) Press for PROGRAM FINISHED.

24. Select one of the following. See figures 105-6, 105-7, and 105-8.

• Press to SAVE PROGRAM.

(a) Select program number 1-17.

(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 1-17.

(b) Press to save program and run.

• Press to CANCEL PROGRAM.

STEP 7 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2

Figure 105-1

STEP 7 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 1

Figure 105-2

STEP 7 AT: ZONE LINEAR A,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 105-3

STEP 7 AT: ZONE LINEAR A, DEPTH 0.75,
SIS ON,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 105-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1

Figure 105-5

0 EXIT
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
3 CANCEL PROGRAM
PRESS NUMBER > X

Figure 105-6

STORED PROGRAMS

PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > X

Figure 105-7

PROGRAM X SAVED

PRESS ANY KEY >

Figure 105-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay

In this example, the end of field stop/auto-reverse is not being used since there are no physical obstacles in the field. This example requires more than 9 steps; two programs will be used. The machine is being programmed to reverse at 270° in pivot zone A and stop at 90° in pivot zone B. See figure 106-1.

Program One

Current Conditions:

- Machine is running in Pivot Zone B at 90°, Water ON, Percent 50, Forward.
- The end-of-field stop/auto reverse is not being used.

Program Machine To:

- Zone: At Linear Zone B, Water ON, Percent 50.
- Position: At 500 feet, Percent 80.
- Zone: At Pivot Zone A, Percent 80.
- Position: At 270°, Reverse, Percent 0.
- Delay: At 600 Seconds, Percent 50, Run Program 2 (delay to improve water uniformity at reverse point).

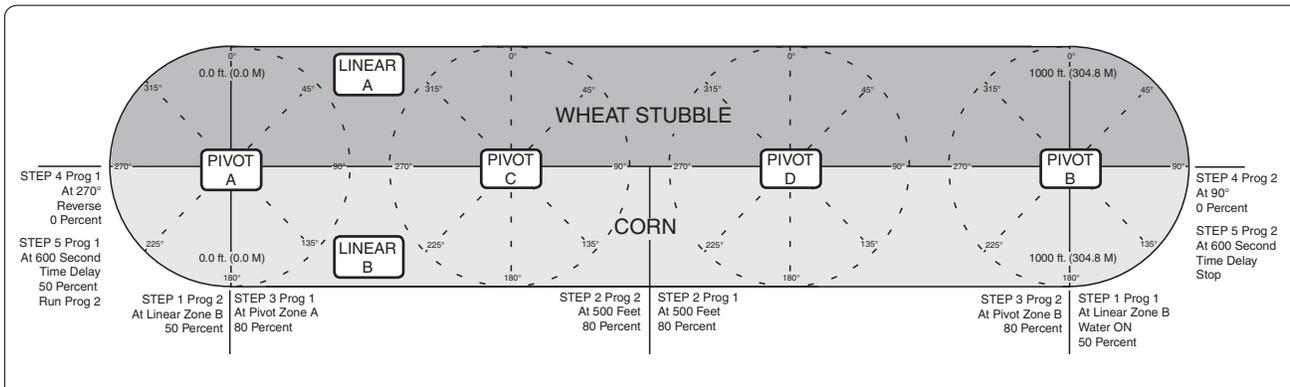


Figure 106-1

To write Program One of example 1.2, follow these steps:

1. Start a new program. See figures 106-2, 106-3, and 106-4.

(a) Press .

(b) Press **1** for STEP PROGRAMS.

(c) Press **2** for CREATE NEW.

```

0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS  4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER >
    
```

Figure 106-2

```

0 EXIT          3 REVIEW CURRENT    6 ERASE
1 RUN STORED   4 REVIEW STORED
2 CREATE NEW   5 EDIT
PRESS NUMBER >
    
```

Figure 106-3

```

STEP 1 PROGRAM BY:
0 EXIT          2 POSITION          4 DELAY          6 OTHER
1 TIME          3 PRESSURE        5 FOR/REV
PRESS NUMBER >
    
```

Figure 106-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

STEP 1 - Example 1.2 Program 1

2. Program step 1 by zone. See figures 107-1, 107-2, and 107-3.
 - (a) Press for OTHER.
 - (b) Press for ZONE.
 - (c) Press for LINEAR.
 - (d) Press for ZONE B.
3. Enter the commands to be executed at the zone. See figure 107-4.
 - (a) Press .
 - (b) Press .
 - (c) Press , for 50 percent.
 - (d) Press to retain the value.
4. Finish step 1 and display the next step screen. See figure 107-5.
 - (a) Press .
 - (b) Press for NEXT STEP.

STEP 2 - Example 1.2 Program 1

5. Program step 2 by position. See figures 107-6, 107-7, and 107-8.
 - (a) Press for POSITION.
 - (b) Press for DISTANCE.
 - (c) Press , , for 500 feet.
 - (d) Press to retain the value.

```
STEP 1 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 107-1

```
STEP 1 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 2
```

Figure 107-2

```
STEP 1 AT: ZONE LINEAR B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 107-3

```
STEP 1 AT: ZONE LINEAR B, WATER ON,  
PERCENT 50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 107-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 107-5

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 107-6

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DISTANCE (900) > 500
```

Figure 107-7

```
STEP 2 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 107-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

6. Enter the commands to be executed at the position. See figure 108-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 108-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.2 Program 1

8. Program step 3 by zone. See figures 108-3, 108-4, and 108-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE A.

9. Enter the commands to be executed at the zone. See figure 108-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 108-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 108-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 108-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 108-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 108-4

```
STEP 3 AT: ZONE PIVOT A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 108-5

```
STEP 3 AT: ZONE PIVOT A, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 108-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 108-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

STEP 4 - Example 1.2 Program 1

11. Program step 4 by position. See figures 109-1, 109-2, and 109-3.

- Press for POSITION.
- Press for DEGREE.
- Press , , for 270 degrees.
- Press to retain the value.

12. Enter the commands to be executed at the position. See figure 109-4.

- Press .
- Press for 0 percent.
- Press to retain the value.

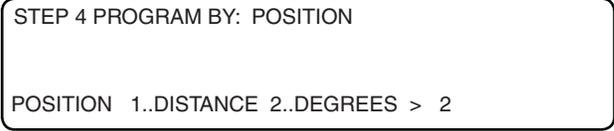
13. Finish step 4 and display the next step screen. See figure 109-5.

- Press .
- Press for NEXT STEP.

STEP 5 - Example 1.2 Program 1

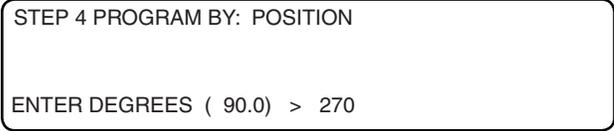
14. Program step 5 by delay. See figures 109-6, 109-7, and 109-8.

- Press for DELAY.
- Press for SECONDS.
- Press , , for 600 seconds.
- Press to retain the value.



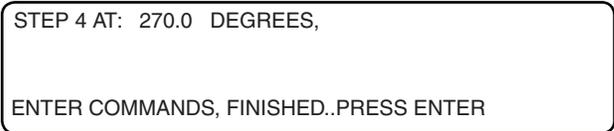
```
STEP 4 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 2
```

Figure 109-1



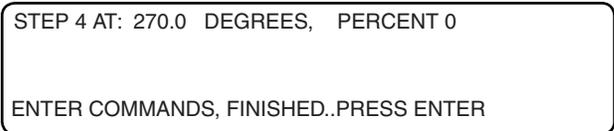
```
STEP 4 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 90.0 ) > 270
```

Figure 109-2



```
STEP 4 AT: 270.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 109-3



```
STEP 4 AT: 270.0 DEGREES, PERCENT 0  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 109-4



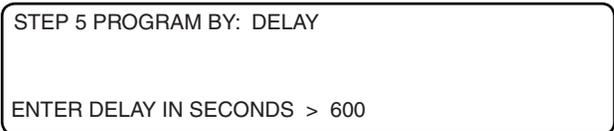
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 109-5



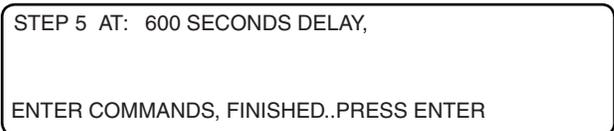
```
STEP 5 PROGRAM BY: DELAY  
  
DELAY 0..SECONDS 1..MINUTES > 0
```

Figure 109-6



```
STEP 5 PROGRAM BY: DELAY  
  
ENTER DELAY IN SECONDS > 600
```

Figure 109-7



```
STEP 5 AT: 600 SECONDS DELAY,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 109-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

15. Enter the commands to be executed at the delay.
See figure 110-1.

- (a) Press .
- (b) Press , for 50 percent.
- (c) Press to retain the value.
- (d) Press .

16. Select the program number to run. For this example use program 2.

- (a) Press for program 2.
- (b) Press to retain program.

17. Finish step 5 and display the next step screen.
See figure 110-2.

- (a) Press .

18. Finish program 1.

- (a) Press for PROGRAM FINISHED.

19. Save program 1. See figures 110-3, 110-4, and 110-5.

- (a) Press to SAVE PROGRAM.
- (b) Select program number 1.
- (c) Press to save program.

```
STEP 5 AT: 600 SECONDS DELAY,  
PERCENT 50, RUN PROGRAM 2,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 110-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 110-2

```
0 EXIT  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
3 CANCEL PROGRAM  
PRESS NUMBER > 1
```

Figure 110-3

```
STORED PROGRAMS  
  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 1
```

Figure 110-4

```
PROGRAM 1 SAVED  
  
PRESS ANY KEY >
```

Figure 110-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

Program Two

Write the second program. See figure 111-1.

Current Conditions:

- Machine is running in Pivot Zone A at 270°, Water ON, Percent 50, Reverse.
- The end-of-field stop/auto reverse is not being used.

Program Machine To:

- Zone: At Linear Zone B, Percent 50.
- Position: At 500 feet, Percent 80.
- Zone: At Pivot Zone B, Percent 80.
- Direction: At Forward, Percent 0.
- Delay: At 600 Seconds, Stop (delay to improve water uniformity at reverse point).

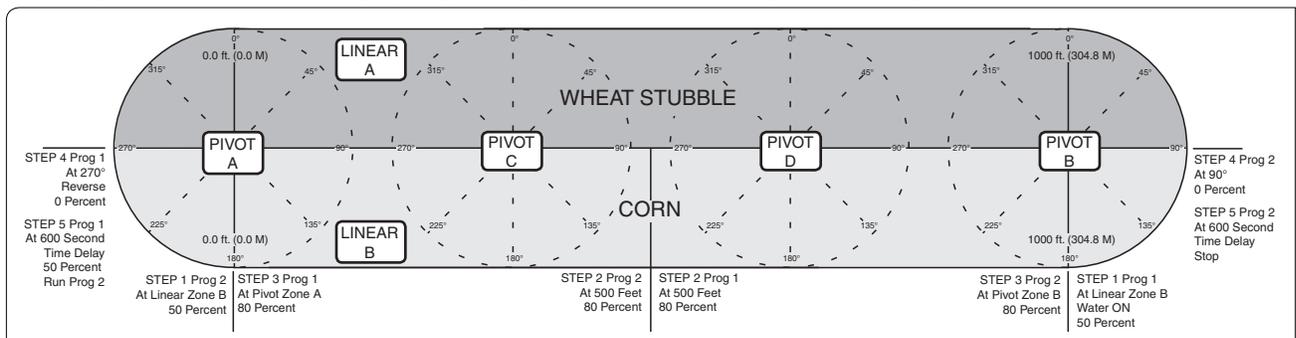


Figure 111-1

To write Program Two of example 1.2, follow these steps:

1. Start a new program. See figures 111-2, 111-3, and 111-4.

(a) Press .

(b) Press **1** for STEP PROGRAMS.

(c) Press **2** for CREATE NEW.

```

0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS  4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER >
    
```

Figure 111-2

```

0 EXIT          3 REVIEW CURRENT    6 ERASE
1 RUN STORED   4 REVIEW STORED
2 CREATE NEW   5 EDIT
PRESS NUMBER >
    
```

Figure 111-3

```

STEP 1 PROGRAM BY:
0 EXIT          2 POSITION          4 DELAY          6 OTHER
1 TIME          3 PRESSURE        5 FOR/REV
PRESS NUMBER >
    
```

Figure 111-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

STEP 1 - Example 1.2 Program 2

2. Program step 1 by zone. See figures 112-1, 112-2, and 112-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR

(d) Press for ZONE B.

3. Enter the commands to be executed at the zone. See figure 112-4.

(a) Press .

(b) Press , for 50 percent.

(c) Press to retain the value.

4. Finish step 1 and display the next step screen. See figure 112-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.2 Program 2

5. Program step 2 by position. See figures 112-6, 112-7, and 112-8.

(a) Press for POSITION.

(b) Press for DISTANCE.

(c) Press , , for 500 feet.

(d) Press to retain the value.

```
STEP 1 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 112-1

```
STEP 1 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 2
```

Figure 112-2

```
STEP 1 AT: ZONE LINEAR B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 112-3

```
STEP 1 AT: ZONE LINEAR B, PERCENT 50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 112-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 112-5

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 112-6

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DISTANCE (900) > 500
```

Figure 112-7

```
STEP 2 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 112-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

6. Enter the commands to be executed at the position. See figure 113-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 113-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.2 Program 2

8. Program step 3 by zone. See figures 113-3, 113-4, and 113-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE B.

9. Enter the commands to be executed at the zone. See figure 113-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 113-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 113-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 113-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 113-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 113-4

```
STEP 3 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 113-5

```
STEP 3 AT: ZONE PIVOT B, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 113-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 113-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

STEP 4 - Example 1.2 Program 2

11. Program step 4 by position. See figures 114-1, 114-2, and 114-3.

(a) Press for POSITION.

(b) Press for DEGREE.

(c) Press , for 90 degrees.

(d) Press to retain the value.

12. Enter the commands to be executed at the position. See figure 114-4.

(a) Press .

(b) Press for 0 percent.

(c) Press to retain the value.

13. Finish step 4 and display the next step screen. See figure 114-5

(a) Press .

(b) Press for NEXT STEP.

STEP 5 - Example 1.2 Program 2

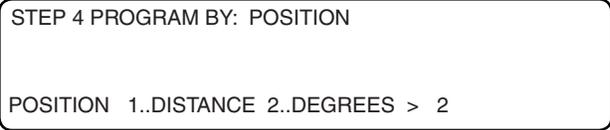
14. Program step 5 by delay. See figures 114-6, 114-7, and 114-8.

(a) Press for DELAY.

(b) Press for SECONDS.

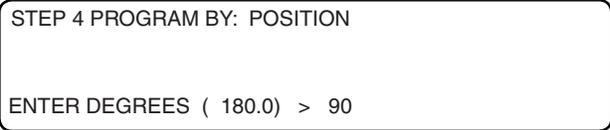
(c) Press , , for 600 seconds.

(d) Press to retain the value.



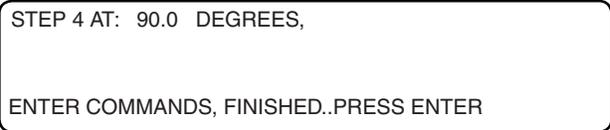
```
STEP 4 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 2
```

Figure 114-1



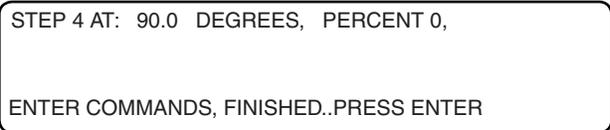
```
STEP 4 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 180.0 ) > 90
```

Figure 114-2



```
STEP 4 AT: 90.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 114-3



```
STEP 4 AT: 90.0 DEGREES, PERCENT 0,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 114-4



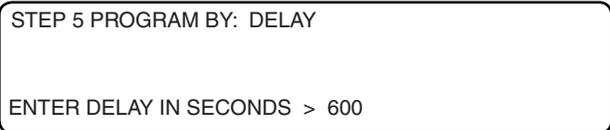
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 114-5



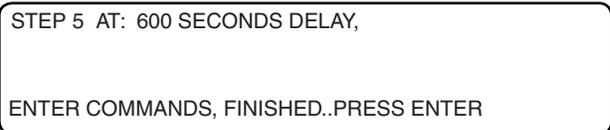
```
STEP 5 PROGRAM BY: DELAY  
  
DELAY 0..SECONDS 1..MINUTES > 0
```

Figure 114-6



```
STEP 5 PROGRAM BY: DELAY  
  
ENTER DELAY IN SECONDS > 600
```

Figure 114-7



```
STEP 5 AT: 600 SECONDS DELAY,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 114-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.2 Program By Zone, Position, and Delay (continued)

15. Enter the commands to be executed at the delay.
See figure 115-1.

(a) Press .

16. Finish step 5 and display the next step screen.
See figure 115-2.

(a) Press .

17. Finish program 2. See figure 115-2.

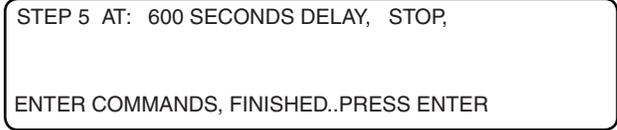
(a) Press  for PROGRAM FINISHED.

18. Save program 2. See figures 115-3, 115-4, and 115-5.

(a) Press  to SAVE PROGRAM.

(b) Select program number 2.

(c) Press  to save program.



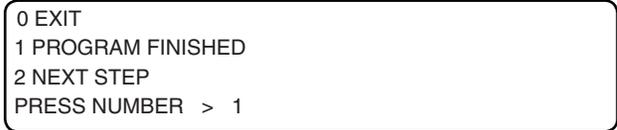
```
STEP 5 AT: 600 SECONDS DELAY, STOP,  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 115-1



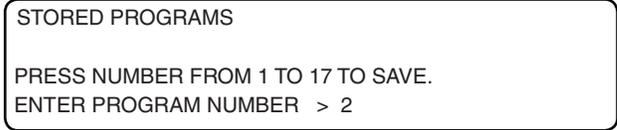
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 115-2



```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 115-3



```
STORED PROGRAMS  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 2
```

Figure 115-4



```
PROGRAM 2 SAVED  
PRESS ANY KEY >
```

Figure 115-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction

In this example, the percent timer will be programmed to 0 when the end-of-field stop/auto reverse actuator arms are tripped in Pivot Zone A at 270° and in Pivot Zone B at 90°. This example requires more than 9 steps and two programs will be used. See figure 116-1.

Allowing the end-of field stop/auto reverse hardware to reverse the machine will provide more accuracy than programming a position to reverse the machine.

Program One

Current Conditions:

- Machine is running in Pivot Zone B at 90°, Water ON, Percent 50, Forward.
- The machine is equipped with end-of-field stop/auto reverse hardware. Barriers are located in Pivot Zone B at 90° and in Pivot Zone A at 270° to trip the arms and change the machine direction.

Program Machine To:

- Zone: At Linear Zone B, Water ON, Percent 50.
- Position: At 500 feet, Percent 80.
- Zone: At Pivot Zone A, Percent 80.
- Direction: At Reverse, Percent 0.
- Delay: At 600 Seconds, Percent 50, Run Program 2.

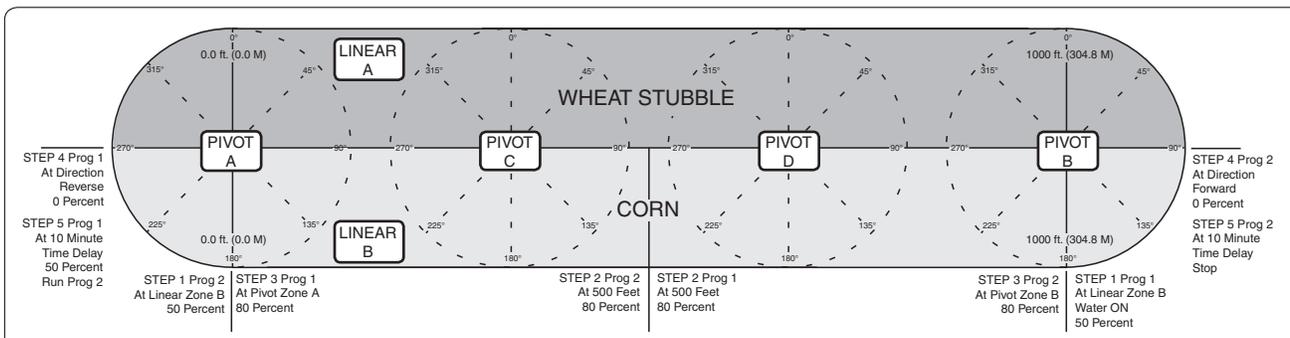


Figure 116-1

To write Program One of example 1.3, follow these steps:

1. Start a new program. See figures 116-2, 116-3, and 116-4.

(a) Press .

(b) Press **1** for STEP PROGRAMS.

(c) Press **2** for CREATE NEW.

```

0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS  4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER >
    
```

Figure 116-2

```

0 EXIT          3 REVIEW CURRENT    6 ERASE
1 RUN STORED   4 REVIEW STORED
2 CREATE NEW   5 EDIT
PRESS NUMBER >
    
```

Figure 116-3

```

STEP 1 PROGRAM BY:
0 EXIT          2 POSITION          4 DELAY          6 OTHER
1 TIME          3 PRESSURE        5 FOR/REV
PRESS NUMBER >
    
```

Figure 116-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

STEP 1 - Example 1.3 Program 1

2. Program step 1 by zone. See figures 117-1, 117-2, and 117-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE B.

3. Enter the commands to be executed at the zone. See figure 117-4.

(a) Press .

(b) Press .

(c) Press , for 50 percent.

(d) Press to retain the value.

4. Finish step 1 and display the next step screen. See figure 117-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.3 Program 1

5. Program step 2 by position. See figures 117-6, 117-7, and 117-8.

(a) Press for POSITION.

(b) Press for DISTANCE.

(c) Press , , for 500 feet.

(d) Press to retain the value.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2

Figure 117-1

STEP 1 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 2

Figure 117-2

STEP 1 AT: ZONE LINEAR B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 117-3

STEP 1 AT: ZONE LINEAR B, WATER ON,
PERCENT 50,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 117-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 117-5

STEP 2 PROGRAM BY: POSITION

POSITION 1..DISTANCE 2..DEGREES > 1

Figure 117-6

STEP 2 PROGRAM BY: POSITION

ENTER DISTANCE (900) > 500

Figure 117-7

STEP 2 AT: 500 FEET,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 117-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

6. Enter the commands to be executed at the position. See figure 118-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 118-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.3 Program 1

8. Program step 3 by zone. See figures 118-3, 118-4, and 118-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE A.

9. Enter the commands to be executed at the zone. See figure 118-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 118-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 118-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 118-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 118-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 118-4

```
STEP 3 AT: ZONE PIVOT A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 118-5

```
STEP 3 AT: ZONE PIVOT A, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 118-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 118-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

STEP 4 - Example 1.3 Program 1

11. Program step 4 by direction. See figures 119-1 and 119-2.

(a) Press for FOR/REV.

(b) Press for REVERSE.

12. Enter the commands to be executed at the position. See figure 119-3.

(a) Press .

(b) Press for 0 percent.

(c) Press to retain the value.

13. Finish step 4 and display the next step screen. See figure 119-4.

(a) Press .

(b) Press for NEXT STEP.

STEP 5 - Example 1.3 Program 1

14. Program step 5 by delay. See figures 119-5, 119-6, and 119-7.

(a) Press for DELAY.

(b) Press for MINUTES.

(c) Press , for 10 minutes.

(d) Press to retain the value.

```
STEP 4 PROGRAM BY: DIRECTION
DIRECTION 0..FORWARD 1..REVERSE > 1
```

Figure 119-1

```
STEP 4 AT: REVERSE,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 119-2

```
STEP 4 AT: REVERSE, PERCENT 0,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 119-3

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 119-4

```
STEP 5 PROGRAM BY: DELAY
DELAY 0..SECONDS 1..MINUTES > 1
```

Figure 119-5

```
STEP 5 PROGRAM BY: DELAY
ENTER DELAY IN MINUTES > 10
```

Figure 119-6

```
STEP 5 AT: 10 MINUTES DELAY,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 119-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

15. Enter the commands to be executed at the delay.
See figure 120-1.

- (a) Press .
- (b) Press , for 50 percent.
- (c) Press to retain the value.
- (d) Press .

16. Select the program number to run. For this example use program 2.

- (a) Press for program 2.
- (b) Press to retain program.

17. Finish step 5 and display the next step screen.
See figure 120-2.

- (a) Press .

18. Finish program 1.

- (a) Press for PROGRAM FINISHED.

19. Save program 1. See figures 120-3, 120-4, and 120-5.

- (a) Press to SAVE PROGRAM.
- (b) Select program number 1.
- (c) Press to save program.

```
STEP 5 AT: 10 MINUTES DELAY,  
PERCENT 50, RUN PROGRAM 2,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 120-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 120-2

```
0 EXIT                                3 CANCEL PROGRAM  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
PRESS NUMBER > 1
```

Figure 120-3

```
STORED PROGRAMS  
  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 1
```

Figure 120-4

```
PROGRAM 1 SAVED  
  
PRESS ANY KEY >
```

Figure 120-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples 1.3 Program By Direction Program Two

Write program two. See figure 121-1.

Current Conditions:

- Machine is running in Pivot Zone A at 270°, Water ON, Percent 50, Reverse.
- The machine is equipped with end-of-field stop/auto reverse hardware. Barriers are located in Pivot Zone B at 90° and in Pivot Zone A at 270° to trip the arms and change machine direction.

Program Machine To:

- • Zone: At Linear Zone B, Percent 50.
- • Position: At 500 feet, Percent 80.
- • Zone: At Pivot Zone B, Percent 80.
- • Direction: At Forward, Percent 0.
- • Delay: At 600 Seconds, Stop.

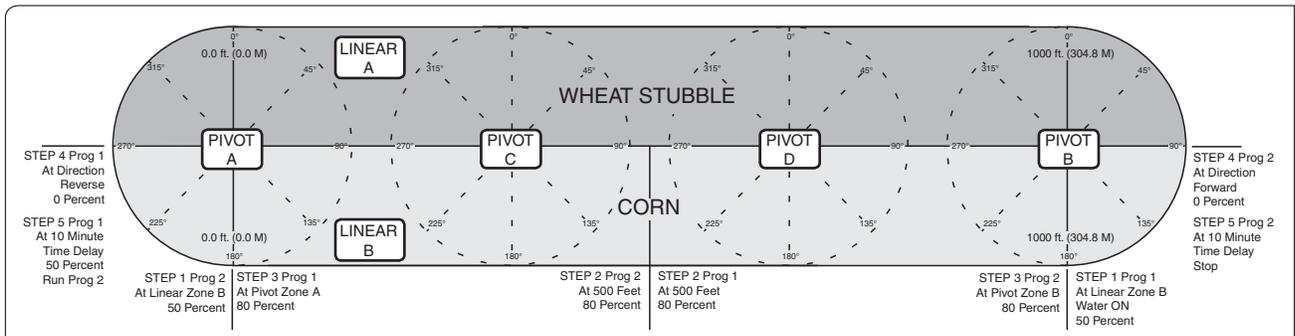


Figure 121-1

To write Program Two of example 1.3, follow these steps:

1. Start a new program. See figures 121-2, 121-3, and 121-4.

(a) Press .

(b) Press **1** for STEP PROGRAMS.

(c) Press **2** for CREATE NEW.

0 EXIT	3 PROGRAM TRANSITIONS
1 STEP PROGRAMS	4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS	
PRESS NUMBER >	

Figure 121-2

0 EXIT	3 REVIEW CURRENT	6 ERASE
1 RUN STORED	4 REVIEW STORED	
2 CREATE NEW	5 EDIT	
PRESS NUMBER >		

Figure 121-3

STEP 1 PROGRAM BY:			
0 EXIT	2 POSITION	4 DELAY	6 OTHER
1 TIME	3 PRESSURE	5 FOR/REV	
PRESS NUMBER >			

Figure 121-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

STEP 1 - Example 1.3 Program 2

2. Program step 1 by zone. See figures 122-1, 122-2, and 122-3

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE B.

3. Enter the commands to be executed at the zone. See figure 122-4.

(a) Press .

(b) Press , for 50 percent.

(c) Press to retain the value.

4. Finish step 1 and display the next step screen. See figure 122-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.3 Program 2

5. Program step 2 by position. See figures 122-6, 122-7, and 122-8.

(a) Press for POSITION.

(b) Press for DISTANCE.

(c) Press , , for 500 feet.

(d) Press to retain the value.

```
STEP 1 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 122-1

```
STEP 1 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 2
```

Figure 122-2

```
STEP 1 AT: ZONE LINEAR B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 122-3

```
STEP 1 AT: ZONE LINEAR B, PERCENT 50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 122-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 122-5

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 122-6

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DISTANCE (900) > 500
```

Figure 122-7

```
STEP 2 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 122-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

6. Enter the commands to be executed at the position. See figure 123-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 123-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.3 Program 2

8. Program step 3 by zone. See figures 123-3, 123-4, and 123-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE B.

9. Enter the commands to be executed at the zone. See figure 123-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 123-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 123-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 123-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 123-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 123-4

```
STEP 3 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 123-5

```
STEP 3 AT: ZONE PIVOT B, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 123-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 123-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

STEP 4 - Example 1.3 Program 2

11. Program step 4 by direction. See figures 124-1 and 124-2.

(a) Press for FOR/REV.

(b) Press for FORWARD.

12. Enter the commands to be executed at the direction. See figure 124-3.

(a) Press .

(b) Press for 0 percent.

(c) Press to retain the value.

13. Finish step 4 and display the next step screen. See figure 124-4.

(a) Press .

(b) Press for NEXT STEP.

STEP 5 - Example 1.3 Program 2

14. Program step 5 by delay. See figures 124-5, 124-6, and 124-7.

(a) Press for DELAY.

(b) Press for MINUTES.

(c) Press , for 10 minutes.

(d) Press to retain the value.

```
STEP 4 PROGRAM BY: DIRECTION  
  
DIRECTION 0..FORWARD 1..REVERSE > 0
```

Figure 124-1

```
STEP 4 PROGRAM BY: FORWARD  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 124-2

```
STEP 4 AT: FORWARD, PERCENT 0,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 124-3

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 124-4

```
STEP 5 PROGRAM BY: DELAY  
  
DELAY 0..SECONDS 1..MINUTES > 1
```

Figure 124-5

```
STEP 5 PROGRAM BY: DELAY  
  
ENTER DELAY IN MINUTES > 10
```

Figure 124-6

```
STEP 5 AT: 10 MINUTES DELAY,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 124-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.3 Program By Direction (continued)

15. Enter the commands to be executed at the delay.
See figure 125-1.

(a) Press .

16. Finish step 5 and display the next step screen.
See figure 125-2.

(a) Press .

17. Finish program 2.

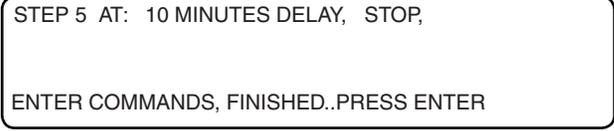
(a) Press  for PROGRAM FINISHED.

18. Save program 2. See figures 125-3, 125-4, and 125-5.

(a) Press  to SAVE PROGRAM.

(b) Select program number 2.

(c) Press  to save program.



```
STEP 5 AT: 10 MINUTES DELAY, STOP,  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 125-1



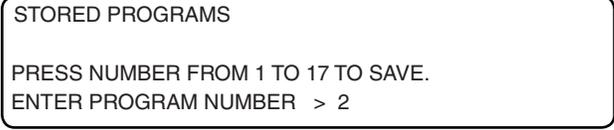
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 125-2



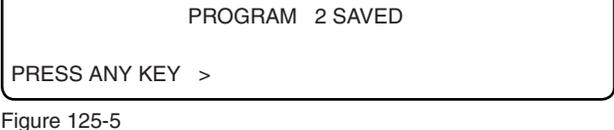
```
0 EXIT 3 CANCEL PROGRAM  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
PRESS NUMBER > 1
```

Figure 125-3



```
STORED PROGRAMS  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 2
```

Figure 125-4



```
PROGRAM 2 SAVED  
PRESS ANY KEY >
```

Figure 125-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.4 Program By Pressure

In this example, the machine will be programmed by pressure to compensate for reduced flow rate/low pressure due to draw-down of the well. The program must be loaded with the pressure reading on the screen greater than 25 psi, otherwise the program would execute immediately as soon as it was run. The program will run only one time. If the pressure returns to 33 psi, the machine will still continue to run at 44 percent. A second program can be created that looks for a pressure higher than 30 psi and sets the machine back to 50 percent.

Several variables are involved when trying to determine an adjustment to machine speed based on the operating pressure. Several of these include field elevations and the use of pressure regulators. Valmont Irrigation is not responsible for a degradation of water uniformity caused by adjusting the speed of the machine based on pressure readings at the pivot. Contact your local Valley dealer for further information regarding this subject.

Current Conditions:

- Machine is operating at 33 psi water pressure.
- After 4-5 hours, the draw-down of the well will increase, causing the pressure to drop approximately 8 psi.

Program Machine By:

- Pressure: When pressure drops below 25 psi, set percent to 44. This may help compensate for the reduced flow rate due to a drop in pressure.

To program example 1.4, follow these steps:

1. Start a new program.

(a) Press .

(b) Press  for STEP PROGRAMS.

(c) Press  for CREATE NEW.

STEP 1 - Example 1.4

2. Program step 1 by pressure. See figures 126-1, 126-2, and 126-3.

(a) Press  for PRESSURE.

(b) Press ,  for 25 psi.

(c) Press  to retain the value.

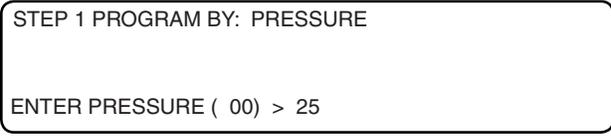
(d) Press  for LOWER.

3. Enter the command to be executed when the water pressure drops below 25 psi. See figure 126-4.

(a) Press .

(b) Press ,  for 44 percent.

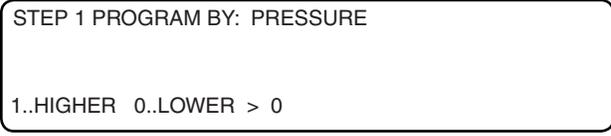
(c) Press  to retain the value.



STEP 1 PROGRAM BY: PRESSURE

ENTER PRESSURE (00) > 25

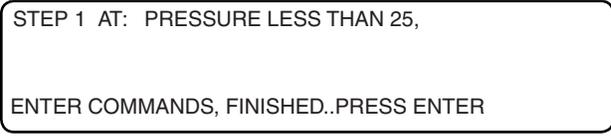
Figure 126-1



STEP 1 PROGRAM BY: PRESSURE

1..HIGHER 0..LOWER > 0

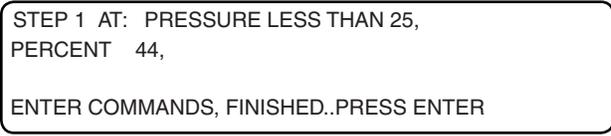
Figure 126-2



STEP 1 AT: PRESSURE LESS THAN 25,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 126-3



STEP 1 AT: PRESSURE LESS THAN 25,
PERCENT 44,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 126-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.4 Program By Pressure (continued)

4. Finish step 1 and display the next step screen.
See figure 127-1.

(a) Press .

5. Finish the program.

(a) Press  for PROGRAM FINISHED.

6. Select one of the following. See figures 127-2, 127-3, and 127-4.

• Press  to SAVE PROGRAM.

(a) Select program number 1-17.

(b) Press  to save program.

• Press  to SAVE PROGRAM AND RUN.

(a) Select program number 1-17.

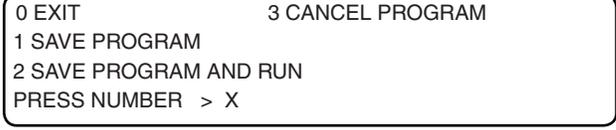
(b) Press  to save program and run.

• Press  to CANCEL PROGRAM.



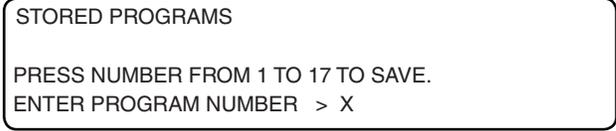
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 127-1



```
0 EXIT                                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

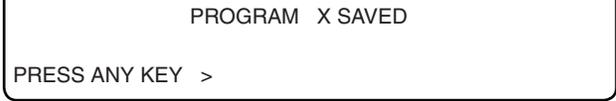
Figure 127-2



```
STORED PROGRAMS

PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > X
```

Figure 127-3



```
PROGRAM X SAVED

PRESS ANY KEY >
```

Figure 127-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program

Module is another name for a relay. The machine is controlled by a series of relays located on a relay board on the back of the control panel. Each relay will either be closed or open as the machine is operating. The machine can be programmed to perform commands based on the condition of any one of these relays. See figure 128-1.

Following is a list of the relays and their associated module/relay number:

0 Safety Out	4 Pump Safety	16 Remote Start/Stop	21 Reverse Sense*
1 Percentage Timer	5 Alarm Out	17 Pressure Switch	22 Forward Sense*
2 End Gun	6 Auxiliary Relay #1 Out	19 Aux. Relay #2 In	23 Safety Sense
3 Wide Boundary	7 Auxiliary Relay #2 Out	20 Aux. Relay #1 In	24 Span Cart Alignment
			25 First Tower Run Time

Module 21 Reverse Sense and Module 22 Forward Sense will be used to demonstrate how to program by module instead of for/rev. This requires more than 9 steps and two programs will be used.

Program One

Current Conditions:	Program Machine To:
<ul style="list-style-type: none"> Machine is running in Pivot Zone B at 90°, Water ON, Percent 50, Forward. 	<ul style="list-style-type: none"> Zone: At Linear Zone B, Water ON, Percent 50.
<ul style="list-style-type: none"> The machine is equipped with end-of-field stop/auto reverse hardware. Barriers are located in Pivot Zone B at 90° and in Pivot Zone A at 270° to trip the arms and change machine direction. 	<ul style="list-style-type: none"> Position: At 500 feet, Percent 80.
	<ul style="list-style-type: none"> Zone: At Pivot Zone A, Percent 80.
	<ul style="list-style-type: none"> Position: At Module 21 ON, Percent 0. Delay: At 600 Seconds, Percent 50, Run Program 2.

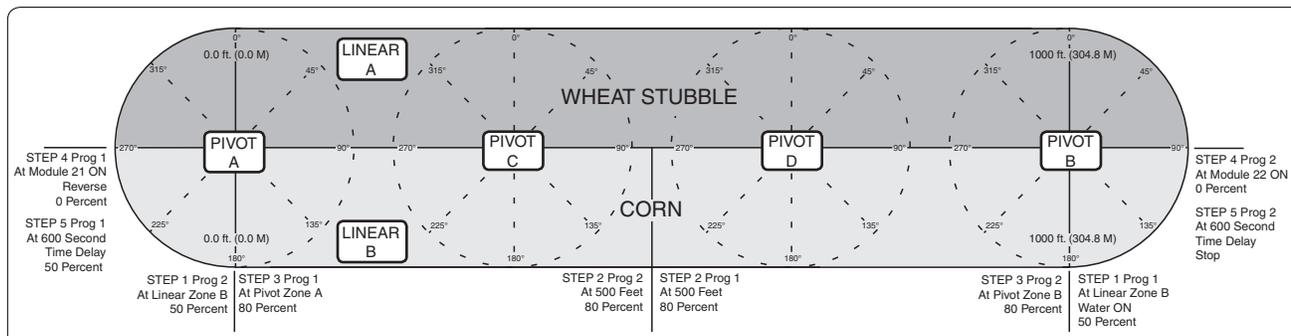


Figure 128-1

To write Program One of example 1.5, follow these steps:

1. Start a new program. See figures 128-2, 128-3, and 128-4.
 - (a) Press .
 - (b) Press  for STEP PROGRAMS.
 - (c) Press  for CREATE NEW.

0 EXIT	3 PROGRAM TRANSITIONS
1 STEP PROGRAMS	4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS	
PRESS NUMBER >	

Figure 128-2

0 EXIT	3 REVIEW CURRENT	6 ERASE
1 RUN STORED	4 REVIEW STORED	
2 CREATE NEW	5 EDIT	
PRESS NUMBER >		

Figure 128-3

STEP 1 PROGRAM BY:			
0 EXIT	2 POSITION	4 DELAY	6 OTHER
1 TIME	3 PRESSURE	5 FOR/REV	
PRESS NUMBER >			

Figure 128-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

STEP 1 - Example 1.5 Program 1

2. Program step 1 by zone. See figures 129-1, 129-2, and 129-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE B.

3. Enter the commands to be executed at the zone. See figure 129-4.

(a) Press .

(b) Press .

(c) Press , for 50 percent.

(d) Press to retain the value.

4. Finish step 1 and display the next step screen. See figure 129-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.5 Program 1

5. Program step 2 by position. See figures 129-6, 129-7, and 129-8.

(a) Press for POSITION.

(b) Press for DISTANCE.

(c) Press , , for 500 feet.

(d) Press to retain the value.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2

Figure 129-1

STEP 1 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 2

Figure 129-2

STEP 1 AT: ZONE LINEAR B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 129-3

STEP 1 AT: ZONE LINEAR B, WATER ON,
PERCENT 50,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 129-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 129-5

STEP 2 PROGRAM BY: POSITION

POSITION 1..DISTANCE 2..DEGREES > 1

Figure 129-6

STEP 2 PROGRAM BY: POSITION

ENTER DISTANCE (900) > 500

Figure 129-7

STEP 2 AT: 500 FEET,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 129-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

6. Enter the commands to be executed at the position. See figure 130-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 130-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.5 Program 1

8. Program step 3 by zone. See figures 130-3, 130-4, and 130-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE A.

9. Enter the commands to be executed at the zone. See figure 130-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 130-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 130-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 130-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 130-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 130-4

```
STEP 3 AT: ZONE PIVOT A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 130-5

```
STEP 3 AT: ZONE PIVOT A, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 130-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 130-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

STEP 4 - Example 1.5 Program 1

11. Program step 4 by module. See figures 131-1, 131-2, and 131-3.

- (a) Press for OTHER.
- (b) Press for MODULE.
- (c) Press , for MODULE 21, REVERSE SENSE.
- (d) Press .
- (e) Press for ON.

12. Enter the commands to be executed at the module. See figure 131-4.

- (a) Press .
- (b) Press for 0 percent.
- (c) Press to retain the value.

13. Finish step 4 and display the next step screen. See figure 131-5.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 5 - Example 1.5 Program 1

14. Program step 5 by delay. See figures 131-6, 131-7, and 131-8.

- (a) Press for DELAY.
- (b) Press for SECONDS.
- (c) Press , , for 600 seconds.
- (d) Press to retain the value.

STEP 4 PROGRAM BY: MODULE

ENTER MODULE NUMBER > 21

Figure 131-1

STEP 4 PROGRAM BY: MODULE

MODULE 21 1..ON 0..OFF (OFF) > 1

Figure 131-2

STEP 4 AT: MODULE 21 ON,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 131-3

STEP 4 AT: MODULE 21 ON, PERCENT 0,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 131-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 131-5

STEP 5 PROGRAM BY: DELAY

DELAY 0..SECONDS 1..MINUTES > 0

Figure 131-6

STEP 5 PROGRAM BY: DELAY

ENTER DELAY IN SECONDS > 600

Figure 131-7

STEP 5 AT: 600 SECONDS DELAY,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 131-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

15. Enter the commands to be executed at the delay.
See figure 132-1.

- (a) Press .
- (b) Press , for 50 percent.
- (c) Press to retain the value.
- (d) Press .

16. Select the program number to run. For this example use program 2.

- (a) Press for program 2.
- (b) Press to retain program.

17. Finish step 5 and display the next step screen.
See figure 132-2.

- (a) Press .

18. Finish program 1.

- (a) Press for PROGRAM FINISHED.

19. Save program 1. See figures 132-3, 132-4, and 132-5.

- (a) Press to SAVE PROGRAM.
- (b) Select program number 1.
- (c) Press to save program.

```
STEP 5 AT: 600 SECONDS DELAY,  
PERCENT 50, RUN PROGRAM 2,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 132-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 132-2

```
0 EXIT  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
3 CANCEL PROGRAM  
PRESS NUMBER > 1
```

Figure 132-3

```
STORED PROGRAMS  
  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 1
```

Figure 132-4

```
PROGRAM 1 SAVED  
  
PRESS ANY KEY >
```

Figure 132-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program

Program Two

Write program two. See figure 133-1.

Current Conditions:

- Machine is running in Pivot Zone A at 90°, Water ON, Percent 50, Reverse.
- The machine is equipped with end-of-field stop/auto reverse hardware. Barriers are located in Pivot Zone B at 90° and in Pivot Zone A at 270° to trip the arms and change machine direction.

Program Machine To:

- Zone: At Linear Zone B, Percent 50.
- Position: At 500 feet, Percent 80.
- Zone: At Pivot Zone B, Percent 80.
- Position: At Module 22 ON, Percent 50.
- Delay: At 600 seconds, Stop.

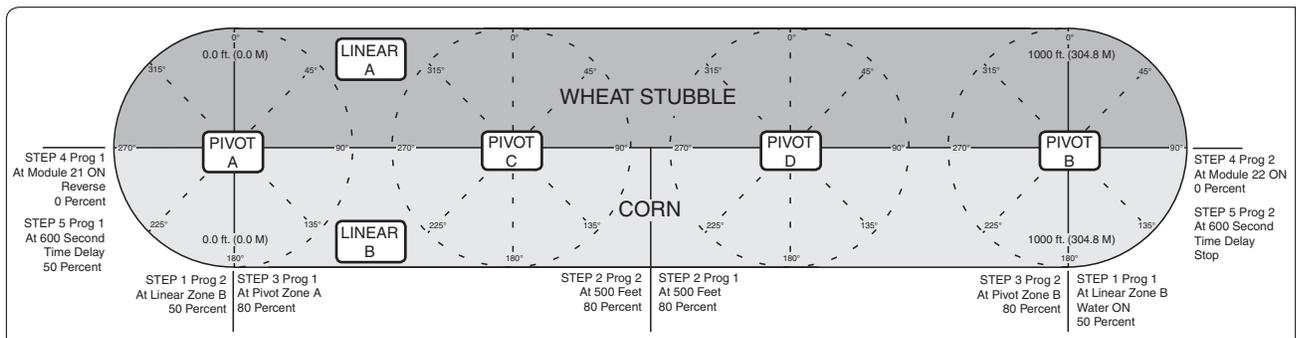


Figure 133-1

To write Program Two of example 1.5, follow these steps:

1. Start a new program. See figures 133-2, 133-3, and 133-4.

(a) Press .

(b) Press  for STEP PROGRAMS.

(c) Press  for CREATE NEW.

```

0 EXIT          3 PROGRAM TRANSITIONS
1 STEP PROGRAMS  4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER >
    
```

Figure 133-2

```

0 EXIT          3 REVIEW CURRENT    6 ERASE
1 RUN STORED   4 REVIEW STORED
2 CREATE NEW   5 EDIT
PRESS NUMBER >
    
```

Figure 133-3

```

STEP 1 PROGRAM BY:
0 EXIT          2 POSITION          4 DELAY          6 OTHER
1 TIME          3 PRESSURE        5 FOR/REV
PRESS NUMBER >
    
```

Figure 133-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

STEP 1 - Example 1.5 Program 2

2. Program step 1 by zone. See figures 134-1, 134-2, and 134-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE B.

3. Enter the commands to be executed at the zone. See figure 134-4.

(a) Press .

(b) Press , for 50 percent.

(c) Press to retain the value.

4. Finish step 1 and display the next step screen. See figure 134-5.

(a) Press .

(b) Press for NEXT STEP.

STEP 2 - Example 1.5 Program 2

5. Program step 2 by position. See figures 134-6, 134-7, and 134-8.

(a) Press for POSITION.

(b) Press for DISTANCE.

(c) Press , , for 500 feet.

(d) Press to retain the value.

```
STEP 1 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 134-1

```
STEP 1 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 2
```

Figure 134-2

```
STEP 1 AT: ZONE LINEAR B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 134-3

```
STEP 1 AT: ZONE LINEAR B, PERCENT 50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 134-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 134-5

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 134-6

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DISTANCE (900) > 500
```

Figure 134-7

```
STEP 2 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 134-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

6. Enter the commands to be executed at the position. See figure 135-1.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

7. Finish step 2 and display the next step screen. See figure 135-2.

(a) Press .

(b) Press for NEXT STEP.

STEP 3 - Example 1.5 Program 2

8. Program step 3 by zone. See figures 135-3, 135-4, and 135-5.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for PIVOT.

(d) Press for ZONE B.

9. Enter the commands to be executed at the zone. See figure 135-6.

(a) Press .

(b) Press , for 80 percent.

(c) Press to retain the value.

10. Finish step 3 and display the next step screen. See figure 135-7.

(a) Press .

(b) Press for NEXT STEP.

```
STEP 2 AT: 500 FEET, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 135-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 135-2

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 135-3

```
STEP 3 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 135-4

```
STEP 3 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 135-5

```
STEP 3 AT: ZONE PIVOT B, PERCENT 80,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 135-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 135-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

STEP 4 - Example 1.5 Program 2

11. Program step 4 by module. See figures 136-1, 136-2, and 136-3.

- (a) Press for OTHER.
- (b) Press for MODULE.
- (c) Press , for MODULE 22, FORWARD SENSE.
- (d) Press .
- (e) Press for ON.

12. Enter the commands to be executed at the module. See figure 136-4.

- (a) Press .
- (b) Press , for 50 percent.
- (c) Press to retain the value.

13. Finish step 4 and display the next step screen. See figure 136-5.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 5 - Example 1.5 Program 2

14. Program step 5 by delay. See figures 136-6, 136-7, and 136-8.

- (a) Press for DELAY.
- (b) Press for SECONDS.
- (c) Press , , for 600 seconds.
- (d) Press to retain the value.

STEP 4 PROGRAM BY: MODULE

ENTER MODULE NUMBER > 22

Figure 136-1

STEP 4 PROGRAM BY: MODULE

MODULE 22 1..ON 0..OFF (OFF) > 1

Figure 136-2

STEP 4 AT: MODULE 22 ON,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 136-3

STEP 4 AT: MODULE 22 ON, PERCENT 50,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 136-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 136-5

STEP 5 PROGRAM BY: DELAY

DELAY 0..SECONDS 1..MINUTES > 0

Figure 136-6

STEP 5 PROGRAM BY: DELAY

ENTER DELAY IN MINUTES > 600

Figure 136-7

STEP 5 AT: 600 SECONDS DELAY,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 136-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.5 Program By Module Using Run Program (continued)

15. Enter the commands to be executed at the delay.
See figure 137-1.

(a) Press .

16. Finish step 5 and display the next step screen.
See figure 137-2.

(a) Press .

17. Finish program 2.

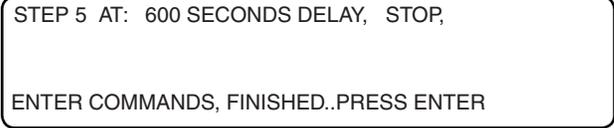
(a) Press  for PROGRAM FINISHED.

18. Save program 2. See figures 137-3, 137-4, and 137-5.

(a) Press  to SAVE PROGRAM.

(b) Select program number 2.

(c) Press  to save program.



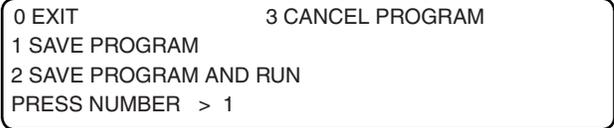
```
STEP 5 AT: 600 SECONDS DELAY, STOP,  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 137-1



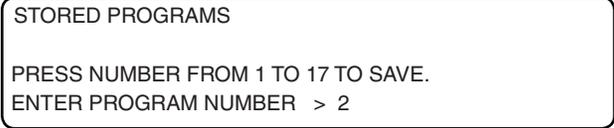
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 137-2



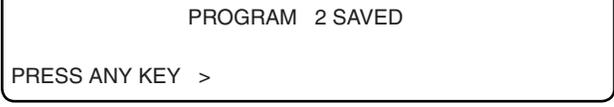
```
0 EXIT                3 CANCEL PROGRAM  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
PRESS NUMBER > 1
```

Figure 137-3



```
STORED PROGRAMS  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 2
```

Figure 137-4



```
PROGRAM 2 SAVED  
PRESS ANY KEY >
```

Figure 137-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.6 Using Run Program Command

A stored program can be called upon to run from within other programs. For example, program #2 could be run in the last step of program #1, program #3 could be run from the last step of program #2, etc. See figure 138-1.

Current Conditions:

- Machine running in Linear Zone A at 0 feet, Water ON, Depth 1.00", Forward.
- Stop-in-slot is ON and set at 0 feet in Linear Zone A.

Program Machine To:

Program 1

- Position: At 750 feet, Water OFF, 100 percent.
- Zone: At Pivot Zone B, Water OFF, 100 percent, Run Program 2.

Program 2 was already written and stored:

- Position: At 45°, Water ON, Depth 0.75".
- Zone: At Linear Zone B, Water ON, Depth 0.75".
- Zone: At Pivot Zone A, Water ON, Depth 0.75".

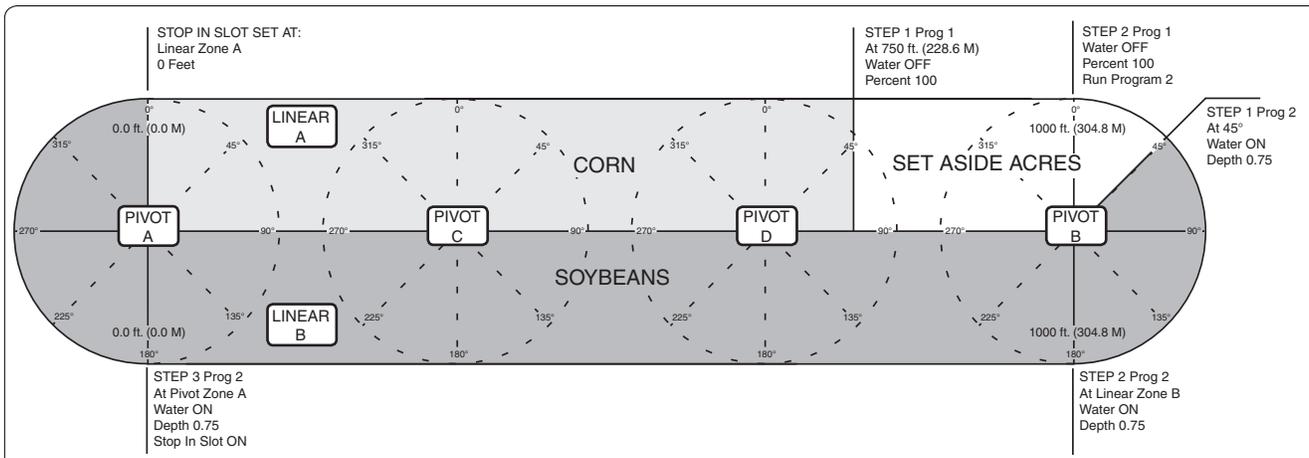


Figure 138-1

To program example 1.6, follow these steps:

1. Start a new program.
 - Press .
 - Press **1** for STEP PROGRAMS.
 - Press **2** for CREATE NEW.

STEP 1 - Example 1.6

2. Program step 1 by position. See figures 138-2, 138-3, and 138-4.
 - Press **2** for POSITION.
 - Press **1** for DISTANCE.
 - Press **7**, **5**, **0** for 750 feet.
 - Press  to retain the value.

```
STEP 1 PROGRAM BY: POSITION
POSITION 1..DISTANCE 2..DEGREES >
```

Figure 138-2

```
STEP 1 PROGRAM BY: POSITION
ENTER DISTANCE (900) > 750
```

Figure 138-3

```
STEP 1 AT: 750 FEET,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 138-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.6 Using Run Program Command (continued)

3. Enter the command to be executed at the position. Each command appears on the screen when entered. See figure 139-1.

(a) Press .

(b) Press .

(c) Press , ,  for 100 percent.

(d) Press  to retain the value.

4. Finish step 1 and display the next step screen. See figure 139-2.

(a) Press .

(b) Press  for NEXT STEP.

STEP 2 - Example 1.6

5. Program step 3 by zone. See figures 139-3, 139-4, and 139-5.

(a) Press  for OTHER.

(b) Press  for ZONE.

(c) Press  for PIVOT.

(d) Press  for ZONE B.

6. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 139-6.

(a) Press .

(b) Press .

(c) Press , ,  for 100 percent.

(d) Press  to retain the value.

(e) Press .

(f) Press  for program 2.

(g) Press  to retain program 2.

```
STEP 1 AT: 750 FEET, WATER OFF,  
PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 139-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 139-2

```
STEP 2 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 139-3

```
STEP 2 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 139-4

```
STEP 2 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 139-5

```
STEP 2 AT: ZONE PIVOT B, WATER OFF,  
PERCENT 100, RUN PROGRAM 2,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 139-6

Valley AutoPilot Control Panel

Program Examples

Step Program Examples

1.6 Using Run Program Command (continued)

7. Finish step 2 and display the next step screen.
See figure 140-1.

(a) Press .

8. Finish the program. See figure 140-2.

(a) Press  for PROGRAM FINISHED.

9. Select one of the following. See figures 140-3 and 140-4.

• Press  to SAVE PROGRAM.

(a) Select program number 1.

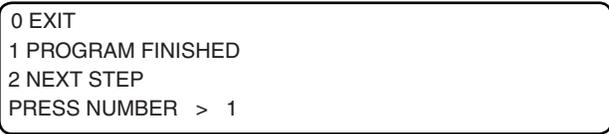
(b) Press  to save program.

• Press  to SAVE PROGRAM AND RUN.

(a) Select program number 1.

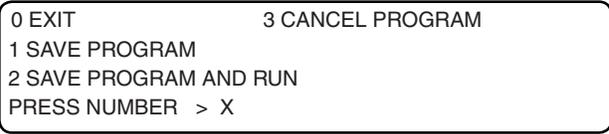
(b) Press  to save program and run.

• Press  to CANCEL PROGRAM.



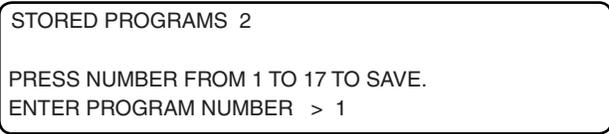
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 140-1



```
0 EXIT                                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

Figure 140-2



```
STORED PROGRAMS 2

PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 1
```

Figure 140-3



```
PROGRAM 1 SAVED

PRESS ANY KEY >
```

Figure 140-4

Program Execution

The programs will be executed as outlined below:

Program 1

1. Step 1 At 750 feet in Linear Zone A the machine will change the percentage timer setting to 100 percent and the water will be shut off.
2. Step 2 At Pivot Zone B the percentage timer setting to 100 percent and the water will be shut off. Program 2 will be loaded and ran.

Program 2 (stored program)

3. Step 1 at 45° in Pivot Zone B the water will be turned back on and applied at a depth of 0.75" on the soybeans.
4. Step 2 at Linear Zone B the water will be turned back on and applied at a depth of 0.75".
5. Step 3 at Pivot Zone A set Water ON, set depth to 0.75" and turn the stop-in-slot ON.
6. The machine will continue running forward at 100 percent and shut off at 0 feet in Linear Zone A which is the stop-in-slot location.

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.7 Continuous Auto Reverse Cycles

In this example, a machine is programmed to continuously auto reverse between positions. See figure 141-1.

CAUTION

THIS PROGRAM SHOULD ONLY BE USED FOR AUTO REVERSING IN OPEN FIELD CONDITIONS WITH NO OBSTACLES PRESENT. IF THE MACHINE NEEDS TO REVERSE AROUND AN OBSTACLE SUCH AS A TREE LINE, BUILDING, OR FENCE, A DRIVE UNIT MOUNTED END-OF-FIELD STOP/AUTO REVERSE MUST BE INSTALLED WITH PHYSICAL BARRICADES AS A SAFETY BACKUP.

Current Conditions:

- Operator manually starts machine in Pivot Zone B, Water ON, Depth 1.00", Forward.

Program Machine To:

- Zone: At Linear Zone B, Water ON, Depth 1.00".
- Position: At 270° in Pivot Zone A, Reverse.
- Position: At 90° in Pivot Zone B, Forward, run program 1 so the machine will reverse again at 270°.

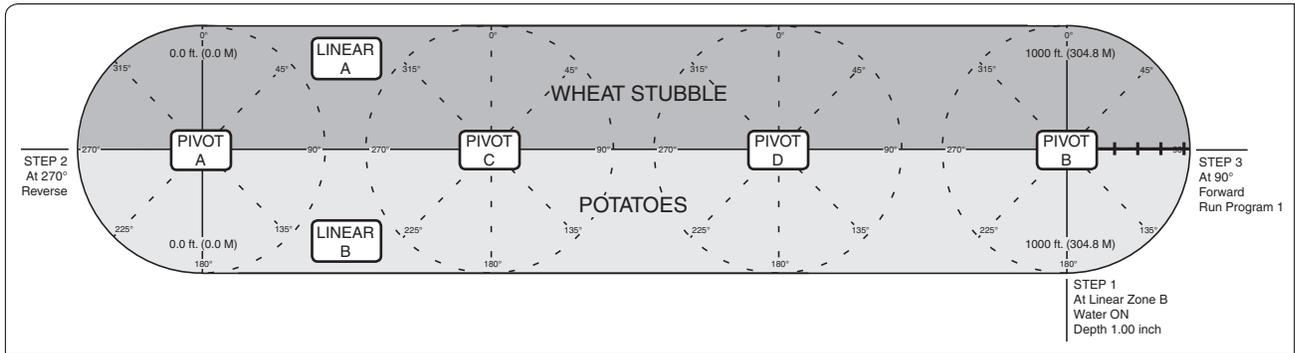


Figure 141-1

To program example 1.7, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press **1** for STEP PROGRAMS.
- (c) Press **2** for CREATE NEW.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2

Figure 141-2

STEP 1 - Example 1.7

2. Program step 1 by zone. See figures 141-2, 141-3, and 141-4.

- (a) Press **6** for OTHER.
- (b) Press **5** for ZONE.
- (c) Press **2** for LINEAR.
- (d) Press **2** for ZONE B.

STEP 1 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 2

Figure 141-3

STEP 1 AT: ZONE LINEAR B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 141-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.7 Continuous Auto Reverse Cycles (continued)

3. Enter the commands to be executed at the zone. Each command appears on the screen when entered. See figure 142-1.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.

4. Finish step 1 and display the next step screen. See figure 142-2.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 2 - Example 8.0

5. Program step 2 by position. See figures 142-3, 142-4, and 142-5.

- (a) Press for POSITION.
- (b) Press for DEGREES.
- (c) Press , , for 270 degrees.
- (d) Press  to retain the value.

6. Enter the command to be executed at the position. See figure 142-6.

- (a) Press .

7. Finish step 2 and display the next step screen. See figure 142-7.

- (a) Press .
- (b) Press for NEXT STEP.

```
STEP 1 AT: ZONE LINEAR B, WATER ON,  
DEPTH 1.00,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 142-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 142-2

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES >
```

Figure 142-3

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 90.0) > 270
```

Figure 142-4

```
STEP 2 AT: 270.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 142-5

```
STEP 2 AT: 270.0 DEGREES, REVERSE,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 142-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 142-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.7 Continuous Auto Reverse Cycles (continued)

STEP 3 - Example 1.7

8. Program step 3 by position. See figures 143-1, 143-2, and 143-3.

(a) Press for POSITION.

(b) Press for DEGREES.

(c) Press , for 90 degrees.

(d) Press to retain the value.

9. Enter the commands to be executed at the position. See figure 143-4.

(a) Press

(b) Press

10. Select the stored program number to run. For this example use stored program 1.

(a) Press for stored program 1.

(b) Press to retain program.

11. Finish step 3 and display the next step screen. See figure 143-5.

(a) Press .

12. Finish the program. See figure 143-5.

(a) Press for PROGRAM FINISHED.

13. Select one of the following. See figures 143-6, 143-7, and 143-8.

• Press to SAVE PROGRAM.

(a) Select program number 1.

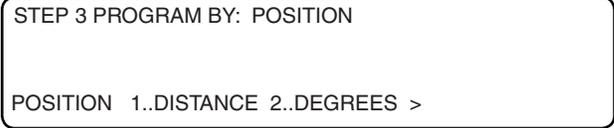
(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 1.

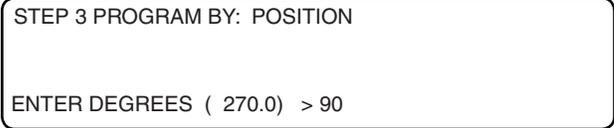
(b) Press to save program and run.

• Press to CANCEL PROGRAM.



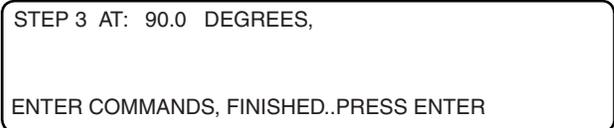
```
STEP 3 PROGRAM BY: POSITION
POSITION 1..DISTANCE 2..DEGREES >
```

Figure 143-1



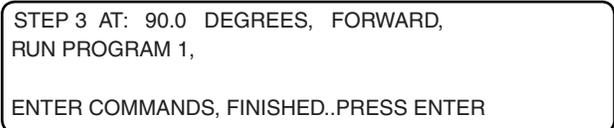
```
STEP 3 PROGRAM BY: POSITION
ENTER DEGREES ( 270.0 ) > 90
```

Figure 143-2



```
STEP 3 AT: 90.0 DEGREES,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 143-3



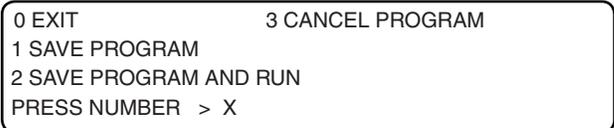
```
STEP 3 AT: 90.0 DEGREES, FORWARD,
RUN PROGRAM 1,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 143-4



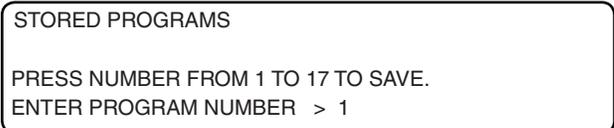
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 143-5



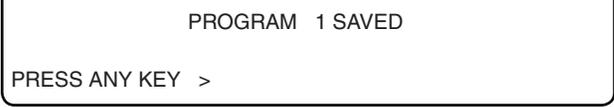
```
0 EXIT
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
3 CANCEL PROGRAM
PRESS NUMBER > X
```

Figure 143-6



```
STORED PROGRAMS
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 1
```

Figure 143-7



```
PROGRAM 1 SAVED
PRESS ANY KEY >
```

Figure 143-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.7 Continuous Auto Reverse Cycles (continued)

Running The Program

To run the program use Run Stored or Save And Run Program. Either of these methods will make the program current.

When the machine is started, the program will run and the machine will continue to operate until the program is deleted from current programs, Stop-In Slot or another program stops the machine, or STOP is pressed.

The only purpose of this program is to change machine direction at 90° and 270°.

This program can run simultaneously with other programs that may start or stop the machine or change water application depth.

- Program steps are executed in numeric order. If the direction of the machine is manually changed from forward to reverse before step 1 is executed, the machine would travel past 90° Pivot Zone B in the reverse direction to Linear Zone B, before step 1 would be executed, which is not desired.

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.8 Continuous Wet Area Water OFF Cycles

This example illustrates how to turn the water off and change percentage setting and then turn the water back on and change percentage setting again. This program allows the machine to travel without water at 100 percent over a wet area. Reloading this program in the last step will cause this program to be repeated continuously. See figure 145-1.

Current Conditions:

- Operator manually starts machine in Linear Zone A, Water ON, 50 Percent, Forward.

Program Machine By:

- Zone: At Pivot Zone B, Water ON, Percent to 50.
- Position: At 45° in Pivot Zone B, Water OFF, Percent at 100.
- Position: At 90° in Pivot Zone B, Water ON, Percent at 50, reload this program.

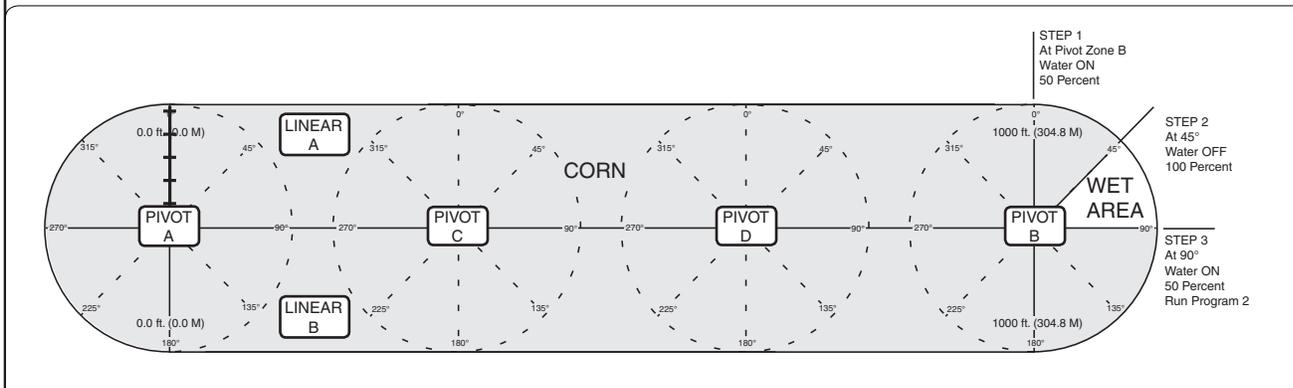


Figure 145-1

To program example 1.8, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press **1** for STEP PROGRAMS.
- (c) Press **2** for CREATE NEW.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 1

Figure 145-2

STEP 1 - Example 1.8

2. Program step 1 by zone. See figures 145-2, 145-3, and 145-4.

- (a) Press **6** for OTHER.
- (b) Press **5** for ZONE.
- (c) Press **1** for PIVOT.
- (d) Press **2** for ZONE B.

STEP 1 PROGRAM BY: ZONE PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 2

Figure 145-3

STEP 1 AT: ZONE PIVOT B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 145-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.8 Continuous Wet Area Water OFF Cycles (continued)

3. Enter the commands to be executed at the zone.
See figure 146-1.

(a) Press .

(b) Press .

(c) Press ,  for 50 percent.

(d) Press  to retain the value.

4. Finish step 1 without adding any commands and display the next step screen. See figure 146-2.

(a) Press .

(b) Press  for NEXT STEP.

STEP 2 - Example 1.8

5. Program step 2 by position. See figures 146-3, 146-4, and 146-5.

(a) Press  for POSITION.

(b) Press  for DEGREES.

(c) Press ,  for 45 degrees.

(d) Press  to retain the value.

6. Enter the commands to be executed at the position. See figure 146-6.

(a) Press .

(b) Press .

(c) Press , ,  for 100 percent.

(d) Press  to retain the value.

7. Finish step 2 and display the next step screen. See figure 146-7.

(a) Press .

(b) Press  for NEXT STEP.

```
STEP 1 AT: ZONE PIVOT B, WATER ON,  
PERCENT 50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 146-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 146-2

```
STEP 2 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES >
```

Figure 146-3

```
STEP 2 PROGRAM BY: POSITION  
  
ENTER DEGREES ( 180.0) > 45
```

Figure 146-4

```
STEP 2 AT: 45.0 DEGREES,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 146-5

```
STEP 2 AT: 45.0 DEGREES, WATER OFF,  
PERCENT 100,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 146-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 146-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.8 Continuous Wet Area Water OFF Cycles (continued)

STEP 3 - Example 1.8

8. Program step 3 by position. See figures 147-1, 147-2, and 147-3.

(a) Press for POSITION.

(b) Press for DEGREES.

(c) Press , for 90 degrees.

(d) Press to retain the value.

9. Enter the commands to be executed at the position. See figure 147-4.

(a) Press .

(b) Press .

(c) Press , for 50 percent.

(d) Press to retain the value.

(e) Press .

10. Select the stored program number to run. For this example use stored program 2.

(a) Press for stored program 2.

(b) Press to retain program.

11. Finish step 3 and display the next step screen. See figure 147-5.

(a) Press .

12. Finish the program. See figure 147-5.

(a) Press for PROGRAM FINISHED.

13. Select one of the following. See figures 147-6, 147-7, and 147-8.

• Press to SAVE PROGRAM.

(a) Select program number 2.

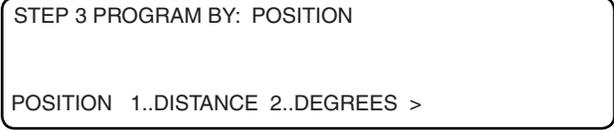
(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 2.

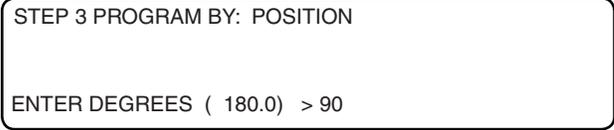
(b) Press to save program and run.

• Press to CANCEL PROGRAM.



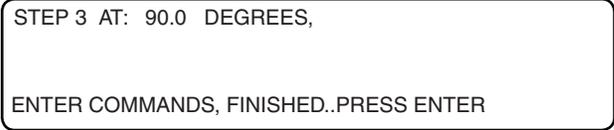
```
STEP 3 PROGRAM BY: POSITION
POSITION 1..DISTANCE 2..DEGREES >
```

Figure 147-1



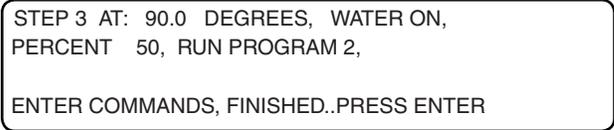
```
STEP 3 PROGRAM BY: POSITION
ENTER DEGREES ( 180.0 ) > 90
```

Figure 147-2



```
STEP 3 AT: 90.0 DEGREES,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 147-3



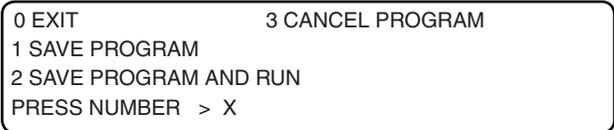
```
STEP 3 AT: 90.0 DEGREES, WATER ON,
PERCENT 50, RUN PROGRAM 2,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 147-4



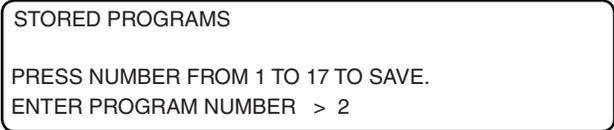
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 147-5



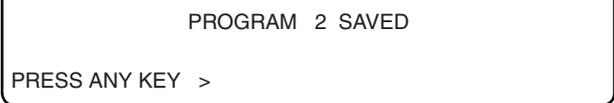
```
0 EXIT
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
3 CANCEL PROGRAM
PRESS NUMBER > X
```

Figure 147-6



```
STORED PROGRAMS
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 2
```

Figure 147-7



```
PROGRAM 2 SAVED
PRESS ANY KEY >
```

Figure 147-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command

In this example, the machine needs to complete two identical irrigation cycles and stop at 0 feet in Linear Zone A. To accomplish this, two programs will be written. See figure 148-1.

The first program will start the machine at 3:00 A.M. on 08/08/07, turning Water ON, setting Linear Zone depth to 1.00" and direction to forward, at 500 feet in Linear Zone B change Linear Zone depth to 0.50", at Pivot Zone A change Pivot Zone depth to 0.50", and load a second program to complete the first cycle.

Expected Conditions - First Program:

- Machine OFF at 0 feet in Linear Zone A.

Program Machine By:

- Time: On 08/08/07 at 3:00:00 A.M., Water ON, Depth 1.00", Forward, Start machine.
- Zone: At Pivot Zone B, Water ON, Depth 1.00".
- Position: At 500 feet, Depth 0.50".
- Zone: At Pivot Zone A, Depth 0.50", Run Program 2.

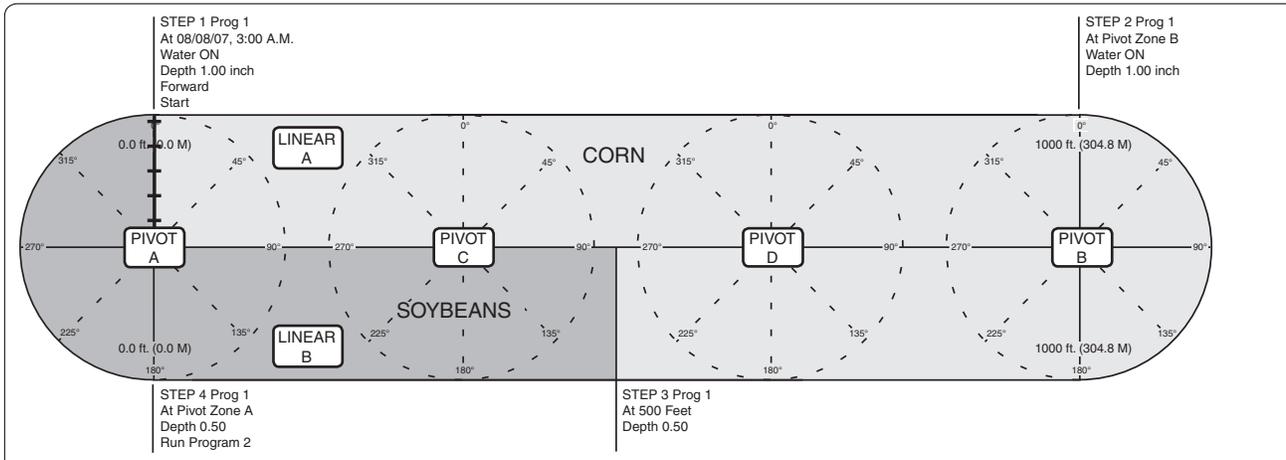


Figure 148-1

Program One

To write the first program in program example 1.9, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press **1** for STEP PROGRAMS.
- (c) Press **2** for CREATE NEW.

STEP 1 - Example 1.9 program 1

2. Program step 1 by Time.

- (a) Press **1** for TIME.

3. Enter the date **0**, **8**, **0**, **8**, **0**, **7** for August 8, 2007 and press . See figure 148-2.

4. Enter the time **0**, **3**, **0**, **0**, **0**, **0** for 3:00 A.M. and press . See figures 148-3 and 148-4.

STEP 1 PROGRAM BY: TIME

ENTER DATE (07/27/07) > 08/08/07

Figure 148-2

STEP 1 PROGRAM BY: TIME

ENTER TIME (08:04) > 03:00:00

Figure 148-3

STEP 1 AT: 08/08/07 03:00:00,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 148-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

5. Enter the commands to be executed at the time.
See figure 149-1.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.
- (e) Press .
- (f) Press .

```
STEP 1 AT: 08/08/07 03:00:00, WATER ON,  
DEPTH 1.00, FORWARD, START,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 149-1

6. Finish step 1 and display the next step screen.
See figure 149-2.

- (a) Press .
- (b) Press for NEXT STEP.

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 149-2

STEP 2 - Example 1.9 program 1

7. Program step 2 by zone. See figures 149-3, 149-4, and 149-5.

- (a) Press for OTHER.
- (b) Press for ZONE.
- (c) Press for PIVOT.
- (d) Press for ZONE B.

```
STEP 2 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 149-3

8. Enter the commands to be executed at the zone.
See figure 149-6.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.

```
STEP 2 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 149-4

9. Finish step 2 without adding any commands and display the next step screen. See figure 149-7.

- (a) Press .
- (b) Press for NEXT STEP.

```
STEP 2 AT: ZONE PIVOT B,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 149-5

```
STEP 2 AT: ZONE PIVOT B, WATER ON,  
DEPTH 1.00,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 149-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 149-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

STEP 3 - Example 1.9 program 1

10. Program step 3 by position. See figures 150-1, 150-2, and 150-3.

- (a) Press for POSITION.
- (b) Press for DISTANCE.
- (c) Press , , for 500 feet.
- (d) Press to retain the value.

11. Enter the commands to be executed at the position. See figure 150-4.

- (a) Press
- (b) Press , , for 0.50 inch.
- (c) Press to retain the value.

12. Finish step 3 and display the next step screen. See figure 150-5.

- (a) Press .
- (b) Press for NEXT STEP.

STEP 4 - Example 1.9 program 1

13. Program step 4 by zone. See figures 150-6, 150-7, and 150-8.

- (a) Press for OTHER.
- (b) Press for ZONE.
- (c) Press for LINEAR.
- (d) Press for ZONE A.

```
STEP 3 PROGRAM BY: POSITION  
  
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 150-1

```
STEP 3 PROGRAM BY: POSITION  
  
ENTER DISTANCE (900) > 500
```

Figure 150-2

```
STEP 3 AT: 500 FEET,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 150-3

```
STEP 3 AT: 500 FEET, DEPTH 0.50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 150-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 150-5

```
STEP 4 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 150-6

```
STEP 4 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 1
```

Figure 150-7

```
STEP 4 AT: ZONE LINEAR A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 150-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

14. Enter the commands to be executed at the zone.
See figure 151-1.

(a) Press .

(b) Press for 1.00 inch.

(c) Press  to retain the value.

(d) Press .

15. Select the program number to run. For this example use program 2.

(a) Press for program 2.

(b) Press  to retain program.

16. Finish step 4 and display the next step screen.
See figure 151-2.

(a) Press .

17. Finish the program. See figure 151-2.

(a) Press for PROGRAM FINISHED.

18. Select one of the following. See figures 151-3, 151-4, and 151-5.

• Press to SAVE PROGRAM.

(a) Select program number 1.

(b) Press  to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 1.

(b) Press  to save program and run.

• Press to CANCEL PROGRAM.

```
STEP 4 AT: ZONE LINEAR A, DEPTH 1.00,  
RUN PROGRAM 2,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 151-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 151-2

```
0 EXIT                                3 CANCEL PROGRAM  
1 SAVE PROGRAM  
2 SAVE PROGRAM AND RUN  
PRESS NUMBER > X
```

Figure 151-3

```
STORED PROGRAMS  
  
PRESS NUMBER FROM 1 TO 17 TO SAVE.  
ENTER PROGRAM NUMBER > 1
```

Figure 151-4

```
PROGRAM 1 SAVED  
  
PRESS ANY KEY >
```

Figure 151-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

Create program 2 with two steps. Step 1 will change the water application to 0.50" at 180° and step 2 will stop the machine at 0°. See figure 152-1.

Expected Conditions - Second Program:

- Machine running at 0 feet.

Program Machine By:

- Position: At Linear Zone A, Water ON, Depth 1.00".
- Zone: At Pivot Zone B, Water ON; Depth 1.00".
- Position: At 500 feet, Depth 0.50".
- Zone: At Pivot Zone A, Depth 0.50".
- Zone: At Linear Zone A, Stop.

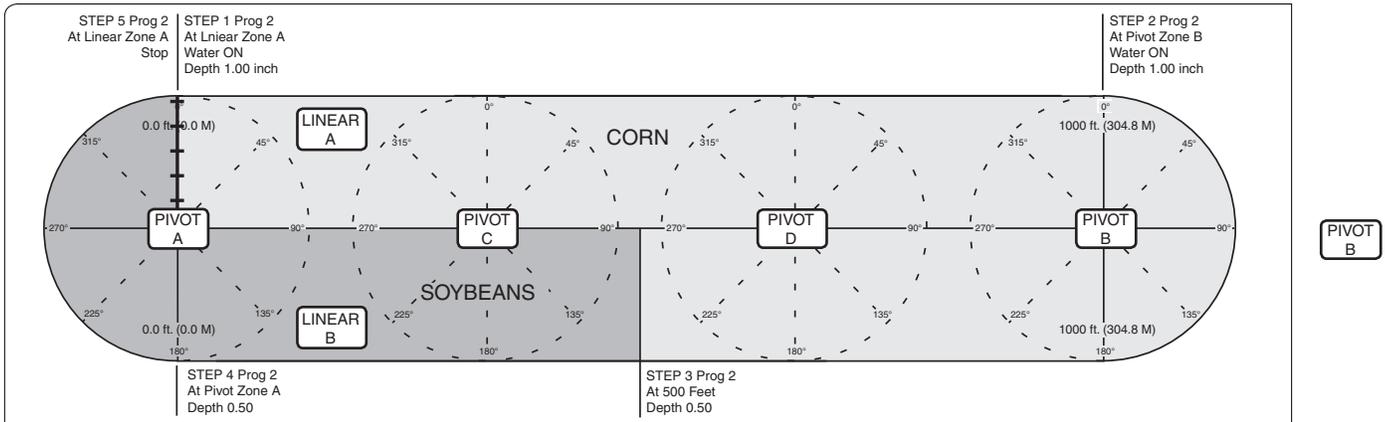


Figure 152-1

Program Two

To write the second program of example 1.9, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press  for STEP PROGRAMS.
- (c) Press  for CREATE NEW.

```
STEP 1 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 152-2

STEP 1 - Example 1.9 Program 2

2. Program step 1 by zone. See figures 152-2, 152-3, and 152-4.

- (a) Press  for NEXT STEP.
- (b) Press  for OTHER.
- (c) Press  for ZONE.
- (d) Press  for LINEAR.
- (e) Press  for ZONE A.

```
STEP 1 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 1
```

Figure 152-3

```
STEP 1 AT: ZONE LINEAR A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 152-4

3. Enter the commands to be executed at the zone. See figure 152-5.

- (a) Press .
- (b) Press .
- (c) Press  for 1.00 inch.
- (d) Press  to retain the value.

```
STEP 1 AT: ZONE LINEAR A, WATER ON,
DEPTH 1.00,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 152-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

4. Finish step 1 and display the next step screen.
See figure 153-1.

(a) Press .

(b) Press  for NEXT STEP.

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 153-1

STEP 2 - Example 1.9 Program 2

5. Program step 2 by zone. See figures 153-2, 153-3, and 153-4.

(a) Press  for OTHER.

(b) Press  for ZONE.

(c) Press  for PIVOT.

(d) Press  for ZONE B.

```
STEP 2 PROGRAM BY: ZONE
```

```
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 153-2

```
STEP 2 PROGRAM BY: ZONE PIVOT
```

```
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 153-3

```
STEP 2 AT: ZONE PIVOT B,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 153-4

```
STEP 2 AT: ZONE PIVOT B,
DEPTH 1.00,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 153-5

6. Enter the commands to be executed at the zone.
See figure 153-5.

(a) Press .

(b) Press  for 1.00 inch.

(c) Press  to retain the value.

7. Finish step 2 and display the next step screen.
See figure 153-6.

(a) Press .

(b) Press  for NEXT STEP.

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 153-6

STEP 3 - Example 1.9 Program 2

8. Program step 3 by position. See figures 153-7, 153-8, and 153-9.

(a) Press  for POSITION.

(b) Press  for DISTANCE.

(c) Press , ,  for 500 feet.

(d) Press  to retain the value.

```
STEP 3 PROGRAM BY: POSITION
```

```
POSITION 1..DISTANCE 2..DEGREES > 1
```

Figure 153-7

```
STEP 3 PROGRAM BY: POSITION
```

```
ENTER DISTANCE (900) > 500
```

Figure 153-8

```
STEP 3 AT: 500 FEET,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 153-9

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

9. 9. Enter the commands to be executed at the position. See figure 154-1.

(a) Press .

(b) Press , , for 0.50 inch.

(c) Press  to retain the value.

10. Finish step 3 and display the next step screen. See figure 154-2.

(a) Press .

(b) Press  for NEXT STEP.

STEP 4 - Example 1.9 Program 2

11. Program step 4 by zone. See figures 154-3, 154-4, and 154-5.

(a) Press  for OTHER.

(b) Press  for ZONE.

(c) Press  for PIVOT.

(d) Press  for ZONE A.

12. Enter the commands to be executed at the zone. See figure 154-6.

(a) Press .

(b) Press , , for 0.50 inch.

(c) Press  to retain the value.

13. Finish step 4 and display the next step screen. See figure 154-7.

(a) Press .

(b) Press  for NEXT STEP.

```
STEP 3 AT: 500 FEET, DEPTH 0.50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 154-1

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 154-2

```
STEP 4 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 154-3

```
STEP 4 PROGRAM BY: ZONE PIVOT  
  
ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 154-4

```
STEP 4 AT: ZONE PIVOT A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 154-5

```
STEP 4 AT: ZONE PIVOT A, DEPTH 0.50,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 154-6

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 154-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Repeating Irrigation Cycles

1.9 Using Run Program Command (continued)

STEP 5 - Example 1.9 Program 2

14. Program step 5 by zone. See figures 155-1, 155-2, and 155-3.

(a) Press for NEXT STEP.

(b) Press for OTHER.

(c) Press for ZONE.

(d) Press for LINEAR.

(e) Press for ZONE A.

15. Enter the commands to be executed at the zone. See figure 155-4.

(a) Press .

16. Finish step 5 and display the next step screen. See figure 155-5.

(a) Press .

17. Finish the program.

(a) Press for PROGRAM FINISHED.

18. Select one of the following. See figures 155-6, 155-7, and 155-8.

• Press to SAVE PROGRAM.

(a) Select program number 2.

(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 2.

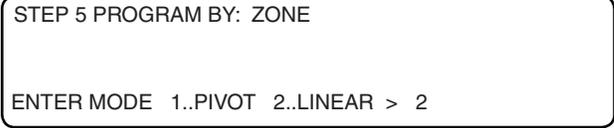
(b) Press to save program and run.

• Press to CANCEL PROGRAM.

Program Operation

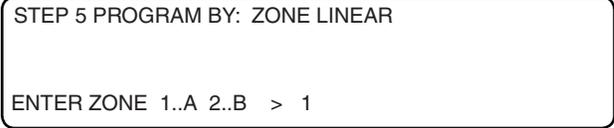
The programming for example 1.9 is complete.

The machine will start on 08/08/07 at 3:00 A.M., change water application to 1.00" at Pivot Zone B, 0.50" at 500 feet in Linear Zone B, 1.00" at Pivot Zone A and then load program Program 2 will change the water application to 1.00" at 0 feet in Linear Zone A, 1.00" at Pivot Zone B, 0.50" at 500 feet in Linear Zone B, 1.00" at Pivot Zone A, and stop the machine at 0 feet in Linear Zone A.



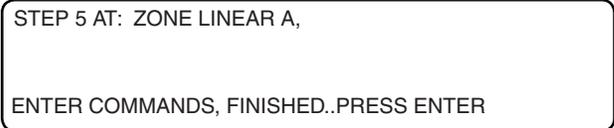
```
STEP 5 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 155-1



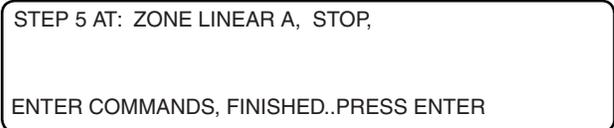
```
STEP 5 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 1
```

Figure 155-2



```
STEP 5 AT: ZONE LINEAR A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 155-3



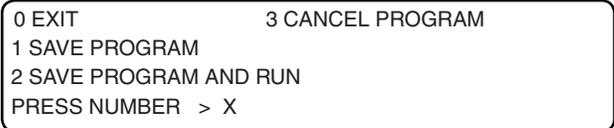
```
STEP 5 AT: ZONE LINEAR A, STOP,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 155-4



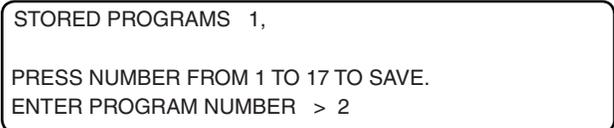
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 155-5



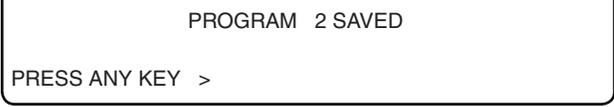
```
0 EXIT
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
3 CANCEL PROGRAM
PRESS NUMBER > X
```

Figure 155-6



```
STORED PROGRAMS 1,
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 2
```

Figure 155-7



```
PROGRAM 2 SAVED
PRESS ANY KEY >
```

Figure 155-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command

This example illustrates one way to write a series of step programs, one program per irrigation cycle with time delays between each program, execute the series of programs by running the first program, then the second and third programs will run automatically as they are called upon. Stop the machine after 3 complete irrigation cycles with a 2 day delay in between each cycle. See figure 156-1.

Program One

Current Conditions:

- Machine off at 0 feet in Linear Zone A.

Program Machine To:

- Time: On 08/08/07, at 3:00 A.M., Water ON, Depth 1.00", Forward, Start.
- Zone: At Pivot Zone B, Water ON, Depth 1.00".
- Zone: At Linear Zone A, Stop.
- Delay: After 2880 minute delay, Water ON, Depth 1.00", Forward, Start, Run program 2.

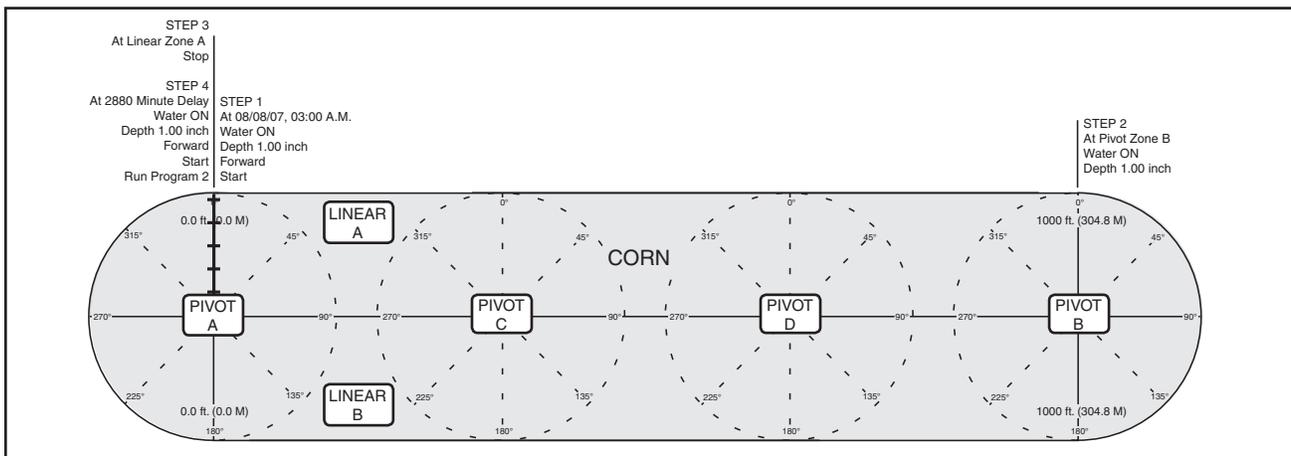


Figure 156-1

To write the first program of example 2.0, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press **1** for STEP PROGRAMS.
- (c) Press **2** for CREATE NEW.

STEP 1 - Example 2.0 Program 1

2. Program step 1 by Time.

- (a) Press **1** for TIME.
- (b) Enter the date **0**, **8**, **0**, **8**, **0**, **7** for August 8, 2007 and press . See figure 156-2.
- (c) Enter the time **0**, **3**, **0**, **0**, **0**, **0** for 3:00 A.M. and press . See figures 156-3 and 156-4.

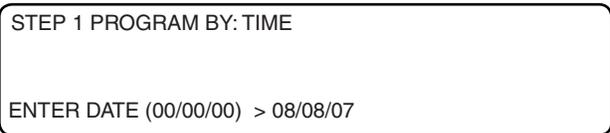


Figure 156-2



Figure 156-3

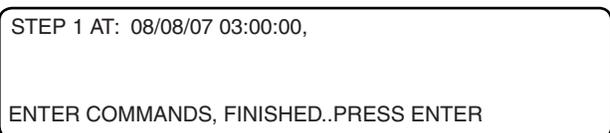


Figure 156-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

3. Enter the commands to be executed at the time.
See figure 157-1.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.
- (e) Press .
- (f) Press .

```
STEP 1 AT: 08/08/07 03:00:00, WATER ON,  
DEPTH 1.00, FORWARD, START,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 157-1

4. Finish step 1 and display the next step screen.
See figure 157-2.

- (a) Press .

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 157-2

STEP 2 - Example 2.0 Program 1

5. Program step 2 by zone. See figures 157-3, 157-4, and 157-5.

- (a) Press for NEXT STEP.
- (b) Press for OTHER.
- (c) Press for ZONE.
- (d) Press for PIVOT.
- (e) Press for ZONE B.

```
STEP 2 PROGRAM BY: ZONE
```

```
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 157-3

```
STEP 2 PROGRAM BY: ZONE PIVOT
```

```
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 157-4

```
STEP 2 AT: ZONE PIVOT B,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 157-5

6. Enter the commands to be executed at the zone.
See figure 157-6.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.

```
STEP 2 AT: ZONE PIVOT B, WATER ON,  
DEPTH 1.00,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 157-6

7. Finish step 2 and display the next step screen.
See figure 157-7.

- (a) Press .
- (b) Press for NEXT STEP.

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 157-7

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

STEP 3 - Example 2.0 Program 1

8. Program step 3 by zone. See figures 158-1, 158-2, and 158-3.
 - (a) Press for OTHER.
 - (b) Press for ZONE.
 - (c) Press for LINEAR.
 - (d) Press for ZONE A.
9. Enter the commands to be executed at the zone. See figure 158-4.
 - (a) Press .
10. Finish step 3 and display the next step screen. See figure 158-5.
 - (a) Press .
 - (b) Press for NEXT STEP.

STEP 4 - Example 2.0 Program 1

11. Program step 4 by delay. See figures 158-6, 158-7, and 158-8.
 - (a) Press for DELAY.
 - (b) Press for MINUTES.
 - (c) Press , , , for 2880 minutes.
 - (d) Press to retain the value.

```
STEP 3 PROGRAM BY: ZONE  
  
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 158-1

```
STEP 3 PROGRAM BY: ZONE LINEAR  
  
ENTER ZONE 1..A 2..B > 1
```

Figure 158-2

```
STEP 3 AT: ZONE LINEAR A,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 158-3

```
STEP 3 AT: ZONE LINEAR A, STOP,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 158-4

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 158-5

```
STEP 4 PROGRAM BY: DELAY  
  
DELAY 0..SECONDS 1..MINUTES > 1
```

Figure 158-6

```
STEP 4 PROGRAM BY: DELAY  
  
ENTER DELAY IN MINUTES > 2880
```

Figure 158-7

```
STEP 4 AT: 2880 MINUTES DELAY,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 158-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

12. Enter the commands to be executed at the delay.
See figure 159-1.

(a) Press .

(b) Press .

(c) Press  for 1.00 inch.

(d) Press  to retain the value.

(e) Press .

(f) Press .

(g) Press .

(h) Select the program number to run. For this example use program 2.

(i) Press  for program 2.

(j) Press  to retain program.

13. Finish step 4 and display the next step screen.
See figure 159-2.

(a) Press .

14. Finish program 1. See figure 159-2.

(a) Press  for PROGRAM FINISHED.

15. Save program 1. See figures 159-3, 159-4, and 159-5.

(a) Press  to SAVE PROGRAM.

(b) Select program number 1.

(c) Press  to save program.

STEP 4 AT: 2880 MINUTES DELAY,
WATER ON, DEPTH 1.00, FORWARD, START,
RUN PROGRAM 2,
ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 159-1

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1

Figure 159-2

0 EXIT
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
3 CANCEL PROGRAM

Figure 159-3

STORED PROGRAMS
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 1

Figure 159-4

PROGRAM 1 SAVED
PRESS ANY KEY >

Figure 159-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command

Program Two

Write program two. See figure 160-1.

Current Conditions:

- Machine ON at 0 feet in Linear Zone A, Water ON, Depth 1.00", Forward.

Program Machine To:

- Zone: At Pivot Zone B, no commands.
- Zone: At Linear Zone A, Stop.
- Delay: After 2880 minute delay, Water ON, Depth 1.00", Forward, Start, Run program 3.

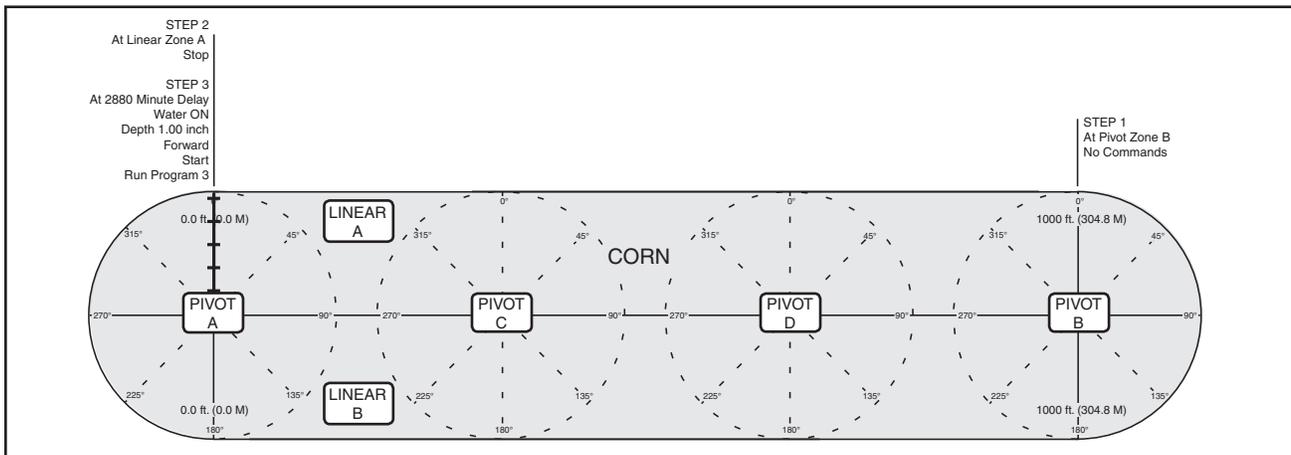


Figure 160-1

To write the second program of example 2.0, follow these steps:

1. Start a new program.

- Press .
- Press **1** for STEP PROGRAMS.
- Press **2** for CREATE NEW.

STEP 1 - Example 2.0 Program 2

2. Program step 1 by zone. See figures 160-2, 160-3, and 160-4.

- Press **2** for NEXT STEP.
- Press **6** for OTHER.
- Press **5** for ZONE.
- Press **1** for PIVOT.
- Press **2** for ZONE B.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 1

Figure 160-2

STEP 1 PROGRAM BY: ZONE PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 2

Figure 160-3

STEP 1 AT: ZONE PIVOT B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 160-4

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

3. Finish step 1 without any commands and display the next step screen. See figure 161-1.

(a) Press .

(b) Press  for NEXT STEP.

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 161-1

STEP 2 - Example 2.0 Program 2

4. Program step 2 by zone. See figures 161-2, 161-3, and 161-4.

(a) Press  for OTHER.

(b) Press  for ZONE.

(c) Press  for LINEAR.

(d) Press  for ZONE A.

```
STEP 2 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 161-2

5. Enter the commands to be executed at the zone. See figure 161-5.

(a) Press .

6. Finish step 2 and display the next step screen. See figure 161-6.

(a) Press .

(b) Press  for NEXT STEP.

```
STEP 2 PROGRAM BY: ZONE LINEAR

ENTER ZONE 1..A 2..B > 1
```

Figure 161-3

```
STEP 2 AT: ZONE LINEAR A,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 161-4

```
STEP 2 AT: ZONE LINEAR A, STOP,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 161-5

```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2
```

Figure 161-6

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

STEP 3 - Example 2.0 Program 2

7. Program step 3 by delay. See figures 162-1, 162-2, and 162-3.

- (a) Press  for DELAY.
- (b) Press  for MINUTES.
- (c) Press  ,  ,  ,  for 2880 minutes.
- (d) Press  to retain the value.

8. Enter the commands to be executed at the delay. See figure 162-4.

- (a) Press .
- (b) Press .
- (c) Press  for 1.00 inch.
- (d) Press  to retain the value.
- (e) Press .
- (f) Press .
- (g) Press .

9. Select the program number to run. For this example use program 3.

- (a) Press  for program 3.
- (b) Press  to retain program.

10. Finish step 3 and display the next step screen. See figure 162-5.

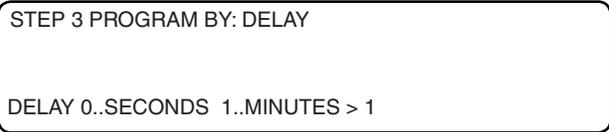
- (a) Press .

11. Finish program 2.

- (a) Press  for PROGRAM FINISHED.

12. Save program 2. See figures 162-6, 162-7, and 162-8.

- (a) Press  to SAVE PROGRAM.
- (b) Select program number 2.
- (c) Press  to save program.



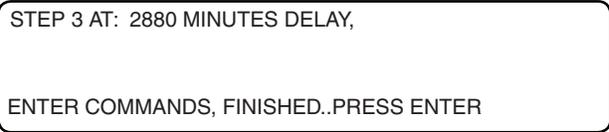
STEP 3 PROGRAM BY: DELAY
DELAY 0..SECONDS 1..MINUTES > 1

Figure 162-1



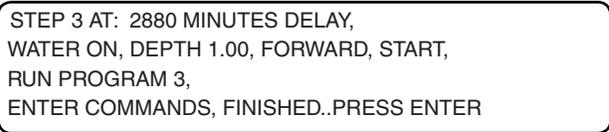
STEP 3 PROGRAM BY: DELAY
ENTER DELAY IN MINUTES > 2880

Figure 162-2



STEP 3 AT: 2880 MINUTES DELAY,
ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 162-3



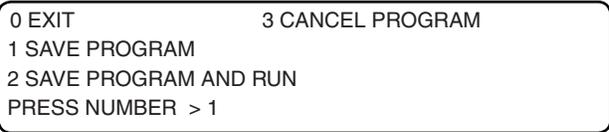
STEP 3 AT: 2880 MINUTES DELAY,
WATER ON, DEPTH 1.00, FORWARD, START,
RUN PROGRAM 3,
ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 162-4



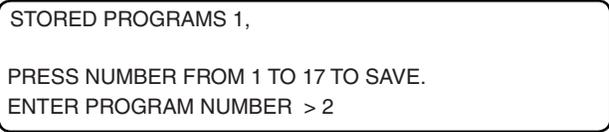
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1

Figure 162-5



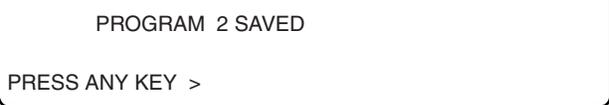
0 EXIT 3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1

Figure 162-6



STORED PROGRAMS 1,
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 2

Figure 162-7



PROGRAM 2 SAVED
PRESS ANY KEY >

Figure 162-8

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command

Program Three

Write program three. See figure 163-1.

Current Conditions:

- Machine ON at 0 feet in Linear Zone A, Water ON, Depth 1.00", Forward.

Program Machine To:

- Zone: At Pivot Zone B, no commands.
- Zone: At Linear Zone A, Stop.
- Stop.

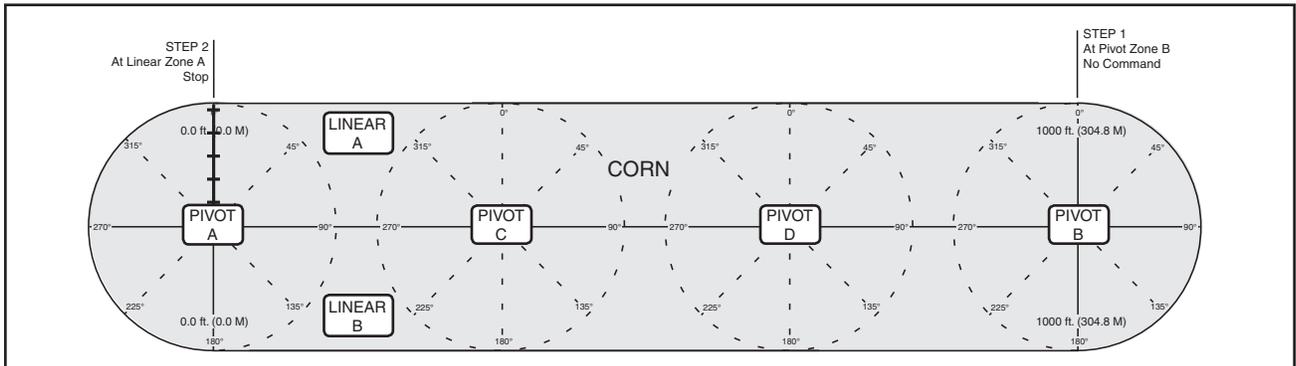


Figure 163-1

To write the second program of example 2.0, follow these steps:

1. Start a new program.

- (a) Press .
- (b) Press **1** for STEP PROGRAMS.
- (c) Press **2** for CREATE NEW.

STEP 1 - Example 2.0 Program 3

2. Program step 1 by zone. See figures 163-2, 163-3, and 163-4.

- (a) Press **2** for NEXT STEP.
- (b) Press **6** for OTHER.
- (c) Press **5** for ZONE.
- (d) Press **1** for PIVOT.
- (e) Press **2** for ZONE B.

3. Finish step 1 without any commands and display the next step screen. See figure 163-5.

- (a) Press .
- (b) Press **2** for NEXT STEP.

STEP 1 PROGRAM BY: ZONE

ENTER MODE 1..PIVOT 2..LINEAR > 1

Figure 163-2

STEP 1 PROGRAM BY: ZONE PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 2

Figure 163-3

STEP 1 AT: ZONE PIVOT B,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 163-4

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 2

Figure 163-5

Valley AutoPilot Control Panel

Program Examples

Step Program Examples - Scheduled Irrigation Cycles

2.0 Time Delay With Run Program Command (continued)

STEP 2 - Example 2.0 Program 3

4. Program step 2 by zone. See figures 164-1, 164-2, and 164-3.

(a) Press for OTHER.

(b) Press for ZONE.

(c) Press for LINEAR.

(d) Press for ZONE A.

5. Enter the commands to be executed at the zone. See figure 164-4.

(a) Press .

6. Finish step 2 and display the next step screen. See figure 164-5.

(a) Press .

7. Finish program 3. See figure 164-5.

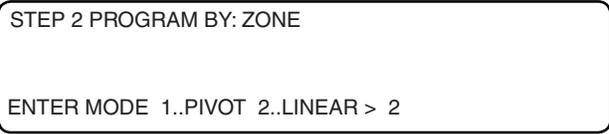
(a) Press for PROGRAM FINISHED.

8. Save program 3. See figures 164-6, 164-7, and 164-8.

(a) Press to SAVE PROGRAM.

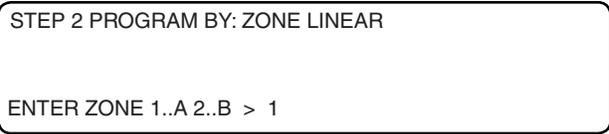
(b) Select program number 3.

(c) Press to save program.



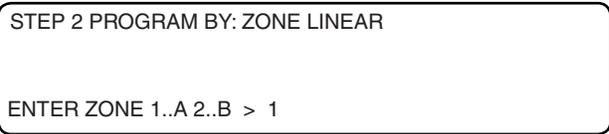
```
STEP 2 PROGRAM BY: ZONE
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 164-1



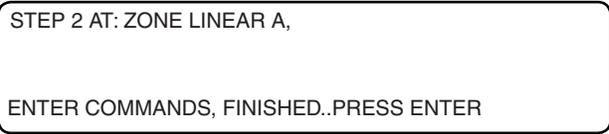
```
STEP 2 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 1
```

Figure 164-2



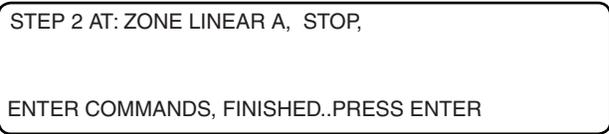
```
STEP 2 PROGRAM BY: ZONE LINEAR
ENTER ZONE 1..A 2..B > 1
```

Figure 164-3



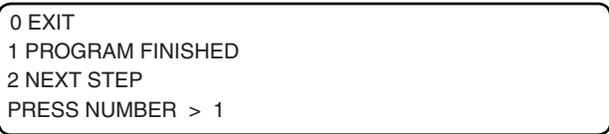
```
STEP 2 AT: ZONE LINEAR A,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 164-4



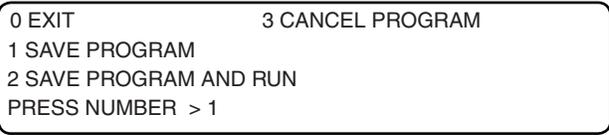
```
STEP 2 AT: ZONE LINEAR A, STOP,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 164-5



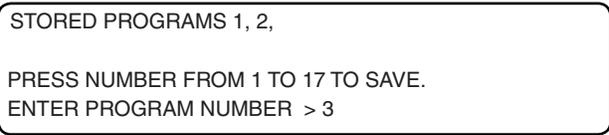
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 164-6



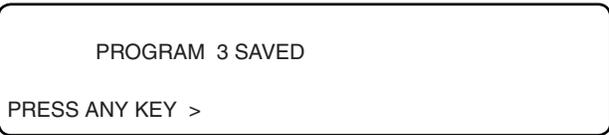
```
0 EXIT          3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 164-7



```
STORED PROGRAMS 1, 2,
PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > 3
```

Figure 164-8



```
PROGRAM 3 SAVED
PRESS ANY KEY >
```

Figure 164-9

Valley AutoPilot Control Panel

Program Examples

START\$ Program Examples

To use the power restart feature, a START\$ program must be written and Auto Restart must be ON. Without a START\$ program, power restart will not operate correctly, even though Auto Restart is ON. See Example 3.0 - Delayed Start and Example 3.1 Immediate Start.

3.0 Delayed Start

In this power restart example, the machine will be started three minutes or 180 seconds, a 10 second built in time delay plus 170 seconds, after regaining power.

Use a delayed power restart to reduce the possibility of damage to an electric pump if power is lost and regained in a short period of time. The time delay for safe restart of your pump/machine may be different. When the machine starts, the direction, percent, depth, and Water ON or Water OFF will remain the same as when the machine was last shut down. Unless the CYCLE\$ program or Daily OPS along with a step program commands other conditions.

To program Example 3.0, follow these steps:

1. Open the START\$ program WRITE screen. See figure 165-1.

- (a) Press .
- (b) Press  for START\$.
- (c) Press  for WRITE.

STEP 1 Example 3.0

2. Finish step 1. See figure 165-2.

- (a) Press .
- (b) Press  for NEXT STEP.

STEP 2 Example 3.0

3. Program step 2 by delay. See figures 165-3, 165-4, and 165-5.

- (a) Press  for DELAY.
- (b) Press  for SECONDS.
- (c) Press , ,  for 170 seconds.
- (d) Press  to retain the value.

4. Enter the command for step The command appears on the screen when entered. See figure 165-6.

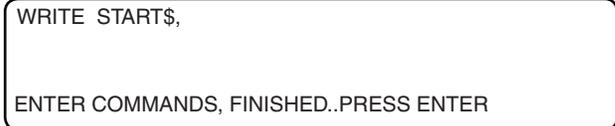
- (a) Press .

5. Finish step 2. See figure 165-6.

- (a) Press .

6. Finish the START\$ program. See figure 165-7.

- (a) Press  for PROGRAM FINISHED and the START\$ program is saved.



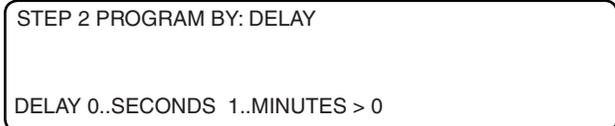
```
WRITE START$,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 165-1



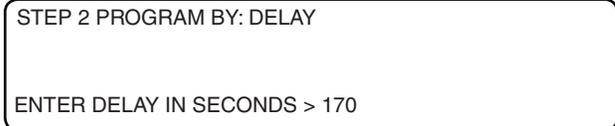
```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 2
```

Figure 165-2



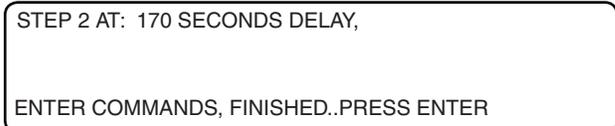
```
STEP 2 PROGRAM BY: DELAY  
  
DELAY 0..SECONDS 1..MINUTES > 0
```

Figure 165-3



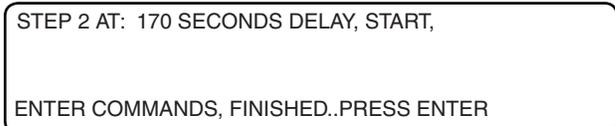
```
STEP 2 PROGRAM BY: DELAY  
  
ENTER DELAY IN SECONDS > 170
```

Figure 165-4



```
STEP 2 AT: 170 SECONDS DELAY,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 165-5



```
STEP 2 AT: 170 SECONDS DELAY, START,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 165-6

NOTE

•The START\$ program MUST contain the START command.



```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 165-7

Valley AutoPilot Control Panel

Program Examples

START\$ Program Examples

3.1 Immediate Start

In this restart example, after a power failure occurs and power is regained, the machine will be started immediately after the control panel's built in ten second delay.

When the machine starts, the direction, percent, depth, and Water ON or Water OFF will remain the same as when the machine was last shut down. Unless the CYCLE\$ program or Daily OPS along with a step program commands other conditions.

CAUTION

A DELAYED START IS RECOMMENDED TO REDUCE THE POSSIBILITY OF DAMAGE TO AN ELECTRIC PUMP IF POWER IS LOST AND REGAINED IN A SHORT PERIOD OF TIME.

To program Example 3.1, follow these steps:

1. Open the START\$ program WRITE screen. See figure 166-1.
 - (a) Press .
 - (b) Press  for START\$.
 - (c) Press  for WRITE.

STEP 1 Example 3.1

2. Enter the command for step 1. The command appears on the screen when entered. See figure 166-2.
 - (a) Press .
3. Finish step 1.
 - (a) Press .
4. Finish the START\$ program. See figure 166-3.
 - (a) Press  for PROGRAM FINISHED. The START\$ program is saved.

```
WRITE START$,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 166-1

```
WRITE START$, START,  
  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 166-2

NOTE

- The **START\$** program **MUST** contain the **START** command for Auto Restart to work.

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 166-3

Valley AutoPilot Control Panel

Program Examples

STOP\$ Program Example

4.0 Immediate Stop

The STOP\$ program is used by the CYCLE\$ program to stop the machine at the Stop-In-Slot position. When the machine and pump are controlled by the Stop command, Stop is the only command needed.

To write the STOP\$ program for example 4.0, follow these steps:

1. Write the STOP\$ program. See figure 167-1.

(a) Press .

(b) Press  for STOP\$.

(c) Press  for WRITE.

WRITE STOP\$

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 167-1

STEP 1 Example 4.0

2. Enter the command to stop the machine. See figure 167-2.

(a) Press .

3. Finish step 1 and display the next step screen. See figure 167-3.

(a) Press .

4. Finish the program. See figure 167-3.

(a) Press  for PROGRAM FINISHED.

WRITE STOP\$, STOP,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 167-2

NOTE

•The START\$ program MUST contain the START command for Auto Reverse to work.

0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1

Figure 167-3

Valley AutoPilot Control Panel

Program Examples

CYCLE\$ Program Examples - Repeating Cycles

5.0 Using CYCLE\$ Program With Stored Program

In this example, the START\$, STOP\$, AND CYCLE\$ programs will be used to start the machine, complete two identical irrigation cycles using a stored program, and stop the machine at 0 feet in Linear Zone A. See figure 168-1.

Alternately, the CYCLE\$ program can also be written like a step program where the first step is executed immediately and all other steps are executed according to a condition.

Expected Conditions:

- Delayed START\$ program is written.
- STOP\$ program is written.
- Stored program 2 is written.
- Machine off at 0 feet in Linear Zone A.
- SIS position set for 0 feet in Linear Zone A.
- SIS is OFF.

Program Machine By:

- CYCLE\$ program: Run Program 2.

NOTE

- The Stop-In-Slot is used as a counter by the computer to signal when a cycle has been completed. During each cycle, the machine MUST pass the Stop-In-Slot position in order to execute the CYCLE\$ program again.

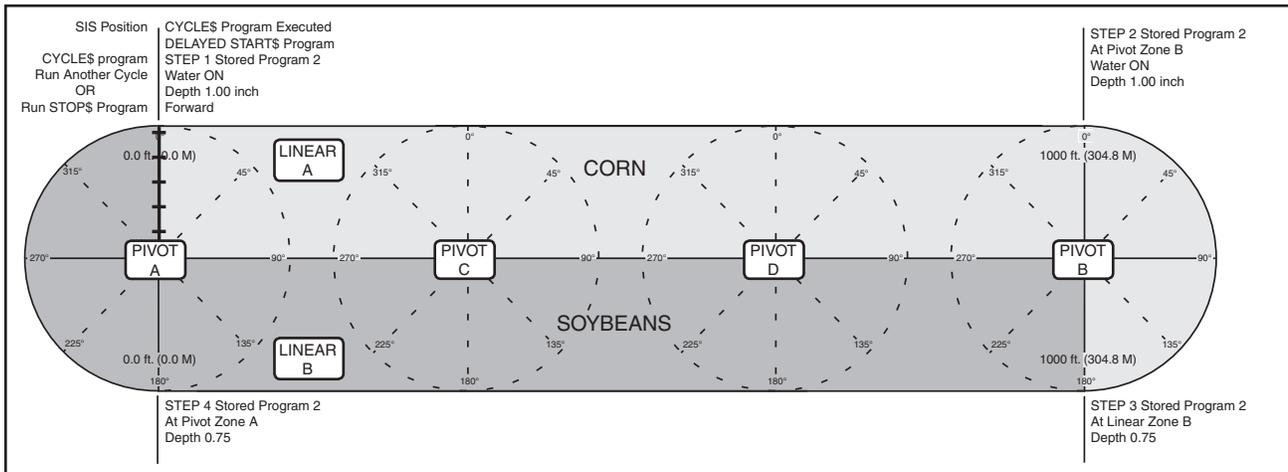


Figure 168-1

To write the CYCLE\$ program for example 5.0, follow these steps:

STEP 1 Example 5.0

1. Write the CYCLE\$ command. See figure 168-2.

- Press .
- Press **5** for CYCLE\$.
- Press **2** for WRITE.

WRITE CYCLE\$,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 168-2

NOTE

- During each cycle, the machine MUST pass the Stop-In-Slot position in order to execute the CYCLE\$ program again.

Valley AutoPilot Control Panel

Program Examples

CYCLE\$ Program Examples - Repeating Cycles

5.0 Using CYCLE\$ Program (continued)

2. Enter the commands to be executed. See figure 169-1.

(a) Press .

3. Select the program number to run. For this example, use program 2.

(a) Press for program 2.

(b) Press  to retain program.

4. Finish step 1 and display the next step screen. See figure 169-2.

(a) Press .

5. Finish the program. See figure 169-3.

(a) Press for PROGRAM FINISHED.

```
STORED PROGRAMS 1, 2, 3, 4,
```

```
ENTER PROGRAM NUMBER > 2
```

Figure 169-1

```
WRITE CYCLE$, RUN PROGRAM 2,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 169-2

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 169-3

Executing CYCLE\$

The CYCLE\$ program can be executed immediately (Option 1) from the OPTIONS/CYCLE\$/EXECUTE screen or the CYCLE\$ program can be executed by time (Option 2) through a step program.

Option 1 - Execute CYCLE\$ Immediately

To immediately execute the CYCLE\$ program, follow these steps:

1. Open the CYCLE\$ program execute screen. See figure 169-4.

(a) Press .

(b) Press for CYCLE\$.

(c) Press for EXECUTE.

2. Enter the number of cycles to complete. For this example use two cycles.

(a) Press for two cycles.

(b) Press  to retain the value and execute the CYCLE\$ program.

```
CYCLE$  
0 EXIT  
1 REVIEW  
2 WRITE  
3 EXECUTE  
ENTER NUMBER OF CYCLES ( 0 ) > 2
```

Figure 169-4

NOTE

•After pressing ENTER, the machine will immediately start and execute 2 complete cycles before stopping.

Valley AutoPilot Control Panel

Program Examples

CYCLE\$ Program Examples - Repeating Cycles

5.0 Using CYCLE\$ Program (continued)

Option 2 - Execute CYCLE\$ By Time

To execute the CYCLE\$ program due to a condition, follow these steps:

1. Start a new program.

(a) Press .

(b) Press  for STEP PROGRAMS.

(c) Press  for CREATE NEW.

2. Program step 1 by Time.

(a) Press  for TIME.

3. Enter the date , , , , ,  for August 8, 2007 and press . See figure 170-1.

4. Enter the time , , , , ,  for 3:00 A.M. and press . See figures 170-2 and 170-3.

5. Enter the commands to be executed at the time. See figure 170-4.

(a) Press .

(b) Press  for CYCLE\$.

(c) Press  for 2 cycles.

(d) Press  to retain the value.

6. Finish step 1 and display the next step screen. See figure 170-5.

(a) Press .

7. Finish the program. See figure 170-5.

(a) Press  for PROGRAM FINISHED.

8. Select one of the following. See figures 170-6, 170-7, and 170-8.

• Press  to SAVE PROGRAM.

(a) Select program number 1-17.

(b) Press  to save program.

• Press  to SAVE PROGRAM AND RUN.

(a) Select program number 1-17.

(b) Press  to save program and run.

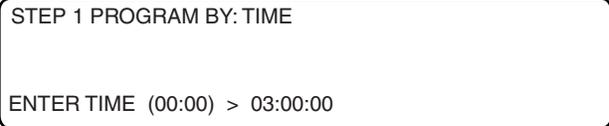
• Press  to CANCEL PROGRAM.



```
STEP 1 PROGRAM BY: TIME

ENTER DATE (00/00/00) > 08/08/07
```

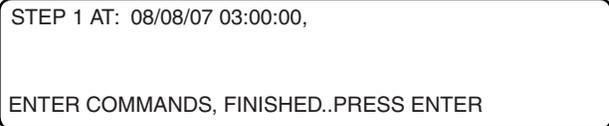
Figure 170-1



```
STEP 1 PROGRAM BY: TIME

ENTER TIME (00:00) > 03:00:00
```

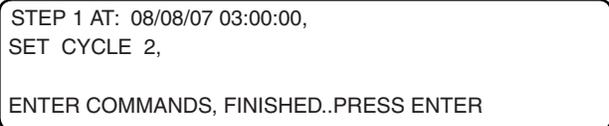
Figure 170-2



```
STEP 1 AT: 08/08/07 03:00:00,

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 170-3



```
STEP 1 AT: 08/08/07 03:00:00,
SET CYCLE 2,

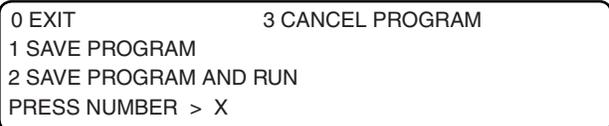
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 170-4



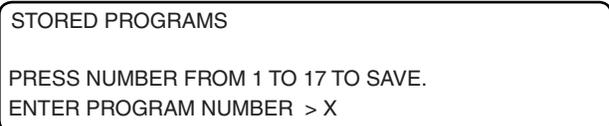
```
0 EXIT
1 PROGRAM FINISHED
2 NEXT STEP
PRESS NUMBER > 1
```

Figure 170-5



```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > X
```

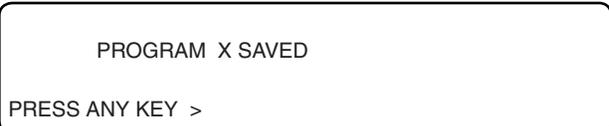
Figure 170-6



```
STORED PROGRAMS

PRESS NUMBER FROM 1 TO 17 TO SAVE.
ENTER PROGRAM NUMBER > X
```

Figure 170-7



```
PROGRAM X SAVED

PRESS ANY KEY >
```

Figure 170-8

Valley AutoPilot Control Panel

Program Examples

Daily OPS Examples - Scheduled Irrigation Hours

6.0 Seven Days a Week

This example requires that the Daily OPS be active every day of the week. With this example, when the machine is running, the machine direction, percent/depth, and Water ON/Water OFF will remain the same as when the machine was last shut down.

Expected Conditions:

- Delayed START\$ program is written.
- Desired STOP\$ program is written.
- Machine is stopped at SIS position.

Program Machine To:

- Stop at 10:00 A.M. and start at 6:00 P.M. seven days a week.

	STOP	START
Sunday	10:00 A.M.	6:00 P.M.
Monday	10:00 A.M.	6:00 P.M.
Tuesday	10:00 A.M.	6:00 P.M.
Wednesday	10:00 A.M.	6:00 P.M.
Thursday	10:00 A.M.	6:00 P.M.
Friday	10:00 A.M.	6:00 P.M.
Saturday	10:00 A.M.	6:00 P.M.

The machine will operate in the following way:

Daily Operations Mode

- Stop at 10:00 A.M. and start at 6:00 P.M. Every day of the week, Sunday through Saturday.

To program Example 6.0, follow these steps:

1. Press , 1, 8, 7, and 1 to display the Daily on/off screen. See figure 171-1.
2. Turn Daily Ops ON.
 - (a) Press 1 for ON.
3. Set the daily ops start/stop times.
 - (a) Press 2 for DAILY START/STOP.
 - (b) Enter the start time 1, 8, 0, 0, 0, 0 for 6:00 P.M. and press . See figure 171-2.
 - (c) Enter the stop time 1, 0, 0, 0, 0, 0, 0 for 10:00 A.M. and press . See figure 171-3.
4. Select the day(s) of the week that daily ops will be active
 - (a) Select every day of the week 1, 2, 3, 4, 5, 6, 7.
 - (b) Press . See figure 171-4.

NOTE

•A complete irrigation cycle may not be completed between the start and stop times.

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
DAILY OPS ( OFF) 1..ON 0..OFF > 1
```

Figure 171-1

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO START (00:00) > 18:00:00
```

Figure 171-2

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO STOP (00:00) > 10:00:00
```

Figure 171-3

```
0 EXIT                3 TUESDAY                6 FRIDAY
1 SUNDAY              4 WEDNESDAY              7 SATURDAY
2 MONDAY              5 THURSDAY
ENTER DAYS ( ) > 1, 2, 3, 4, 5, 6, 7,
```

Figure 171-4

Valley AutoPilot Control Panel

Program Examples

Daily OPS Examples - Scheduled Irrigation Hours

6.1 Selected Days With Stop Before Start

This example requires that the daily operations option be active only on Monday through Friday. With this example, when the machine is running, the machine direction, percent/depth, and Water ON/Water OFF will remain the same as when the machine was last shut down.

Expected Conditions:

- Delayed START\$ program is written.
- Desired STOP\$ program is written.
- Machine is stopped at SIS position.

Program Machine To:

- Stop at 9:00 A.M. and start at 7:00 P.M. on selected days.

	STOP	START
Sunday	————	Off All Day ————
Monday	9:00 A.M.	7:00 P.M.
Tuesday	9:00 A.M.	7:00 P.M.
Wednesday	9:00 A.M.	7:00 P.M.
Thursday	9:00 A.M.	7:00 P.M.
Friday	9:00 A.M.	7:00 P.M.
Saturday	————	Off All Day ————

The machine will operate in the following way:

Daily Operations Mode

- Stop at 9:00 A.M. and start at 7:00 P.M. Selected days of the week, Monday through Friday.
- Machine will start at 7:00 P.M. Friday and stop at 9:00 A.M. Saturday morning, then remain off/stopped until 7:00 P.M. Monday evening.

To program Example 6.1, follow these steps:

1. Press , **1**, **8**, **7**, and **1** to display the Daily on/off screen. See figure 172-1.
2. Turn Daily Ops ON.
 - (a) Press **1** for ON.
3. Set the daily ops start/stop.
 - (a) Press **2** for DAILY START/STOP.
 - (b) Enter the start time **1**, **9**, **0**, **0**, **0**, **0** for 7:00 P.M. and press . See figure 172-2.
 - (c) Enter the stop time **0**, **9**, **0**, **0**, **0**, **0** for 9:00 A.M. and press . See figure 172-3.
4. Select the day(s) of the week that daily ops will be active.
 - (a) Select days **2**, **3**, **4**, **5**, and **6**
 - (b) Press . See figure 172-4.

NOTE

•A complete irrigation cycle may not be completed between the start and stop times.

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
DAILY OPS ( OFF) 1..ON 0..OFF >
```

Figure 172-1

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO START (00:00) > 19:00:00
```

Figure 172-2

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO STOP (00:00) > 09:00:00
```

Figure 172-3

```
0 EXIT                3 TUESDAY           6 FRIDAY
1 SUNDAY              4 WEDNESDAY        7 SATURDAY
2 MONDAY              5 THURSDAY
ENTER DAYS ( ) > 2, 3, 4, 5, 6,
```

Figure 172-4

Valley AutoPilot Control Panel

Program Examples

Daily OPS Examples - Scheduled Irrigation Hours

6.2 Selected Days With Start Before Stop

This example requires that Daily OPS be active only on Monday through Friday. With this example, when the machine is running, the machine direction, percent/depth, and Water ON/Water OFF will remain the same as when the machine was last shut down.

Expected Conditions:

- Delayed START\$ program is written.
- Desired STOP\$ program is written.
- Machine is stopped at SIS position.

Program Machine To:

- Start at 1:00 A.M. and stop at 9:00 A.M. on selected days.

	STOP	START
Sunday	————	Off All Day ————
Monday	9:00 A.M.	1:00 A.M.
Tuesday	9:00 A.M.	1:00 A.M.
Wednesday	9:00 A.M.	1:00 A.M.
Thursday	9:00 A.M.	1:00 A.M.
Friday	9:00 A.M.	1:00 A.M.
Saturday	————	Off All Day ————

The machine will operate in the following way:

Daily Operations Mode

- ON at 1:00 A.M. and OFF at 9:00 A.M. on selected days of the week, Monday through Friday.
- Machine will remain OFF on Friday from 9:00 A.M. until Monday at 1:00 A.M.

To program Example 6.2, follow these steps:

1. Press , , , , and to display the Daily on/off screen. See figure 173-1.
2. Turn Daily Ops ON.
 - (a) Press for ON.
3. Set the daily ops start/stop times.
 - (a) Press for DAILY START/STOP.
 - (b) Enter the start time , , , , , for 1:00 A.M. and press . See figure 173-2.
 - (c) Enter the stop time , , , , , for 9:00 A.M. and press . See figure 173-3.
4. Select the day(s) of the week that daily ops will be active
 - (a) Select days , , , , and .
 - (b) Press . See figure 173-4.

NOTE

- A complete irrigation cycle may not be completed between the start and stop times.

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
DAILY OPS ( OFF) 1..ON 0..OFF >
```

Figure 173-1

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO START (00:00) > 01:00:00
```

Figure 173-2

```
0 EXIT                3 CYCLE ON/OFF
1 DAILY ON/OFF       4 CYCLE INTERVAL
2 DAILY START/STOP   5 CYCLE START TIME
ENTER TIME TO STOP (00:00) > 09:00:00
```

Figure 173-3

```
0 EXIT                3 TUESDAY                6 FRIDAY
1 SUNDAY              4 WEDNESDAY              7 SATURDAY
2 MONDAY              5 THURSDAY
ENTER DAYS ( ) > 2, 3, 4, 5, 6,
```

Figure 173-4

Valley AutoPilot Control Panel

Program Examples

Daily OPS Examples - Scheduled Irrigation Cycles

6.3 Daily OPS Cycle - Interval In Days

Daily OPS Cycle allows the operator to run complete irrigation cycles using the START\$, STOP\$, and CYCLE\$ programs with a stored program at specified intervals in days. For example, the operator may want to irrigate every 3 days or 5 days. See figure 174-1.

Alternately, the CYCLE\$ program can also be written like a step program where the first step is executed immediately and all other steps are executed according to a condition.

Expected Conditions:

- Delayed START\$ program is written.
- STOP\$ program is written.
- Stored program 2 is written.
- Machine off at 0 feet in Linear Zone A.
- SIS position set for 0 feet in Linear Zone A.
- SIS is OFF.

Program Machine By:

- Cycle Interval: Execute 1 cycle every 3 days at 10:00 A.M.
- CYCLE\$ program: Run Program 2.

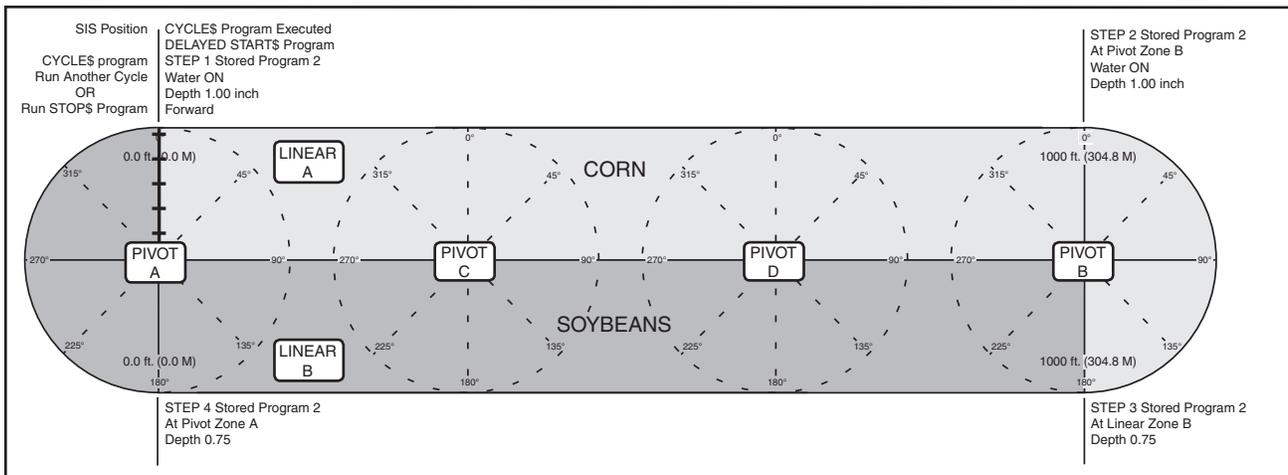


Figure 174-1

Write CYCLE\$ Program

To write the CYCLE\$ program for example 6.3, follow these steps:

STEP 1 Example 6.3

1. Write the CYCLE\$ command. See figure 174-2.

- Press .
- Press **5** for CYCLE\$.
- Press **2** for WRITE.

WRITE CYCLE\$,

ENTER COMMANDS, FINISHED..PRESS ENTER

Figure 174-2

NOTE

- During each cycle, the machine **MUST** pass the Stop-In-Slot position in order to execute the CYCLE\$ program again.

Valley AutoPilot Control Panel

Program Examples

Daily OPS Examples - Scheduled Irrigation Cycles

6.3 Daily OPS Cycle - Interval In Days (continued)

Write CYCLE\$ Program (continued)

2. Enter the commands to be executed. See figure 175-1.

(a) Press .

3. Select the program number to run. For this example use program 2.

(a) Press for program 2.

(b) Press  to retain program.

4. Finish step 1 and display the next step screen. See figure 175-2.

(a) Press .

5. Finish the program. See figure 175-3.

(a) Press for PROGRAM FINISHED.

Setup Cycle Interval

To setup the Cycle Interval for example 6.3, do the following:

6. Press , , , and to display the Daily OPS screen. See figure 175-4.

7. Turn repeat cycle ON. See figure 175-5.

(a) Press to display Cycle ON/OFF screen.

(b) Press to turn repeat cycle ON.

8. Set the cycle interval. See figure 175-6.

(a) Press to display Cycle Interval screen.

(b) Press for repeat cycle every 3 days.

(c) Press  to retain the value.

9. Set the cycle start time. See figure 175-7.

(a) Press to display Cycle Start Time screen.

(b) Enter the cycle start time , , , , for 10:00 A.M. and press .

```
STORED PROGRAMS 1, 2, 3, 4,
```

```
ENTER PROGRAM NUMBER > 2
```

Figure 175-1

```
WRITE CYCLE$, RUN PROGRAM 2,
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 175-2

```
0 EXIT  
1 PROGRAM FINISHED  
2 NEXT STEP  
PRESS NUMBER > 1
```

Figure 175-3

```
0 EXIT  
1 DAILY ON/OFF  
2 DAILY START/STOP  
PRESS NUMBER > 1  
3 CYCLE ON/OFF  
4 CYCLE INTERVAL  
5 CYCLE START TIME
```

Figure 175-4

```
0 EXIT  
1 DAILY ON/OFF  
2 DAILY START/STOP  
REPEAT CYCLE ( OFF ) 1..ON 0..OFF > 1  
3 CYCLE ON/OFF  
4 CYCLE INTERVAL  
5 CYCLE START TIME
```

Figure 175-5

```
0 EXIT  
1 DAILY ON/OFF  
2 DAILY START/STOP  
CYCLE INTERVAL ( 7 DAYS ) > 3  
3 CYCLE ON/OFF  
4 CYCLE INTERVAL  
5 CYCLE START TIME
```

Figure 175-6

```
0 EXIT  
1 DAILY ON/OFF  
2 DAILY START/STOP  
ENTER TIME TO START ( 00:00 ) > 10:00:00  
3 CYCLE ON/OFF  
4 CYCLE INTERVAL  
5 CYCLE START TIME
```

Figure 175-7

Valley AutoPilot Control Panel

Program Examples

Designing Sector Programs

A Sector program uses positions in a zone to create a sector for commanding changes to any of the following: Water ON, Water OFF, Depth, Percent, Aux1, and Aux2. The completed sector program design form example below illustrates how to use the form to outline the following example programs. See figure 176-1.

Example Program and Design Form

Current Conditions:

- Machine running in Linear Zone A, 0 feet, Water ON, Linear Depth 0.50", Depth 0.50", Forward.
- Stop In Slot set for Linear Zone A 0 feet.
- Stop In Slot is ON.

Program Machine To:

- Change water application depth.
- At Pivot Zone B: 90° to 180°, both directions, Depth 1.00".
- At Linear Zone B: 0 to 1000 feet, both directions, Depth 1.00".
- At Pivot Zone A: 180° to 270°, both directions, Depth 1.00".

The sector program design form below has been filled out to reflect the example program. If you complete the program design form, it makes entering the program easy. Just follow each column down and enter the correct information.

Blank sector program design forms are provided at the end of the program examples.

As a guide, follow these steps when thinking about programs you want to write:

1. Make a sketch of the field and identify what you want the irrigation machine to do.
2. Determine what must happen first.
3. Identify the zone, sector positions, and machine direction that will execute sector program (Pivot B, 90-180°, Both Directions).
4. Identify the commands to be executed in the sector (Depth 1.00").
5. Save this sector program and write the next sector program.

SECTOR PROGRAMS ARE NOT EXECUTED IN NUMERICAL ORDER THEY ARE EXECUTED IN THE RESPECTIVE SECTOR.

Sector Program Design Form
 System Type Universal Linear Field I.D. 05

← REVERSE LOWER DISTANCE ALL LINEARS IN LINEAR ZONE A FORWARD UPPER DISTANCE → FORWARD
← REVERSE LOWER DISTANCE UNIVERSAL OR VALLEY LINEAR IN LINEAR ZONE B FORWARD UPPER DISTANCE → FORWARD
← REVERSE UPPER DISTANCE 2 OR 4 WHEEL SWING AROUND LINEAR IN LINEAR ZONE B ← REVERSE LOWER DISTANCE → FORWARD

S15-ON Linear A 0 feet
Manually Start Machine, Water ON, Forward
Linear Depth Set AT 0.50
Pivot Depth Set AT 0.50

Program 1: Pivot B 90°-180° Both Dir. Depth 1.00

Program 2: Linear B 0-1000 ft. Both Dir. Depth 1.00

Program 3: Pivot A 180°-270° Both Dir. Depth 1.00

ZONE	SECTOR PROGRAM NUMBER								
	1	2	3	4	5	6	7	8	9
LINEAR A									
LINEAR B		X							
PIVOT A			X						
PIVOT B	X								
PIVOT C									
PIVOT D									
SECTOR									
LOWER DISTANCE		0							
UPPER DISTANCE		1000							
LEFT ANGLE	90		180						
RIGHT ANGLE	180		270						
DIRECTION									
BOTH	X	X	X						
FORWARD									
REVERSE									
COMMANDS									
WATER ON	(0)								
WATER OFF	(0)								
PERCENT	(%)								
DEPTH	(0.50)	1.00	1.00	1.00					
OPTIONS	(2)								
AUX 1 ON / OFF									
AUX 2 ON / OFF									
MODULE									

Figure 176-1

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector

In this example, a sector program will be written using the available sector commands for water application including depth and percent, Aux1 ON/OFF, and Aux2 ON/OFF. See figure 177-1.

Sector programs can be used with step programs, but a step program MAY NOT control the same command that a sector program is controlling. If the step program does control a command that the sector program controls, the sector program will be deleted from sector program current memory and will not run.

Use of step programs should be limited to the start/stop of machine and change in direction. Avoid using Water ON, Water OFF, Depth, Percent, Aux1, or Aux2 in a step program when they are used by a sector program.

Sector Programs

Current Conditions:

- Machine is running in Linear Zone A at 0 feet; Water ON; Percent 100; Forward; Aux1 ON.
- Stop In Slot is set for Linear Zone A at 0 feet.
- Stop In Slot is ON.

Program Machine To:

- Pivot Zone B: 0° to 89° in Both Directions, Water ON, Percent 100, Aux1 ON.
- Pivot Zone B: 90° to 180° in Both Directions, Water ON, Depth 1.00", Aux1 OFF.
- Linear Zone B: 749 to 1000 feet in Both Directions, Water OFF, Percent 100.
- Linear Zone B: 0 to 750 feet in Both Directions, Water ON, Depth 1.00".
- Pivot Zone A: 180° to 269° in Both Directions, Water ON, Depth 1.00".
- Pivot Zone A: 270° to 0° in Both Directions, Water ON, Percent 100, Aux1 ON.

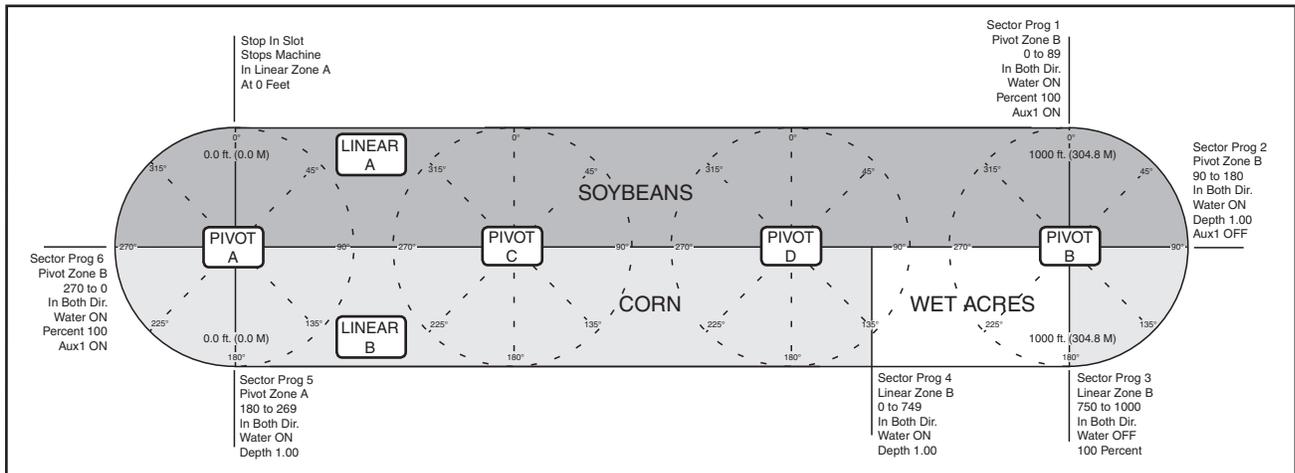


Figure 177-1

SECTOR PROGRAM 1

To write sector Program 1 of example 7.0, follow these steps:

1. Start a new program. See figures 177-2 and 177-3.

(a) Press .

(b) Press  for SECTOR PROGRAMS.

(c) Press  for CREATE NEW.

```

0 EXIT
1 STEP PROGRAMS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
3 PROGRAM TRANSITIONS
4 AUTO-PROG TRANSITIONS
    
```

Figure 177-2

```

0 EXIT
1 RUN STORED
2 CREATE NEW
PRESS NUMBER > 2
3 REVIEW CURRENT
4 REVIEW STORED
5 ERASE
    
```

Figure 177-3

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

2. Select the mode. See figure 178-1.
 - (a) Press for PIVOT.
3. Select the zone. See figure 178-2.
 - (a) Press for ZONE B.
4. Enter the left angle. See figure 178-3.
 - (a) Press for 0.0 degrees.
 - (b) Press to retain the value.
5. Enter the right angle. See figure 178-4.
 - (a) Press , for 89 degrees.
 - (b) Press to retain the value.
6. Select the machine direction, in which the commands will be executed. See figures 178-5 and 178-6.
 - (a) Press for BOTH.
7. Enter commands for program to execute. See figure 178-7.
 - (a) Press .
 - (b) Press .
 - (c) Press , , for 100 percent.
 - (d) Press to retain the value.
 - (e) Press .
 - (f) Press for AUX1.
 - (g) Press for ON.
8. Finish the sector program.
 - (a) Press .

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
```

```
ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 178-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT
```

```
ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 178-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT B,
```

```
ENTER LEFT ANGLE ( 0 ) > 0
```

Figure 178-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT B, 0.0 -
```

```
ENTER RIGHT ANGLE ( 0 ) > 89
```

Figure 178-4

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT B, 0.0 - 89.0,
```

```
DIR 0..BOTH 1..FOR 2..REV > 0
```

Figure 178-5

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT B, 0.0 - 89.0, BOTH: THEN
```

```
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 178-6

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS  
IF PIVOT B, 0.0 - 89.0, BOTH: THEN  
WATER ON, PERCENT 100, AUXOUT1 ON  
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 178-7

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

9. Select one of the following. See figures 179-1, 179-2, and 179-3.

- Press **1** to SAVE PROGRAM.
 - (a) Select program number 1-9.
 - (b) Press **↵** to save program.
- Press **2** to SAVE PROGRAM AND RUN.
 - (c) Select program number 1-9.
 - (d) Press **↵** to save program and run.
- Press **3** to CANCEL PROGRAM.

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 179-1

```
STORED PROGRAMS

PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 1
```

Figure 179-2

```
PROGRAM 1 SAVED

PRESS ANY KEY >
```

Figure 179-3

SECTOR PROGRAM 2

To write sector program 2 of example 7.0, follow these steps:

10. Start a new program. See figures 179-4 and 179-5.

- (a) Press **⏏**.
- (b) Press **2** for SECTOR PROGRAMS.
- (c) Press **2** for CREATE NEW.

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
```

Figure 179-4

11. Select the mode. See figure 179-6.

- (a) Press **1** for PIVOT.

```
0 EXIT                3 REVIEW CURRENT
1 RUN STORED         4 REVIEW STORED
2 CREATE NEW         5 ERASE
PRESS NUMBER > 2
```

Figure 179-5

12. Select the zone. See figure 179-7.

- (a) Press **2** for ZONE B.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS

ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 179-6

13. Enter the left angle. See figure 179-8.

- (a) Press **9**, **0** for 90 degrees.
- (b) Press **↵** to retain the value.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 2
```

Figure 179-7

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT B,

ENTER LEFT ANGLE ( 0 ) > 90
```

Figure 179-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

14. Enter the right angle. See figure 180-1.

(a) Press , , for 180 degrees.

(b) Press to retain the value.

15. Select the machine direction, in which the commands will be executed. See figures 180-2 and 180-3.

(a) Press for BOTH.

16. Enter commands for program to execute. See figure 180-4.

(a) Press .

(b) Press .

(c) Press for 1.00 inch.

(d) Press to retain the value.

(e) Press .

(f) Press for AUX1.

(g) Press for OFF.

17. Finish the sector program.

(a) Press .

18. Select one of the following. See figures 180-5, 180-6, and 180-7.

• Press to SAVE PROGRAM.

(a) Select program number 1-9.

(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 1-9.

(b) Press to save program and run.

• Press to CANCEL PROGRAM.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT B, 90.0 -

ENTER RIGHT ANGLE ( 0 ) > 180
```

Figure 180-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT B, 90.0 - 180.0,

DIR 0..BOTH 1..FOR 2..REV > 0
```

Figure 180-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT B, 90.0 - 180.0, BOTH: THEN

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 180-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT B, 90.0 - 180.0, BOTH: THEN
WATER ON, DEPTH 1.00, AUXOUT1 OFF
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 180-4

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 180-5

```
STORED PROGRAMS 1,

PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 2
```

Figure 180-6

```
PROGRAM 2 SAVED

PRESS ANY KEY >
```

Figure 180-7

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

SECTOR PROGRAM 3

To write sector program 3 of example 7.0, follow these steps:

19. Start a new program. See figures 181-1 and 181-2.

(a) Press .

(b) Press for SECTOR PROGRAMS.

(c) Press for CREATE NEW.

20. Select the mode. See figure 181-3.

(a) Press for LINEAR.

21. Select the zone. See figure 181-4.

(a) Press for ZONE B.

22. Enter the lower distance. See figure 181-5.

(a) Press , , for 750 feet.

(b) Press  to retain the value.

23. Enter the upper distance. See figure 181-6.

(a) Press , , , for 1000 feet.

(b) Press  to retain the value.

24. Select the machine direction, in which the commands will be executed. See figures 181-7 and 181-8.

(a) Press for BOTH.

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
```

Figure 181-1

```
0 EXIT                3 REVIEW CURRENT
1 RUN STORED         4 REVIEW STORED
2 CREATE NEW         5 ERASE
PRESS NUMBER > 2
```

Figure 181-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS

ENTER MODE  1..PIVOT  2..LINEAR > 2
```

Figure 181-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR

ENTER ZONE  1..A  2..B > 2
```

Figure 181-4

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B,

ENTER LOWER DISTANCE ( 0 ) > 750
```

Figure 181-5

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 750 -

ENTER UPPER DISTANCE ( 0 ) > 1000
```

Figure 181-6

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 750 - 1000,

DIR  0..BOTH  1..FOR  2..REV > 0
```

Figure 181-7

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 750 - 1000, BOTH: THEN

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 181-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

25. Enter commands for program to execute. See figure 182-1.

- (a) Press .
- (b) Press .
- (c) Press , ,  for 100 PERCENT.
- (d) Press  to retain the value.

26. Finish the sector program.

- (a) Press .

27. Select one of the following. See figures 182-2, 182-3, and 182-4.

- Press  to SAVE PROGRAM.
 - (a) Select program number 1-9.
 - (b) Press  to save program.
- Press  to SAVE PROGRAM AND RUN.
 - (c) Select program number 1-9.
 - (d) Press  to save program and run.
- Press  to CANCEL PROGRAM.

SECTOR PROGRAM 4

To write sector program 4 of example 7.0, follow these steps:

28. Start a new program. See figures 182-5 and 182-6.

- (a) Press .
- (b) Press  for SECTOR PROGRAMS.
- (c) Press  for CREATE NEW.

29. Select the mode. See figure 182-7.

- (a) Press  for LINEAR.

30. Select the zone. See figure 182-8.

- (a) Press  for ZONE B.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 750 - 1000, BOTH: THEN
WATER OFF, PERCENT 100,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 182-1

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 182-2

```
STORED PROGRAMS 1, 2,
PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 3
```

Figure 182-3

```
PROGRAM 3 SAVED
PRESS ANY KEY >
```

Figure 182-4

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
```

Figure 182-5

```
0 EXIT                3 REVIEW CURRENT
1 RUN STORED         4 REVIEW STORED
2 CREATE NEW         5 ERASE
PRESS NUMBER > 2
```

Figure 182-6

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
ENTER MODE 1..PIVOT 2..LINEAR > 2
```

Figure 182-7

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR
ENTER ZONE 1..A 2..B > 2
```

Figure 182-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

31. Enter the lower distance. See figure 183-1.

- (a) Press for 0 feet.
- (b) Press to retain the value.

32. Enter the upper distance. See figure 183-2.

- (a) Press , , for 749 feet.
- (b) Press to retain the value.

33. Select the machine direction, in which the commands will be executed. See figures 183-3 and 183-4.

- (a) Press for BOTH.

34. Enter commands for program to execute. See figure 183-5.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press to retain the value.

35. Finish the sector program.

- (a) Press .

36. Select one of the following. See figures 183-6, 183-7, and 183-8.

- Press to SAVE PROGRAM.
 - (a) Select program number 1-9.
 - (b) Press to save program.
- Press to SAVE PROGRAM AND RUN.
 - (a) Select program number 1-9.
 - (b) Press to save program and run.
- Press to CANCEL PROGRAM.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B,
ENTER LOWER DISTANCE ( 0 ) > 0
```

Figure 183-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 0 -
ENTER UPPER DISTANCE ( 0 ) > 749
```

Figure 183-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 0 - 749,
DIR 0..BOTH 1..FOR 2..REV > 0
```

Figure 183-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 0 - 749, BOTH: THEN
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 183-4

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF LINEAR B, 0 - 749, BOTH: THEN
WATER ON, DEPTH 1.00,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 183-5

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 183-6

```
STORED PROGRAMS 1, 2, 3,
PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 4
```

Figure 183-7

```
PROGRAM 4 SAVED
PRESS ANY KEY >
```

Figure 183-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

SECTOR PROGRAM 5

To write sector program 5 of example 7.0, follow these steps:

37. Start a new program. See figures 184-1 and 184-2.

(a) Press .

(b) Press for SECTOR PROGRAMS.

(c) Press for CREATE NEW.

38. Select the mode. See figure 184-3.

(a) Press for PIVOT.

39. Select the zone. See figure 184-4.

(a) Press for ZONE A.

40. Enter the left angle. See figure 184-5.

(a) Press , , for 180 degrees.

(b) Press  to retain the value.

41. Enter the right angle. See figure 184-6.

(a) Press , , for 269 degrees.

(b) Press  to retain the value.

42. Select the machine direction, in which the commands will be executed. See figures 184-7 and 184-8.

(a) Press for BOTH.

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
```

Figure 184-1

```
0 EXIT                3 REVIEW CURRENT
1 RUN STORED          4 REVIEW STORED
2 CREATE NEW          5 ERASE
PRESS NUMBER > 2
```

Figure 184-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS

ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 184-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 184-4

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A,

ENTER LEFT ANGLE ( 0 ) > 180
```

Figure 184-5

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 180.0 -

ENTER RIGHT ANGLE ( 0 ) > 269
```

Figure 184-6

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 180.0 - 269.0.

IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 180.0 - 269.0, BOTH: THEN

ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 184-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

43. Enter commands for program to execute. See figure 185-1.

- (a) Press .
- (b) Press .
- (c) Press for 1.00 inch.
- (d) Press  to retain the value.

44. Finish the sector program.

- (a) Press .

45. Select one of the following. See figures 185-2, 185-3, and 185-4.

- Press to SAVE PROGRAM.
 - (a) Select program number 1-9.
 - (b) Press  to save program.
- Press to SAVE PROGRAM AND RUN.
 - (a) Select program number 1-9.
 - (b) Press  to save program and run.
- Press to CANCEL PROGRAM.

SECTOR PROGRAM 6

To write sector program 6 of example 7.0, follow these steps:

46. Start a new program. See figures 185-5 and 185-6.

- (a) Press .
- (b) Press for SECTOR PROGRAMS.
- (c) Press for CREATE NEW.

47. Select the mode. See figure 185-7.

- (a) Press for PIVOT.

48. Select the zone. See figure 185-8.

- (a) Press for ZONE A.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 180.0 - 269.0, BOTH: THEN
WATER ON, DEPTH 1.00,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 185-1

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 185-2

```
STORED PROGRAMS 1, 2, 3, 4,
PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 5
```

Figure 185-3

```
PROGRAM 5 SAVED
PRESS ANY KEY >
```

Figure 185-4

```
0 EXIT                3 PROGRAM TRANSITIONS
1 STEP PROGRAMS      4 AUTO-PROG TRANSITIONS
2 SECTOR PROGRAMS
PRESS NUMBER > 2
```

Figure 185-5

```
0 EXIT                3 REVIEW CURRENT
1 RUN STORED          4 REVIEW STORED
2 CREATE NEW          5 ERASE
PRESS NUMBER > 2
```

Figure 185-6

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS

ENTER MODE 1..PIVOT 2..LINEAR > 1
```

Figure 185-7

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT

ENTER ZONE 1..A 2..B 3..C 4..D > 1
```

Figure 185-8

Valley AutoPilot Control Panel

Program Examples

Sector Program Example

7.0 Program Water Application Commands By Sector (continued)

49. Enter the left angle. See figure 186-1.

(a) Press , , for 270 degrees.

(b) Press to retain the value.

50. Enter the right angle. See figure 186-2.

(a) Press for 0.0 degrees.

(b) Press to retain the value.

51. Select the machine direction, in which the commands will be executed. See figures 186-3 and 186-4.

(a) Press for BOTH.

52. Enter commands for program to execute. See figure 186-5.

(a) Press .

(b) Press .

(c) Press , , for 100 percent.

(d) Press to retain the value.

(e) Press .

(f) Press for AUX1.

(g) Press for ON.

53. Finish the sector program.

(a) Press .

54. Select one of the following. See figures 186-6, 186-7, and 186-8.

• Press to SAVE PROGRAM.

(a) Select program number 1-9.

(b) Press to save program.

• Press to SAVE PROGRAM AND RUN.

(a) Select program number 1-9.

(b) Press to save program and run.

• Press to CANCEL PROGRAM.

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A,
ENTER LEFT ANGLE ( 0 ) > 270
```

Figure 186-1

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 -
ENTER RIGHT ANGLE ( 0 ) > 0
```

Figure 186-2

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 0.0,
DIR 0..BOTH 1..FOR 2..REV > 0
```

Figure 186-3

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 0.0, BOTH: THEN
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 186-4

```
IF ZONE, SECTOR, AND DIR: THEN COMMANDS
IF PIVOT A, 270.0 - 0.0, BOTH: THEN
WATER ON, PERCENT 100, AUXOUT1 ON,
ENTER COMMANDS, FINISHED..PRESS ENTER
```

Figure 186-5

```
0 EXIT                3 CANCEL PROGRAM
1 SAVE PROGRAM
2 SAVE PROGRAM AND RUN
PRESS NUMBER > 1
```

Figure 186-6

```
STORED PROGRAMS 1, 2, 3, 4, 5,
PRESS NUMBER FROM 1 TO 9 TO SAVE.
ENTER PROGRAM NUMBER > 6
```

Figure 186-7

```
PROGRAM 6 SAVED
PRESS ANY KEY >
```

Figure 186-8

Valley AutoPilot Control Panel

Program Examples

Programming Transitions

When programming transitions, use the running mode as a condition for the transition to the next zone. Transition mode availability is based on the running mode when the transition is reached. The completed transition program design form example below illustrates how to use the form to outline the following example transitions. See figure 187-1.

Example Program and Design Form

Current Conditions:

- Machine running in Pivot Zone A, 0°, Water ON, Linear Depth 0.50", Pivot Depth 0.50", Forward.
- Stop In Slot set for Pivot Zone A, 0°.
- Stop In Slot is ON.

Program Machine To:

- If Pivot Forward to T2, then Linear Forward to T6.
- If Linear Forward to T6, then Linear Forward to T4.
- If Linear Forward to T4, then Pivot Reverse to T3.
- If Pivot Reverse to T3, then Linear Reverse to T5.
- If Linear Reverse to T5, then Linear Reverse to T1.
- If Linear Reverse to T1, then Pivot Forward to T2.

The transition program design form below has been filled out to reflect the example program. If you complete the program design form, it makes entering the program easy. Just follow each transition column down and enter the correct information for the transition mode.

Blank transition program design forms are provided on pages 192 to 193.

As a guide, follow these steps when thinking about programming transitions:

55. Make a sketch of the field and identify what you want the irrigation machine to do.

56. Identify the running modes that will be used to reach each transition. Example: Linear Reverse to T1 or Pivot Reverse to T1.

57. Select, record, and circle the transition modes that will be used after the transition is reached. Example: If T1 is reached in Pivot Reverse, then use Linear Forward to T5.

58. For running modes that will not be used to reach a transition, select transition modes that would lead the machine back to the desired path.

59. Program each running mode of each transition.

Transition Program Design Form AUL/VSAL System Type Only
Field I.D. 03

1-4 Transition Field Sketch

TRANSITION GUIDELINES

- In all situations:
 - DO NOT USE Linear Reverse from T1 or T2.
 - DO NOT USE Linear Forward from T3 or T4.
- If the guidance system is above ground cable or the water delivery system is a ditch:
 - DO NOT USE Pivot Forward from T1, T4, T5, T6, T7, or T8.
 - DO NOT USE Pivot Reverse from T2, T3, T5, T6, T7, or T8.

#	MODES
1	PF = Pivot Forward
2	PR = Pivot Reverse
3	LF = Linear Forward
4	LR = Linear Reverse
5	ST = Stop

TRANSITIONS
T1 = Transition 1
T2 = Transition 2
T3 = Transition 3
T4 = Transition 4
T5 = Transition 5
T6 = Transition 6
T7 = Transition 7
T8 = Transition 8

5-6 Transition Field sketch

7-8 Transition Field Sketch

IF TRANSITION IS REACHED IN RUNNING MODE:	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
PIVOT FORWARD	3-LF	3-LF	1-PF	4-LR	3-LF	4-LR		
PIVOT REVERSE	3-LF	3-LF	4-LR	2-PR	4-LR	3-LF		
LINEAR FORWARD	3-LF	3-LF	1-PF	2-PR	3-LF	3-LF		
LINEAR REVERSE	1-PF	2-PR	4-LR	2-PR	4-LR	4-LR		

Figure 187-1

Valley AutoPilot Control Panel

Program Examples

Transition Programming Example

8.0 Programming Transitions

In this example, transitions for a six transition field are programmed See Figure 188-1.

Current Conditions:

- Machine running in Pivot Zone A, 0°, Water ON, Linear Depth 0.50", Pivot Depth 0.50", Forward.
- Stop In Slot set for Pivot Zone A, 0°.
- Stop In Slot is ON.

Program Machine To:

- If Pivot Forward to T2, then Linear Forward to T6.
- If Linear Forward to T6, then Linear Forward to T4.
- If Linear Forward to T4, then Pivot Reverse to T3.
- If Pivot Reverse to T3, then Linear Reverse to T5.
- If Linear Reverse to T5, then Linear Reverse to T1.
- If Linear Reverse to T1, then Pivot Forward to T2.

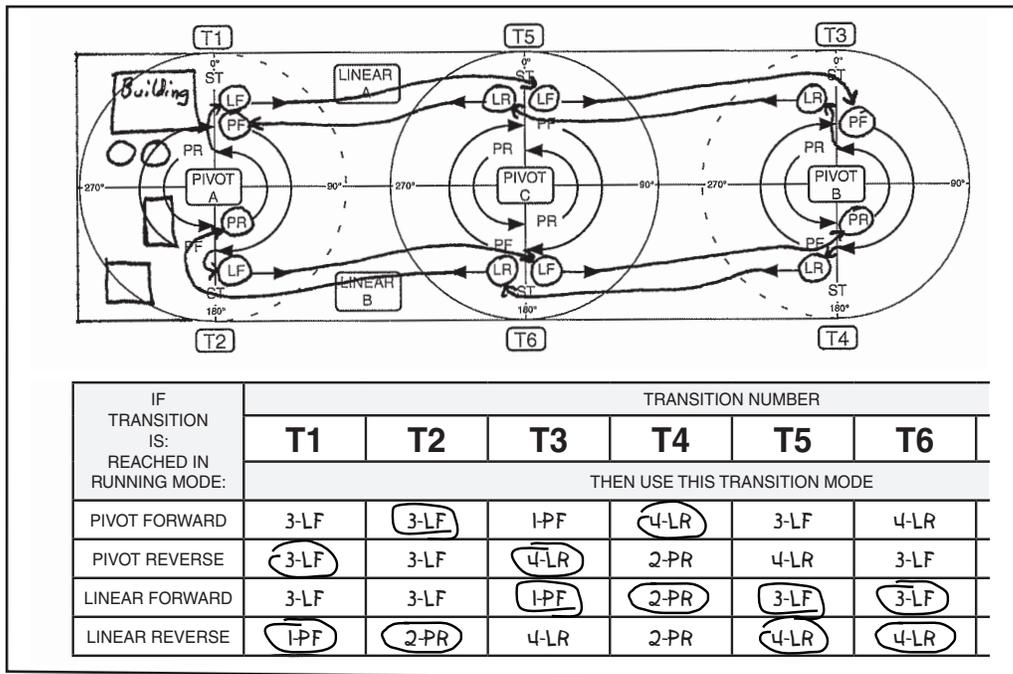


Figure 188-1

To program transitions for example 8.0, do the following:

1. Press , **3**, and **1** to display Transition setup screen. See figure 188-2.

PROGRAM TRANSITION 1

2. Program transition 1 (T1) according to transition programming design form. See figure 188-3.

- (a) Press **1** for Transition 1 setup screen.
- (b) Press **3** for Linear Forward.
- (c) Press **3** for Linear Forward.
- (d) Press **3** for Linear Forward.
- (e) Press **1** for Pivot Forward.

PRESS 1 - 4 FOR STANDARD TRANSITIONS
PRESS 5 - 8 FOR OPTIONAL TRANSITIONS

PRESS ANY OTHER KEY TO EXIT >

Figure 188-2

IF T1 REACHED IN PIVOT FORWARD THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV

IF T1 REACHED IN PIVOT REVERSE THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV

IF T1 REACHED IN LINEAR FORWARD THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV

IF T1 REACHED IN LINEAR REVERSE THEN..
1 PIVOT FOR 3 LINEAR FOR 5 STOP
2 PIVOT REV 4 LINEAR REV
CHANGE TO (X): PRESS # > 1

Figure 188-3

Valley AutoPilot Control Panel

Program Examples

Transition Programming Example

8.0 Programming Transitions (continued)

PROGRAM TRANSITION 2

3. Program transition 2 (T2) according to transition programming design form. See figure 189-1.
 - (a) Press **2** for Transition 2 setup screen.
 - (b) Press **3** for Linear Forward.
 - (c) Press **3** for Linear Forward.
 - (d) Press **3** for Linear Forward.
 - (e) Press **2** for Pivot Reverse.

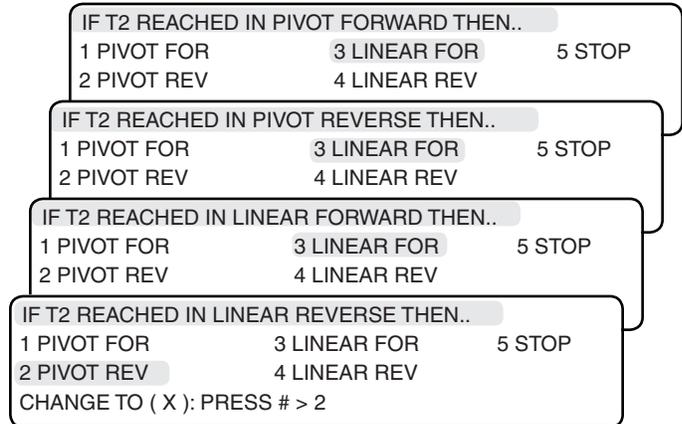


Figure 189-1

PROGRAM TRANSITION 3

4. Program transition 3 (T3) according to transition programming design form. See figure 189-2.
 - (a) Press **3** for Transition 1 setup screen.
 - (b) Press **1** for Pivot Forward.
 - (c) Press **4** for Linear Reverse.
 - (d) Press **1** for Pivot Forward.
 - (e) Press **4** for Linear Forward.

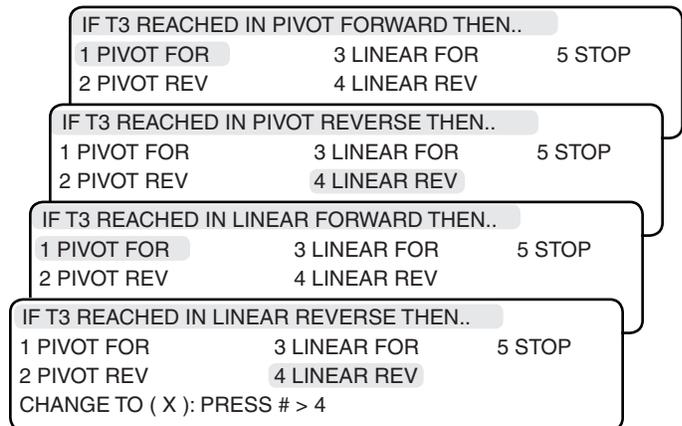


Figure 189-2

PROGRAM TRANSITION 4

5. Program transition 4 (T4) according to transition programming design form. See figure 189-3.
 - (a) Press **4** for Transition 1 setup screen.
 - (b) Press **4** for Linear Reverse.
 - (c) Press **2** for Pivot Reverse.
 - (d) Press **2** for Pivot Reverse.
 - (e) Press **2** for Pivot Reverse.

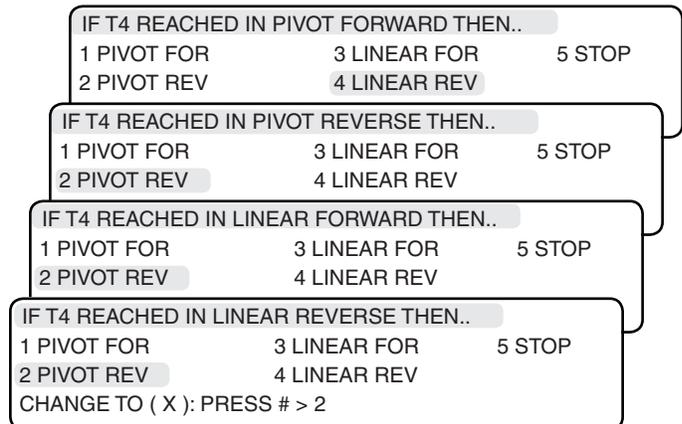


Figure 189-3

Valley AutoPilot Control Panel

Program Examples

Transition Programming Example

8.0 Programming Transitions (continued)

PROGRAM TRANSITION 5

6. Program transition 5 (T5) according to transition programming design form. See figure 190-1.

- (a) Press **5** for Transition 5 setup screen.
- (b) Press **3** for Linear Forward.
- (c) Press **4** for Linear Reverse.
- (d) Press **3** for Linear Forward.
- (e) Press **4** for Linear Reverse.

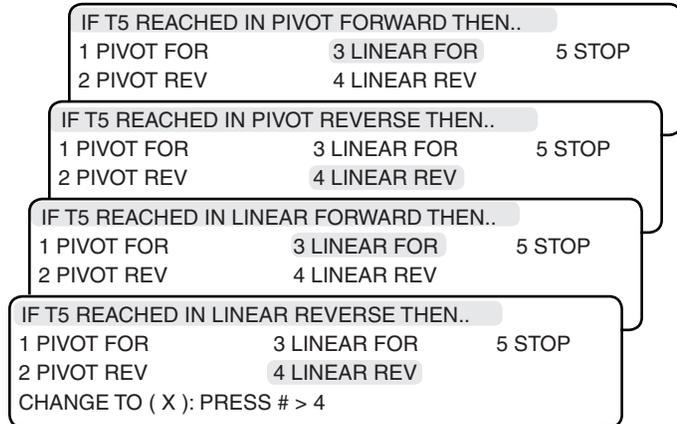


Figure 190-1

PROGRAM TRANSITION 6

7. Program transition 6 (T6) according to transition programming design form. See figure 190-2.

- (a) Press **6** for Transition 6 setup screen.
- (b) Press **4** for Linear Reverse.
- (c) Press **3** for Linear Forward.
- (d) Press **3** for Linear Forward.
- (e) Press **4** for Linear Reverse.

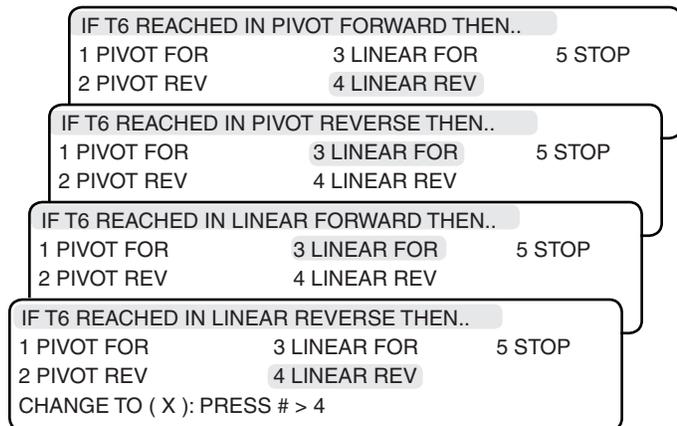


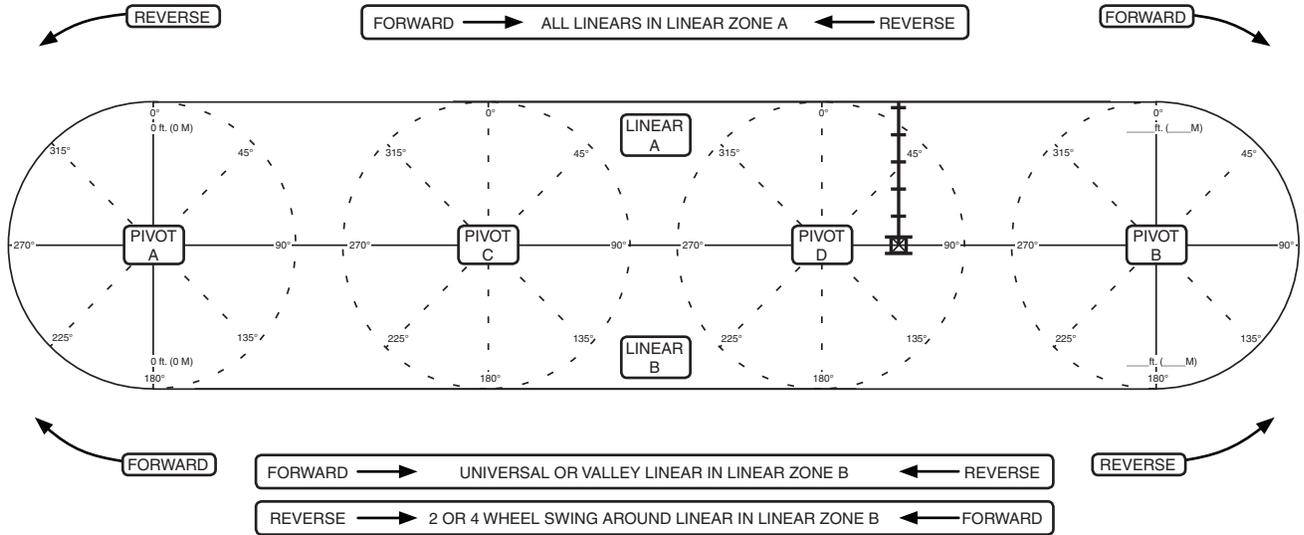
Figure 190-2

Valley AutoPilot Control Panel

Program Examples

Step Program Design Form

System Type _____ Program Number _____ Field I.D. _____



CONDITIONS	STEP NUMBER								
	1	2	3	4	5	6	7	8	9
TIME									
POSITION									
PRESSURE									
DELAY									
FOR/REV									
OTHER CONDITIONS									
ANALOG									
MODULE									
PULSE									
COUNT									
ZONE									
COMMAND KEYS									
WATER ON									
WATER OFF									
PERCENT									
DEPTH									
FORWARD									
REVERSE									
STOP-IN-SLOT ON									
STOP-IN-SLOT OFF									
START									
STOP									
OPTIONS									
AUX1 ON / OFF									
AUX2 ON / OFF									
STARTS									
STOPS									
CYCLES									
MODULE									
AUTOREVERSE									
AUTORESTART									

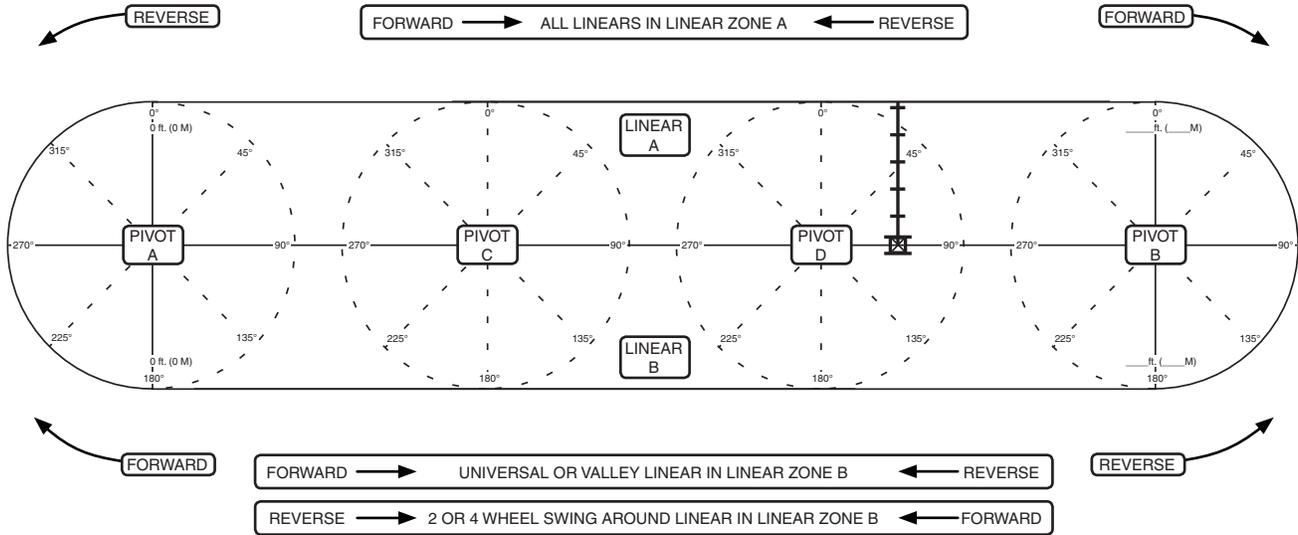
Figure 191-1

Valley AutoPilot Control Panel

Program Examples

Step Program Design Form

System Type _____ Program Number ____ Field I.D. _____



	STEP NUMBER								
CONDITIONS	1	2	3	4	5	6	7	8	9
TIME									
POSITION									
PRESSURE									
DELAY									
FOR/REV									
OTHER CONDITIONS									
ANALOG									
MODULE									
PULSE									
COUNT									
ZONE									
COMMAND KEYS									
WATER ON									
WATER OFF									
PERCENT									
DEPTH									
FORWARD									
REVERSE									
STOP-IN-SLOT ON									
STOP-IN-SLOT OFF									
START									
STOP									
OPTIONS									
AUX1 ON / OFF									
AUX2 ON / OFF									
STARTS									
STOPS									
CYCLES									
MODULE									
AUTOREVERSE									
AUTORESTART									

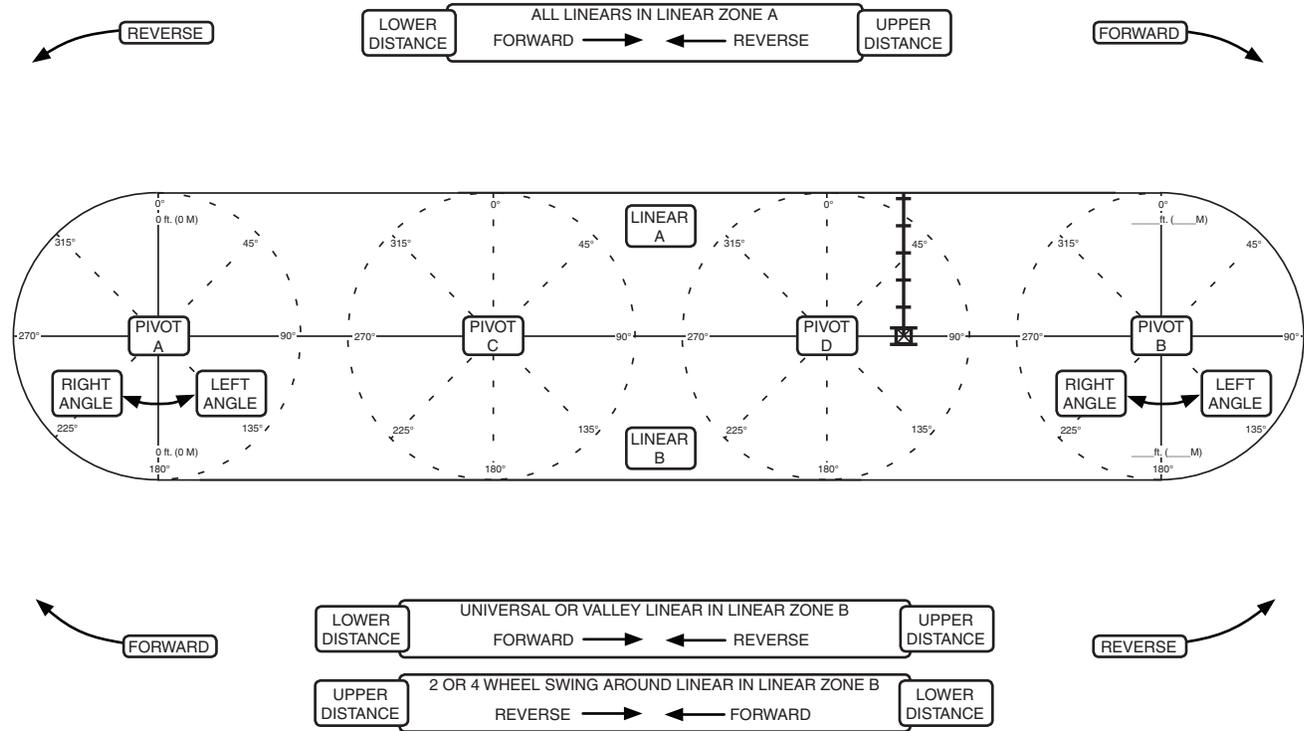
Figure 192-1

Valley AutoPilot Control Panel

Program Examples

Sector Program Design Form

System Type _____ Field I.D. _____



ZONE	SECTOR PROGRAM NUMBER								
	1	2	3	4	5	6	7	8	9
LINEAR A									
LINEAR B									
PIVOT A									
PIVOT B									
PIVOT C									
PIVOT D									
SECTOR									
LOWER DISTANCE									
UPPER DISTANCE									
LEFT ANGLE									
RIGHT ANGLE									
DIRECTION									
BOTH									
FORWARD									
REVERSE									
COMMANDS									
WATER ON									
WATER OFF									
PERCENT									
DEPTH									
OPTIONS									
AUX1 ON / OFF									
AUX2 ON / OFF									
MODULE									

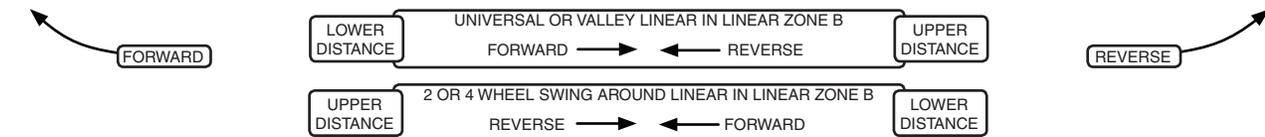
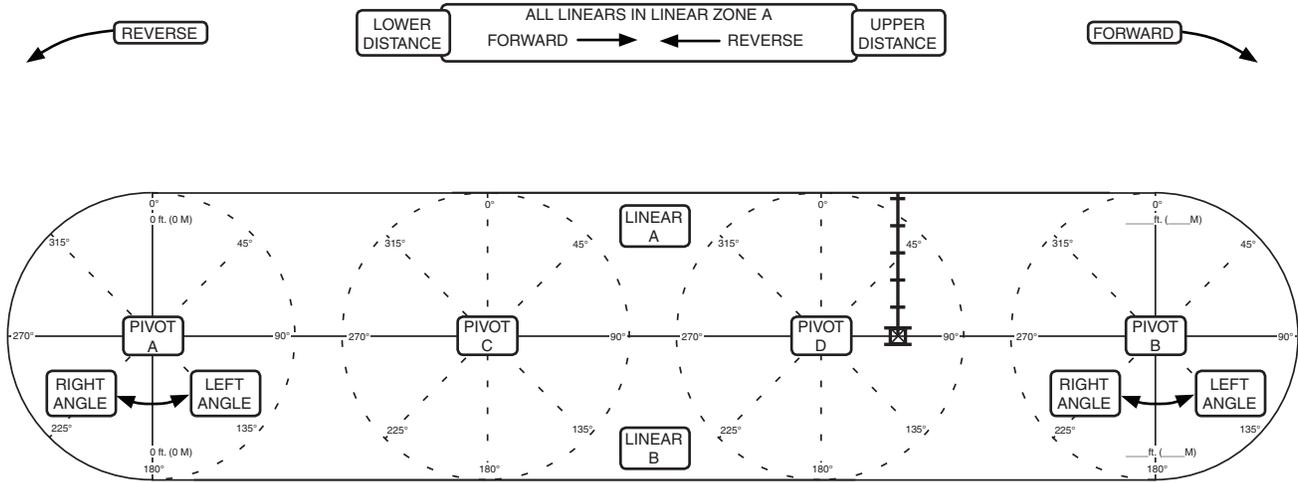
Figure 193-1

Valley AutoPilot Control Panel

Program Examples

Sector Program Design Form

System Type _____ Field I.D. _____



ZONE	SECTOR PROGRAM NUMBER								
	1	2	3	4	5	6	7	8	9
LINEAR A									
LINEAR B									
PIVOT A									
PIVOT B									
PIVOT C									
PIVOT D									
SECTOR									
LOWER DISTANCE									
UPPER DISTANCE									
LEFT ANGLE									
RIGHT ANGLE									
DIRECTION									
BOTH									
FORWARD									
REVERSE									
COMMANDS									
WATER ON 									
WATER OFF 									
PERCENT 									
DEPTH 									
OPTIONS 									
AUX1 ON / OFF									
AUX2 ON / OFF									
MODULE									

Figure 194-1

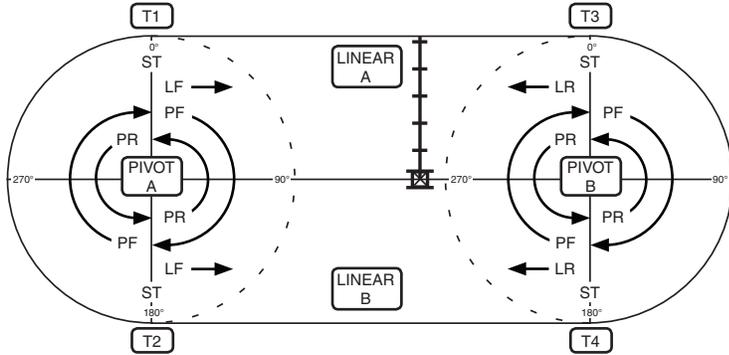
Valley AutoPilot Control Panel

Program Examples

Transition Program Design Form AUL/VSAL System Type Only

Field I.D. _____

1-4 Transition Field Sketch

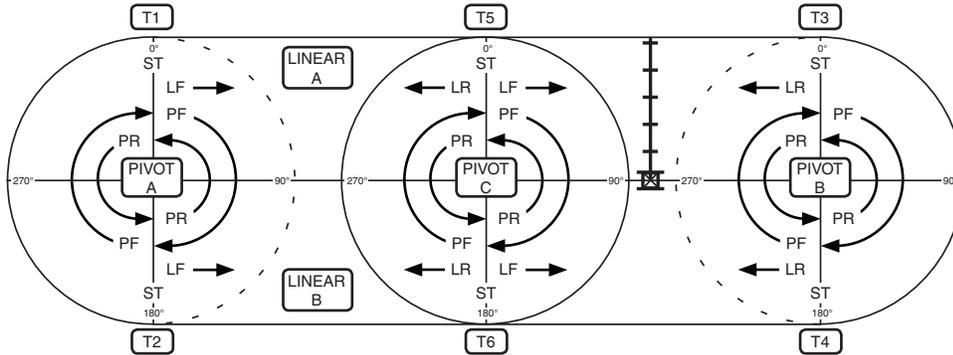


TRANSITION GUIDELINES

- In all situations:
 - DO NOT USE Linear Reverse from T1 or T2.
 - DO NOT USE Linear Forward from T3 or T4.
- If the guidance system is above ground cable or the water delivery system is a ditch.
 - DO NOT USE Pivot Forward from T1, T4, T5, T6, T7, or T8.
 - DO NOT USE Pivot Reverse from T2, T3, T5, T6, T7, or T8.

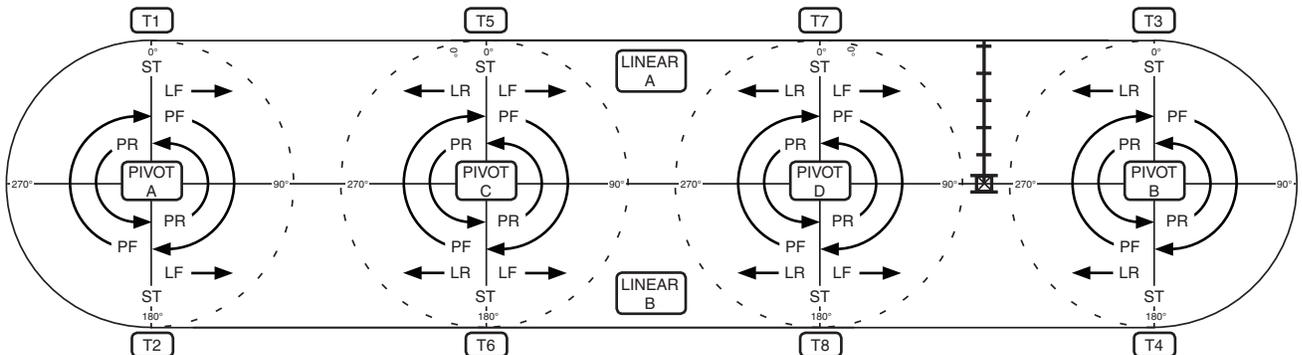
#	MODES
1	PF = Pivot Forward
2	PR = Pivot Reverse
3	LF = Linear Forward
4	LR = Linear Reverse
5	ST = Stop

5-6 Transition Field sketch



- TRANSITIONS**
 T1 = Transition 1
 T2 = Transition 2
 T3 = Transition 3
 T4 = Transition 4
 T5 = Transition 5
 T6 = Transition 6
 T7 = Transition 7
 T8 = Transition 8

7-8 Transition Field Sketch



IF TRANSITION IS REACHED IN RUNNING MODE:	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
	THEN USE THIS TRANSITION MODE							
PIVOT FORWARD								
PIVOT REVERSE								
LINEAR FORWARD								
LINEAR REVERSE								

Figure 195-1

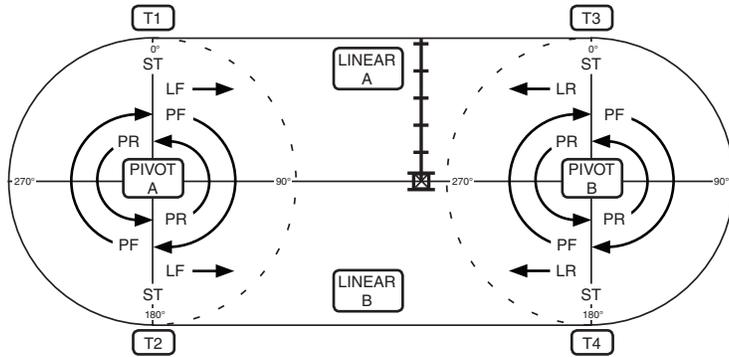
Valley AutoPilot Control Panel

Program Examples

Transition Program Design Form AUL/VSAL System Type Only

Field I.D. _____

1-4 Transition Field Sketch

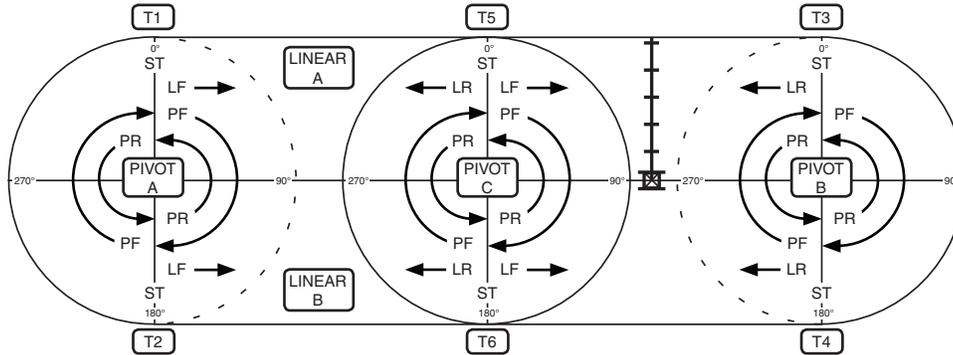


TRANSITION GUIDELINES

- In all situations:
 - DO NOT USE Linear Reverse from T1 or T2.
 - DO NOT USE Linear Forward from T3 or T4.
- If the guidance system is above ground cable or the water delivery system is a ditch.
 - DO NOT USE Pivot Forward from T1, T4, T5, T6, T7, or T8.
 - DO NOT USE Pivot Reverse from T2, T3, T5, T6, T7, or T8.

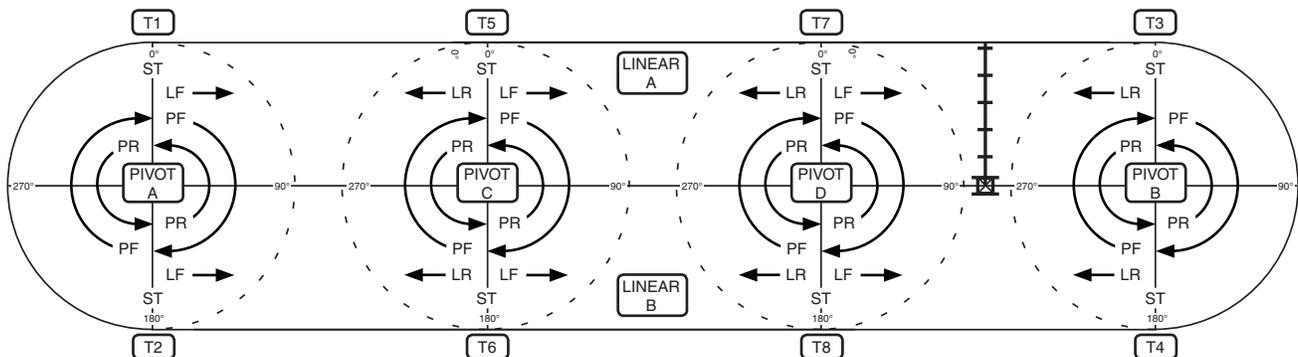
#	MODES
1	PF = Pivot Forward
2	PR = Pivot Reverse
3	LF = Linear Forward
4	LR = Linear Reverse
5	ST = Stop

5-6 Transition Field sketch



- TRANSITIONS
 T1 = Transition 1
 T2 = Transition 2
 T3 = Transition 3
 T4 = Transition 4
 T5 = Transition 5
 T6 = Transition 6
 T7 = Transition 7
 T8 = Transition 8

7-8 Transition Field Sketch



IF TRANSITION IS REACHED IN RUNNING MODE:	TRANSITION NUMBER							
	T1	T2	T3	T4	T5	T6	T7	T8
	THEN USE THIS TRANSITION MODE							
PIVOT FORWARD								
PIVOT REVERSE								
LINEAR FORWARD								
LINEAR REVERSE								

Figure 196-1

Valley AutoPilot Control Panel

Program Examples