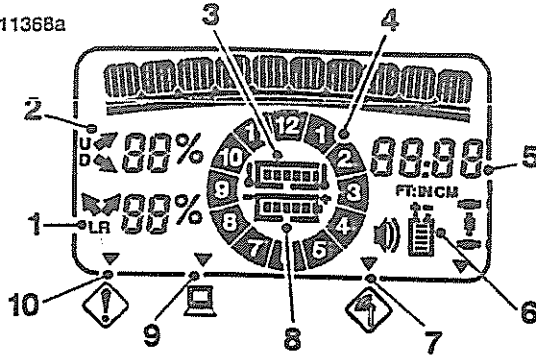


Display Overview

ss11368a



1. Left/right indicator and percentage display
2. Pitch indicator and percentage display
3. Beacon temperature display
4. Roll display
5. Depth estimate (or pipe number*) display
6. 90D battery status display
7. Radio indicator
8. Beacon battery status display
9. RS-232 Not Available indicator*
10. Data error indicator

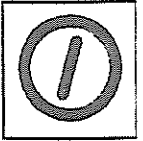
* with Bore Path option

Control Overview

General

On/Off

Press to turn unit on or off.



Channel Select

Press and release to display current channel. Press and hold to switch channels (if equipped with dual channel radio). Unit defaults to channel one each time unit is powered up.



Special

Roll Stop (not yet available)

This feature is not yet available.



Control Overview

Mapping

Several controls allow bore data to be kept on a remote logging computer/map display. These buttons and their functions are described below.

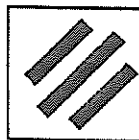
Store (STR)

Press to store currently displayed data. After 1.5 seconds, data is transmitted over the serial interface. Pipe number will appear in numeric display if data was stored.



Delete (DEL)

Press to delete last stored data. After 1.5 seconds, a command is issued over serial interface. Previous pipe number will appear in numeric display if data was deleted.



Query

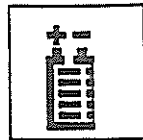
Press to view last stored data. After 1.5 seconds, a command is issued over serial interface. Data about previous pipe number will appear in display.



Troubleshooting

Low 90D Battery Status

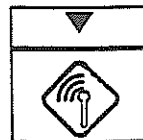
Flashing outline indicates low battery (3-4 hours remaining life). If outline flashes at power up, replace batteries.



Radio Indicator

With 66TKRW on, arrow indicates reception of tracker radio.

With tracker off or on different channel, continuous arrow indicates possible interfering signals on transmitting channel.



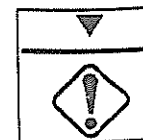
RS-232 Not Available

Arrow appears if a STORE or QUERY command is executed and no storage device is available when using Bore Path option.



Data Error

Arrow indicates incorrect framing of received signal. LCD data is not updated.



FCC Statement

This equipment has been tested and found to comply with the limits for a Class A device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded cables and I/O cords must be used for this equipment to comply with the relevant FCC regulations.

Changes or modifications not expressly approved in writing by The Charles Machine Works, Inc. may void the user's authority to operate this equipment.

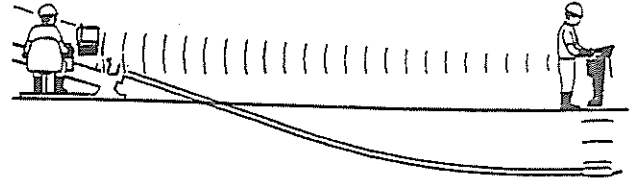
Subsite® is a registered trademark of
The Charles Machine Works, Inc.

90D 5/97

S790-031 (A)

90D Remote Display

The 90D is a remote display that displays beacon information received by tracker directly to boring unit. It is designed for use with a 66TKRW tracker with two channel UHF radio and 80 series beacons. It is also equipped with an RS232 port for Bore Path option.



ss1134a

Maximum range of the 90D display is 2000 ft (610 m).
Interference could appear at maximum range.

Specifications

Module Only

- **Operating weight:** 2.5 lb (1.1 kg)
- **Power input:** 6.5 V dc - 16V dc at approx. 150ma
- **Interface connectors:** DB-15P (D-series sub-miniature male)

Module with Case

- **Operating weight:** 6.5 lb (3 kg)
- **Battery:** 6 "C" cell alkaline
- **Interface:** MS5015 (7 pin)
- **Antenna:** TNC female

Display

roll	depth	beacon temperature
pitch	left/right	beacon battery status
radio link indicator		borepath display indicator

Radio

- **Type:** two channel, dual conversion, narrow-band FM
- **Frequency range:** 420-470 Mhz
- **Sensitivity:** -110dbm for 12db SINAD (typical)

Set Up Optional Case

Install batteries

1. Loosen screws on battery cover.
2. Insert 6 "C" cell alkaline batteries.
3. Close cover and tighten screws.

Position unit

Place unit 2-3 ft (.5-1 m) above ground near boring unit operator's station, or in provided mount.

Operation Safety

IMPORTANT: Read tracker operator's manual and beacon instructions before using 90D.



Explosion possible. Never operate transmitters near explosive devices or blasting operations.

NOTICE: Operating two-way radios within 2 ft (.6 m) of either remote display or tracker can cause erratic operation.