

 **DITCH WITCH**
ELECTRONIC GUIDANCE EQUIPMENT

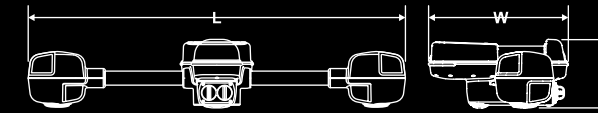


GUESSWORK IS OFFICIALLY DEAD.



DITCH WITCH 8500 Electronic Guidance System

The Ditch Witch® 8500 electronic guidance system arms you with the vital information you need to conquer even the toughest bores. The 8500 offers unparalleled beacon location capability, depth readings to within fractions of an inch, and an incredibly intuitive user interface.



SPECIFICATIONS

DIMENSIONS	U.S.	METRIC
Length	12.8 in	325 mm
Height	31.5 in	800 mm
Width	6 in	150 mm

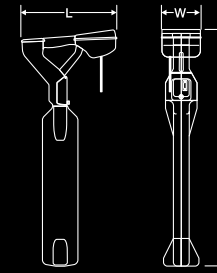


KEY FEATURES

- (Photograph A) Icon- and menu-driven screens are intuitive and easy to navigate; straightforward onscreen graphics reduce training time.
- Provides offset locating information so you can track around buildings and other obstacles, or along the side of a road while drilling under it.
- Gives true depth readings even on inclines to 20°, so you can track up the sides of ditches and over uneven terrain.
- USB connection and SD card in the remote display make data sharing easy.
- Industry-exclusive “drill-thru” mode allows you to place the tracker at a given point and drill to it and beyond it on a calculated path.
- Provides 60 roll positions on the clock face for unprecedented accuracy and straighter bores.
- A second, ultra-low 1.75-kHz frequency sees through high-noise interference like rebar and overhead lines and can be switched downhole and on the fly.
- Molded, soft-touch handgrip on the well-balanced 8500TK keeps operators comfortable.
- With seven radio channels to choose from, the risk of cross-talk with nearby drills and electronic devices is greatly reduced.
- Accepts rechargeable or standard C-cell alkaline batteries and has longer battery life than anything in its class.

DITCH WITCH 752 Tracker, 752 Display

Location, depth, roll angle, pitch, beacon temperature, battery status—the 752 Tracker and 752 Display see all and tell all. This lightweight and exceptionally durable system works with Ditch Witch® beacons to provide the vital information you need for a successful installation.



SPECIFICATIONS

DIMENSIONS	U.S.	METRIC
Length	12.8 in	325 mm
Height	31.5 in	800 mm
Width	6 in	150 mm



KEY FEATURES

- With nine radio channels and two beacon frequencies to choose from, the 752 is the hardest-working, most versatile guidance system in its class.
- The 752 Tracker provides comprehensive guidance data for shallow bores, deep bores, or a combination of the two, using walkover beacon tracking, remote guidance and line locating capabilities.
- The 752 Display can receive data up to 2000 feet (610 m), store up to ten jobs of 254 pipes each, and provide downloads to the TMS Plus system.
- The 752 Tracker tracks bore depths of nine inches to 70 feet (229 mm to 21 m).
- (Photograph A) The water- and shock-resistant 752 Tracker is made with high-impact Xenoy® plastic.
- The 752 Display provides left/right arrow indicators as well as a distance estimate from the tracker to the beacon to make tracking easier.
- Improved beacon temperature alert; 752 Display shows beacon temperature in degrees and alerts the operator to help prevent overheating.
- Change from one frequency to the other on the fly, downhole, without interrupting the progress of your bore.
- (Photograph B) The 752 Tracker's 12-segment clock face indicates the roll angle of the tool face; pitch angle is displayed using both up/down arrows and numerical percentages.

DITCH WITCH Beacons

Ditch Witch® beacons are as durable as they are dependable in providing bore-path data. Rubber end caps, secure hardware battery contacts, and double springs on battery fittings provide protection from shock and vibration, and enhance overall performance. Trust our beacons to look out for your best interests.



KEY FEATURES

- Self-contained electronic pitch sensors eliminate the need for mechanical/electrical parts, resulting in improved reliability and more stable operation for smooth pitch readings.
- The 86BG measures and displays pitch in 0.1% increments.
- The 88B, our most rugged tracking beacon, is reinforced with a shock-resistant composite housing, larger antenna, and stiffer battery springs to minimize intermittent signals.
- Beacons are repairable.
- Innovative design isolates beacons from high-pressure drilling fluids.
- Electronic trackers present beacon data in a clear, easy-to-understand LCD readout.
- When used with the 752 Tracker, the 86B can transmit from depths of 0.3 to 50 feet (0.1 to 15.2 m); for deeper boring, the 86BH provides readings to 70 feet (21.3 m) or more.*
- All Ditch Witch directional beacons transmit roll angle, beacon temperature, beacon battery status, and pitch information as part of the HDD guidance system.
- The Ditch Witch organization supports all of its products with superior-quality parts, service and training, all available from a worldwide network of Ditch Witch dealers.

*Units are calibrated to these tolerances under test field conditions. Actual field conditions may cause signal distortions or may contain noise sources that result in depth estimates that vary from these figures.

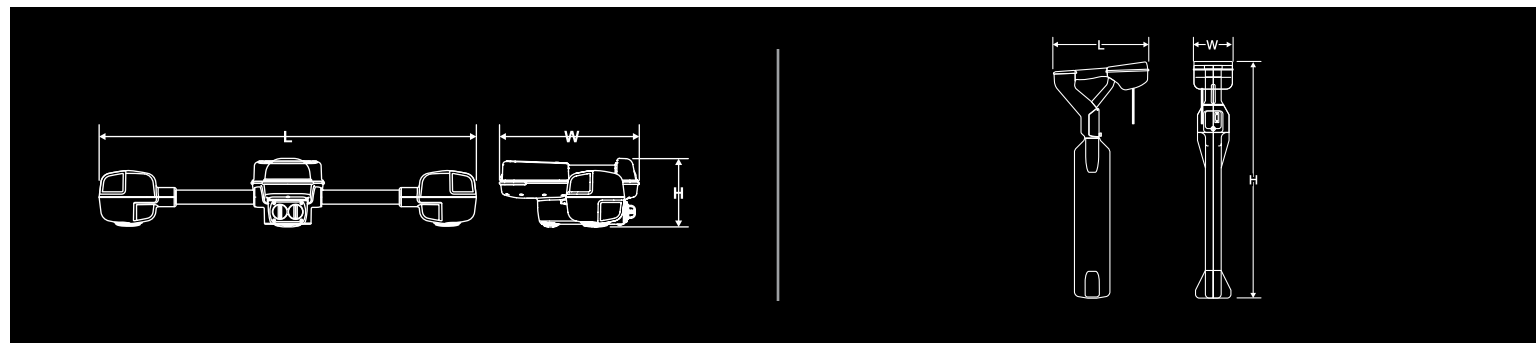
DITCH WITCH Trac Management Systems Plus

Ditch Witch equipment engineers understand better than anyone that planning a bore in advance saves time, money, and reduces complications. With Ditch Witch TMS Plus, you can plan the bore, monitor its real-time progress, and print out a completed survey or as-built map when you're done.



KEY FEATURES

- Intuitive menus and online user guide make the software easy to use.
- Can create multiple bore plans for the same job based on different units or paths.
- Works with Ditch Witch guidance equipment to create a record of the installed bore path.
- Left/right planning feature offers bore planning in directions other than a straight line.
- Records the drill head position each time a new drill pipe is placed in the ground.
- Compiles pipe information such as pipe number, depth estimate, drill head roll angle, pitch, directional beacon temperature and battery level, date and time.
- Provides quick-reference information on bend radius for more efficient use of drill pipe and installed product.
- Records the position of the actual product during backreaming.
- Supports five languages—English, German, French, Spanish and Italian—and adapts to different international settings.
- One comprehensive CD contains the installation/removal program, TMS Plus program, and online TMS Plus user's guide.
- Standard system requirements: Intel® Pentium processor (or equivalent), 200 MHz (min.) running Microsoft® Windows® 98 (or later), ME, XP, or Vista®; 16 MB or more RAM; CD ROM drive; and mouse or touchpad.



8500 TRACKER

DIMENSIONS	U.S.	METRIC
WIDTH	13.2 IN	335 MM
HEIGHT	6.4 IN	163 MM
LENGTH	35.5 IN	902 MM
WEIGHT (W/ BATTERIES)	8.3 LB	3.8 KG
TEMPERATURE RANGE	-4° F TO 122° F	-20° C TO 50° C
OPERATING MODES	11.2K BEACON, 1.75K BEACON	

MAXIMUM LOCATING RANGE

BEACON	70 FT	18.3 M
LINE	N/A	

BEACON DEPTH ESTIMATE TOLERANCES

±3	30 FT	9.1 M
±10%	BEYOND 30 FT BEYOND 9.1 M	

POWER SOURCE

NUMBER/TYPE	6 C-CELL ALKALINE	
BATTERY LIFE	8 HOURS @ 68° F / 20° C	
BATTERY SAVER	UNIT SHUTS OFF AFTER 5 MINUTES IF NO KEY IS PRESSED AND NO BEACON PRESENT	

RADIO

COMMUNICATION RANGE	2000 FT	610 M
CHANNELS	14	

8500 DISPLAY

DIMENSIONS (MODULE ONLY)	U.S.	METRIC
WIDTH	5.5 IN	139.7 MM
HEIGHT	4.7 IN	119.4 MM
DEPTH	3.3 IN	83.8 MM
WEIGHT	2.3 LB	1 KG
POWER SOURCE	6V - 14V DC @ APPROX 150 MA	
DATA INTERFACE	USB-B OR SD CARD	

DIMENSIONS (MODULE W/ CASE)

WIDTH	9.3 IN	236.2 MM
HEIGHT	7.2 IN	182.9 MM
DEPTH	6 IN	152.4 MM
WEIGHT	6.3 LB	2.9 KG

POWER SOURCE

BATTERY TYPE	6 C-CELL ALKALINE	
BATTERY LIFE	APPROX 35 HOURS	
DATA INTERFACE	USB-B OR SD CARD	
ANTENNA CONNECTOR	TNC FEMALE	

RADIO

COMMUNICATION RANGE	2000 FT	610 M
CHANNELS	14	
TEMPERATURE RANGE	-4° F TO 122° F	-20° C TO 50° C

752 TRACKER

DIMENSIONS	U.S.	METRIC
LENGTH	12.8 IN	325 MM
HEIGHT	31.5 IN	800 MM
WIDTH	6 IN	150 MM
WEIGHT (W/ BATTERIES)	5.5 LB	2.5 KG
TEMPERATURE RANGE	-4° F TO 122° F	-20° C TO 50° C
OPERATING MODES	29K BEACON, 12K BEACON, 60 HZ POWER, 50 HZ POWER, 8 KHZ LINE	

MAXIMUM LOCATING RANGE

BEACON	9.6 IN - 100 FT	20 MM - 30 M
LINE	0 - 10 FT	0 - 3 M

BEACON DEPTH ESTIMATE TOLERANCES

±4 IN/10 CM	10 FT	3 M
±5	10 - 20 FT	3 - 6.1 M
±10%	BEYOND 20 FT BEYOND 6.1 M	

LINE LOCATION DEPTH ESTIMATE TOLERANCES

ACTIVE MODE		
±3%	10 FT	3 M
PASSIVE MODE		
±5%	6 FT	1.8 M
±10%	10 FT	3 M

POWER SOURCE

NUMBER/TYPE	6 C-CELL ALKALINE	
BATTERY LIFE	20 HOURS @ 68° F / 20° C	
BATTERY SAVER	UNIT SHUTS OFF AFTER 5 MINUTES IF NO KEY IS PRESSED AND NO BEACON PRESENT	

RADIO

COMMUNICATION RANGE	2000 FT	610 M
CHANNELS	9	

752 BEACONS

	LENGTH	WORKING DIAMETER	WEIGHT	ROLL ANGLE (# OF POS'S)	PITCH	POWER SOURCE	MAXIMUM TEMPERATURE
86B	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	12	1%	2 C-CELL ALKALINE*	176° F / 80° C
86BH	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	12	1%	2 C-CELL ALKALINE*	176° F / 80° C
86BV2	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	12	1%	2 C-CELL ALKALINE*	176° F / 80° C
86BGV2	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	12	0.1%	2 C-CELL ALKALINE*	176° F / 80° C
86BHL	26.5 IN / 673 MM	2.1 IN / 54 MM	6.1 LB / 2.8 KG	12	1%	2 C-CELL ALKALINE*	176° F / 80° C
88B	11.5 IN / 292 MM	0.9 IN / 22 MM	6.6 OZ / 187 G	12	1%	1 AA-CELL ALKALINE	176° F / 80° C
88BAT	11.5 IN / 292 MM	0.9 IN / 22 MM	6.6 OZ / 187 G	12	1%	1 AA-CELL ALKALINE	176° F / 80° C

8500 BEACONS

	LENGTH	WORKING DIAMETER	WEIGHT	ROLL ANGLE (# OF POS'S)	PITCH	POWER SOURCE	MAXIMUM TEMPERATURE
850B	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	60	1%	2 C-CELL ALKALINE*	176° F / 80° C
850BG	17.8 IN / 452 MM	1.9 IN / 48 MM	2.2 LB / 1 KG	60	0.1%	2 C-CELL ALKALINE*	176° F / 80° C

	FREQUENCY	RANGE	BATTERY LIFE
850B			
-SFLP OPT.	11,200 HZ	50 FT / 15.24 M	30 HR
-SFHP OPT.	11,200 HZ	60 FT / 18.3 M	20 HR
-DFLP OPT.	11,200 HZ	50 FT / 15.24 M	30 HR
	1750 HZ	30 FT / 9.1 M	30 HR
-DFHP OPT.	11,200 HZ	60 FT / 18.3 M	20 HR
	1750 HZ	40 FT / 12.2 M	20 HR

850BG			
-SFLP OPT.	11,200 HZ	50 FT / 15.24 M	30 HR
-SFHP OPT.	11,200 HZ	60 FT / 18.3 M	20 HR
-DFLP OPT.	11,200 HZ	50 FT / 15.24 M	30 HR
	1750 HZ	30 FT / 9.1 M	30 HR
-DFHP OPT.	11,200 HZ	60 FT / 18.3 M	20 HR
	1750 HZ	40 FT / 12.2 M	20 HR

	FREQUENCY	RANGE	BATTERY LIFE
86B	29,430 HZ	50 FT / 15.24 M	60 HR
86BH	29,430 HZ	70 FT / 21.3 M	16 HR

86BV2			
-SFLP OPT.	29,430 HZ	50 FT / 15.24 M	40 HR
-SFHP OPT.	29,430 HZ	70 FT / 21.3 M	14 HR
-DFLP OPT.	29,430 HZ	50 FT / 15.24 M	40 HR
	12,030 HZ	50 FT / 15.24 M	40 HR
-DFHP OPT.	29,430 HZ	70 FT / 21.3 M	14 HR
	12,030 HZ	70 FT / 21.3 M	14 HR

86BGV2			
-SFLP OPT.	29,430 HZ	50 FT / 15.24 M	40 HR
-SFHP OPT.	29,430 HZ	70 FT / 21.3 M	14 HR
-DFLP OPT.	29,430 HZ	50 FT / 15.24 M	40 HR
	12,030 HZ	50 FT / 15.24 M	40 HR
-DFHP OPT.	29,430 HZ	70 FT / 21.3 M	14 HR
	12,030 HZ	70 FT / 21.3 M	14 HR

86BHL	29,430 HZ	70 FT / 21.3 M	45 HR
88B	29,430 HZ	30 FT / 9.14 M	18 HR
88BAT	29,430 HZ	30 FT / 9.14 M	22 HR

SPECIFICATIONS ARE GENERAL AND SUBJECT TO CHANGE WITHOUT NOTICE. IF EXACT MEASUREMENTS ARE REQUIRED, EQUIPMENT SHOULD BE WEIGHED AND MEASURED. DUE TO SELECTED OPTIONS, DELIVERED EQUIPMENT MAY NOT NECESSARILY MATCH THAT SHOWN. *CAN BE SUBSTITUTED WITH CC LITHIUM BATTERY FOR AVERAGE BATTERY LIFE GAIN OF 3X OR MORE.



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