



PETROLEUM INSTRUMENTS CO., INC.

1312 SE 25TH STREET (73129)

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(405)670-6200 • FAX (405)670-6233

WWW.PETROLEUMINSTRUMENTSCO.COM



DRIFT INDICATOR

This is the new Sure Shot . . . a streamlined model designed to meet all requirements of modern drilling operations, especially those in which small diameter drill pipe is employed. The instrument proper is only 1 1/8" O.D.; the barrel inside with which it is run is 1 1/2" O.D. This permits its use inside the small pipe employed in slim hole drilling; yet its accuracy is not impaired when it is used inside even the largest sizes of drill pipe.



The Model "A" Sure Shot may be run on a sand line, Halliburton line or dropped free and retrieved with fishing tools. In the latter instance, a new type of shock absorber spring, coupled with the extremely light weight of the barrel and instrument, eliminate the danger of damage from impact. The method of running has no effect upon the operation of the instrument or its accuracy.

Throughout its design, the Model "A" Sure Shot stresses ruggedness and reliability. The instrument is cushioned inside the outer barrel, which in turn is equipped with an efficient shock absorber. Resilient stabilizers on the outer barrel center the tool inside the pipe and prevent "whip" as it is being run. The stabilizers are easily replaceable.

The new SMALL DIAMETER SURE SHOT

RELIABLE UNDER ALL CONDITIONS

The Sure Shot utilizes the oldest and most positive of all known methods of measuring slope angles—the simple plumb bob. Its operation does not involve the use of ink, acid, batteries or photographic materials, and neither temperature, pressure or other bottom hole forces or elements will affect the recordings.

SIMPLE TO USE

Only six simple steps are required to prepare and run the Model "A" Sure Shot. These can be performed by any member of the crew, with out need of holding the instrument in a vertical position during the preparatory procedures. To run the Model "A" Sure Shot, it is necessary only to:

1. Pull out the Gear Rack to the calculated time it will require the instrument to reach the bottom, then return the Rack stem to its original position. (The Gear Rack stem is calibrated in increments of one minute for easy, accurate selection of time.) Care should be taken not to use excessive force when setting for maximum time.
2. Remove Disk Retainer at bottom of clock instrument and insert a Recording Disk.
3. Snap Disk Locking Spring in place on top of the Recording Disk, and replace the Disk Retainer.
4. Drop the instrument into the Outer Barrel on top of lower shock absorber spring, insert upper shock absorber spring above the instrument, and replace the top of the Outer Barrel.
5. Run the tool as desired, either by dropping or on a wire line.
6. To remove Recording Disk after running, pull Gear Rack out once again before removing Disk Retainer and Disk.

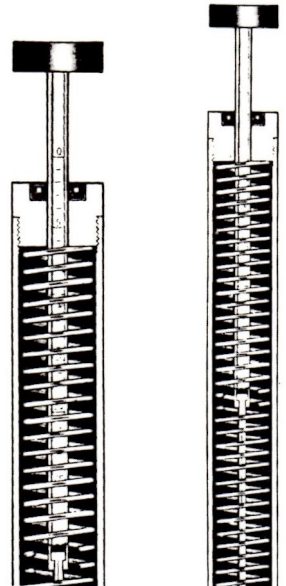
PERMANENT RECORDS

After the selected time has elapsed, the plumb bob will be released, and the point at its center will perforate the Recording Disk. The degree of slope angle then is easily determined by direct reading of the Disk, with the angle indicated by the perforation.

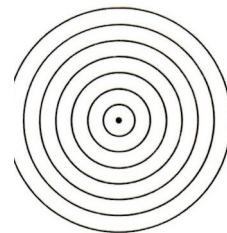
This type of recording is absolutely permanent: It will not grow dim with time, nor can it be distorted or destroyed by heat, water, oil or other fluids.

AVAILABLE FOR PURCHASE

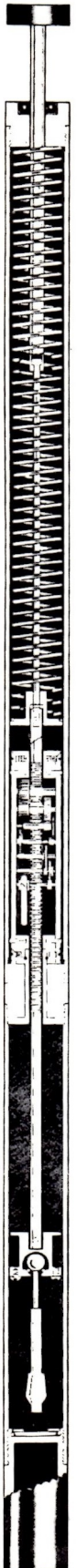
The Model "A" Sure Shot is available for purchase by all domestic and foreign operators. Recording Disks in individual envelopes are available for immediate delivery.



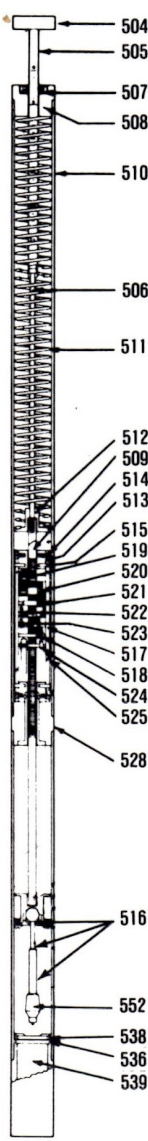
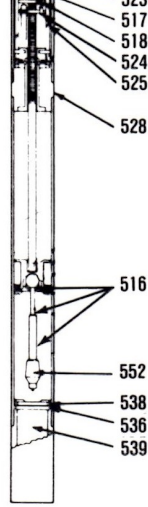

The Gear Rack of the Model "A" Sure Shot is calibrated in increments of one minute, making it simple and easy to select the time required for the instrument to reach bottom.



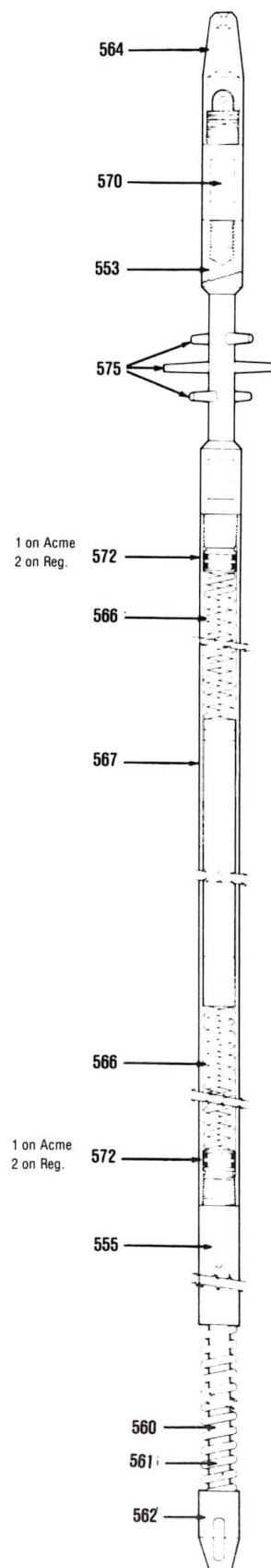
Recordings are made on an aluminum disk for permanent legibility.



PARTS LIST

	Acme Thread Part #	Description
	504	Time Setting Cap
	505	Time Setting Rod
	506	Inner Time Setting Rod
	507	Seal
	508	Packing Plug
	509	Gear Rack
	510	Clock Barrel
	511	Clock Spring
	512	Spring Seat
	513	Upper Bridge Support
	514	Bridge Screws (8)
	515	Bridge Dowels (8)
	516	Plumb Bob Complete 7°
	548	Plumb Bob Complete 14° (not shown)
	517	Bridge Left Side
	518	Bridge Right Side
	519	Clock Gear, Position 1 Complete
	520	Clock Gear, Position 2 Complete
	521	Clock Gear, Position 3 Complete
	522	Clock Gear, Position 4 Complete
	523	Clock Gear, Position 5 Complete
	524	Clock Gear, Position 6 Complete
	525	Clock Gear, Position 7 Complete
	528	Lower Bridge Support
	532	Cage Top Piece (not shown)
	533	Cage Rods (3) (not shown)
	534	Cage Base (not shown)
	535	Cage Pin (not shown)
	590	Cage Rod Nuts (3) (not shown)
	536	Recording Disks 7°
	537	Recording Disks 14° (not shown)
	538	Disk Locking Spring
	539	Disk Retainer 7°
	540	Disk Retainer 14° (not shown)
	552	Lower Barrel
	554	Go Devil Top Sub
	607	Go Devil Shock Absorber Complete
	557	Fluid Barrel
	559	Plunger Sub
	560	Go Devil Plunger
	561	Go Devil Spring
	562	Bull Plug
	565	Protector Cap
	566	Shock Absorber Spring (2)
	568	Outer Barrel
	571	Halliburton Sub
	583	"O" Ring Seals (2)
		Piston "O" Ring (Aluminum Only (1)
		Plunger "O" Ring (Aluminum Only (1)
	574	Instrument Box
	608	Baffle Plate 4 1/2" Reg.
	609	Baffle Plate 3 1/2" Reg.
	575	Stabilizer Fingers Set (3)
	622	Spear Head Adaptor Size 00
	623	Spear Head Adaptor Size 0
	624	Spear Head Adaptor Size 2
	625	Spear Head Adaptor Reed
	626	Spear Head Adaptor Hunt
	627	Spear Head Adaptor Reed PAA
	628	Special Rope Socket
	586	Sinker Bar 5 foot
	631	Wire Line Overshot X-Over Sub
	634	Wire Line Overshot
	632	Special Bull Plug
	502	Model A Instrument Only 7°
	503	Model A Instrument Only 14°
	610	Model A Sure Shot complete 7°
	611	Model A Sure Shot complete 14°

All new instruments are made with Acme Thread



DRIFT TABLE

Horizontal Drift and Loss in Vertical Depth per 100 Feet Measured
Depth for Various Angles of Inclination from the Vertical.

ANGLE	DRIFT	LOSS	ANGLE	DRIFT	LOSS
1/2	0.87	0.00	11	19.08	1.84
1	1.75	0.02	12	20.79	2.19
1 1/2	2.62	0.03	13	22.50	2.56
2	3.49	0.06	14	24.19	2.97
2 1/2	4.36	0.10	15	25.88	3.41
3	5.23	0.14	16	27.56	3.87
3 1/2	6.10	0.19	17	29.24	4.37
4	6.98	0.24	18	30.90	4.89
4 1/2	7.85	0.31	19	32.56	5.45
5	8.72	0.38	20	34.20	6.03
6	10.45	0.55	22	37.46	7.28
7	12.19	0.75	24	40.67	8.65
8	13.92	0.97	26	43.84	10.12
9	15.64	1.23	28	46.95	11.71
10	17.36	1.52	30	50.00	13.40

SALES AND SERVICE

Sure Shot Drift Indicators are available. However, when major service is required for immediate delivery from Oklahoma City, it is recommended that the instrument be returned to Oklahoma City. Repair parts will be furnished as specified to those who desire to do their own maintenance work. All correspondence should be addressed to our Oklahoma City office.

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