TOPCON

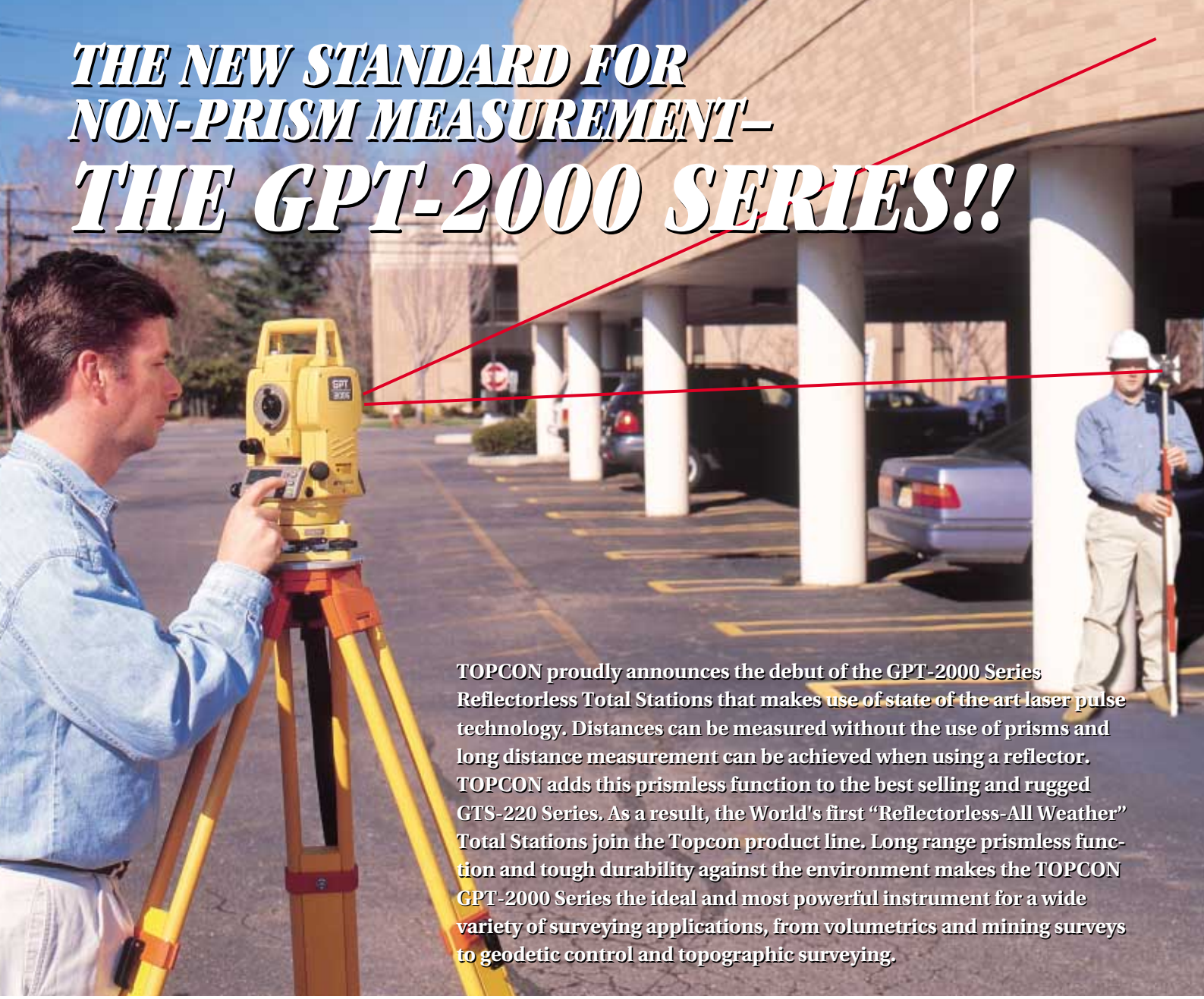
Creation
TOPCON — 2002
70 years of inspired creation

PULSE TOTAL STATION

GPT-2000 series

NEW

THE NEW STANDARD FOR NON-PRISM MEASUREMENT– THE GPT-2000 SERIES!!



TOPCON proudly announces the debut of the GPT-2000 Series Reflectorless Total Stations that makes use of state of the art laser pulse technology. Distances can be measured without the use of prisms and long distance measurement can be achieved when using a reflector. TOPCON adds this prismless function to the best selling and rugged GTS-220 Series. As a result, the World's first "Reflectorless-All Weather" Total Stations join the Topcon product line. Long range prismless function and tough durability against the environment makes the TOPCON GPT-2000 Series the ideal and most powerful instrument for a wide variety of surveying applications, from volumetrics and mining surveys to geodetic control and topographic surveying.

FEATURES

TOPCON'S Original Pulse Technology Assures Long Range of 492 ft. (150m) in Non-Prism Mode and 22,900 ft. (7,000m) w/Single Prism!

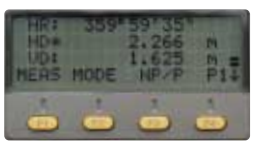
TOPCON's unique pulse laser technology has made it possible for the GPT-2003/2005/2006 Series to measure a long range of 492 ft.(150m) [328 ft. (100m) for GPT-2009] in prismless conditions, and 22,900 ft. (7,000m) [13,100 ft. (4,000m) for GPT-2009] with single reflector. The GPT-2000 Series provides the best measurement performance under any field condition. As a result you will surely realize increased productivity with efficiency and cost reduction.

High Speed Non-Prism Measurement of 0.3 second

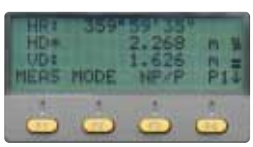
Due to the specialties of pulse laser technology, measurement is virtually instantaneous (0.3 sec in tracking mode and 1.2 sec in fine mode.) Fine focusing on each measurement point is not required. As a Class I invisible laser is used, the operation is completely safe for operator, rod person and passerby.

Simple Operation for Dual Measurement Types

TOPCON adds a non prism measurement function to the toughest and best selling Total Station GTS-220 Series. Depending upon the field application you can change from non-prism to prism measurement mode easily with a simple, one key touch operation.



Prism Mode

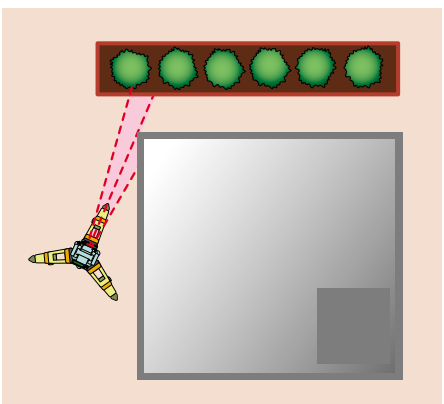


Non-Prism Mode

With TOPCON'S GPT-2000 and U.S. Patent Pending “Plane Offset Program” you can measure to the edge or corners of Buildings and Structures with precision!!

The technology used by all manufacturers of “reflectorless” or “prismless” Total Stations allows for discrepancies in distance measurement under certain application conditions, especially when measuring to an inside corner of a building, or when measuring to the edge of any wall or plane. All prismless Total Stations have expanding beam widths that widen over distance. In particular, you will potentially see distance errors when measuring to an edge, or corner, where part of the measuring beam may extend to the rear, or in the case of an inside corner, forward, of the target, as illustrated in the drawing below. This measuring error can occur regardless of the beam's width.

However, you can work worry-free with the TOPCON GPT-2000 Series. TOPCON's exclusive, U.S. patent pending “Plane Offset Program” is standard on all GPT products, and solves this industry wide problem. Just measure three (3) random points on a wall or plane to establish a known plane. Then sight the unknown point on the plane and the GPT calculates coordinates and distance values of the desired point. With the “TOPCON Plane Offset Program”, you can measure to the edge or to the corner of buildings and structures quite precisely. (For more details please see following information under “Application Measurement”.)



When using Non-Prism Total Stations and measuring to difficult targets, like a building corner, measuring error can occur by receiving a signal from a more distant target. This is due to the expansion of the beam's width over distance. TOPCON's exclusive “Plane Offset Program” solves this problem.

Increased Internal Memory for Data Storage

The GPT-2000 Series has the internal memory to store up to 8,000 points for data collection, or up to 16,000 points for layout work. Due to this substantial memory capacity, you do not need to worry about memory storage.

Dual-Axis Compensator

Dual-axis compensator is available for GPT-2003/2005/2006 models. This dual-axis tilt sensor automatically corrects the vertical and horizontal angle compensation for mis-leveling error.

Laser Plummet

The laser plummet located in the alidade is standard for the GPT-2000 Series. With a clearly visible spot on the ground, you can set up the instrument fast and easy. As an option to the laser plummet, the GPT-2000 Series can be equipped with a conventional optical 3× plummet.

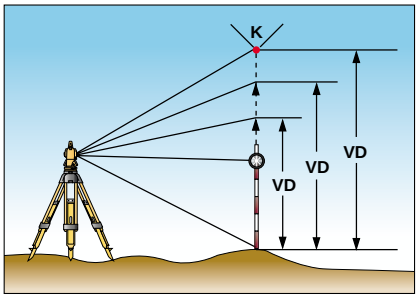
Point Guide System

TOPCON'S Point Guide function is standard for GPT-2003/2005/2006. Get on line quickly and easily with this feature. Two (2) LED lights, one flashing and one constant, help identify the correct alignment for setting out.

APPLICATION MEASUREMENT

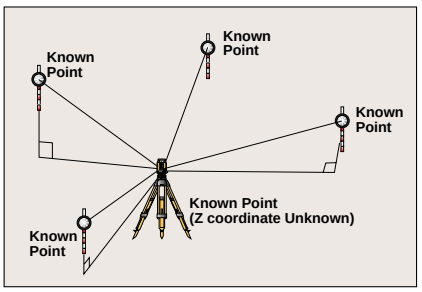
REMOTE ELEVATION MEASUREMENT (REM)

This feature measures the height where a prism can not be placed directly. Measurement can be extended along the plumb line as the height is continuously displayed.



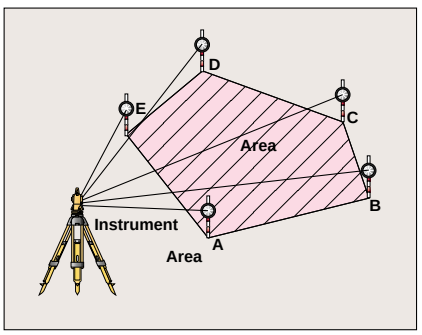
Z COORDINATE OF OCCUPIED POINT (BENCHMARK ELEVATION)

Z coordinate and direction angle of the instrument can be calculated and reset by measuring Z coordinate of known points (Max. 10 points)



AREA CALCULATION

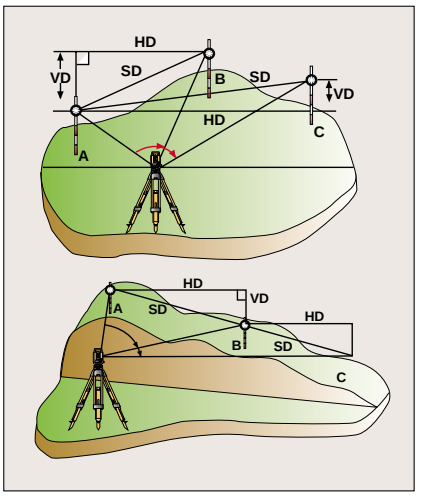
Area can be calculated using measured data or file data (Coordinate data)



MISSING LINE MEASUREMENT (MLM)

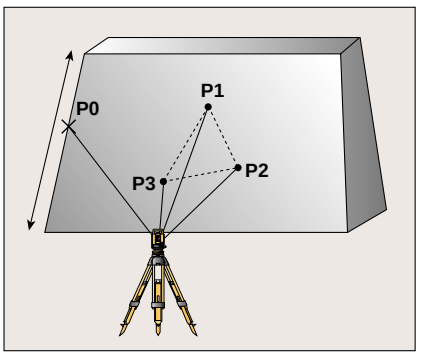
Multiple lines can be drawn between;
1. the first point and the last point.
2. the last 2 points.

Horizontal distance, difference in height and slope distance are calculated. Coordinate file data and manual input data are available to be used.



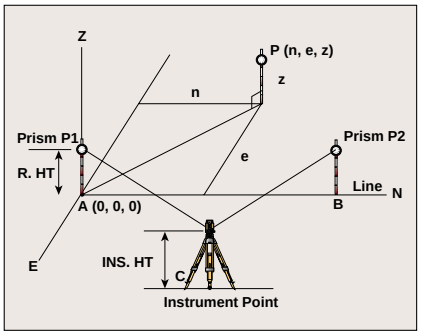
PLANE OFFSET MEASUREMENT

Coordinates can be calculated for points where direct measurements to a prism can not be taken, for example measurements to points on a wall or plane. Three random points (P1, P2, P3) on the plane will be measured first to determine the measured plane and their angles and distances temporarily stored. Then sight the unknown point on the plane and the instrument calculates and displays coordinates and distance values of desired point.



POINT TO LINE MEASUREMENT

Create a new coordinate by measuring to two points. The 1st point becomes the origin and the 2nd point becomes the N axis direction.



STANDARD COMPONENTS

- GPT-2000 series .....1 each
- Battery BT-52QA.....2 each
- Battery charger BC-27BR (120V) or BC-27CR (230V) .....1 each
- Tool kit with case .....1 set
- Plastic carrying case .....1 each
- Silicon cloth .....1 each
- Plastic rain cover .....1 each
- Plumb bob set.....1 each
- Lens cap .....1 each
- Instruction manual .....1 each
- Sun shade.....1 each

OPTIONAL ACCESSORIES

- Trough compass-6

- Diagonal eyepiece-10

- Solar filter-6

- Solar reticle-6

- DK-7

TOUGHEST DURABILITY AGAINST THE ENVIRONMENT-WATERPROOF/DUSTPROOF IP66!! —WORLD'S FIRST IP66 FOR NON-PRISM INSTRUMENTS—

The GPT-2000 Series will stand up to any wet weather or dusty jobsite condition that can occur in the field, giving the benefit of not experiencing down time due to inclement weather. The waterproof/dustproof protection (IP66) of the GPT-2000 Series assures durable performance in the field under all conditions as the world's first "All Weather Pulse Total Stations".

*** Degree of protection against water for TOPCON's GPT-2000 Series is based on the standard IEC60529, defined as "Water projected in powerful jets" against enclosure from any direction shall have no harmful effects. And also GPT-2000 complies with "Dust-tight" of the IEC60529 standard as to degree of protection against solid foreign objects, defined as "No ingress of dust".**

NON-PRISM FUNCTION AND HIGHEST DURABILITY EXPANDS FIELD APPLICATIONS!! —SURVEY ANYWHERE WITH TOPCON'S GPT-2000 SERIES!—

Non-prism Total Stations are highly effective when measuring to points where it is dangerous, or difficult, to place prisms directly, and when job efficiency is the first priority. In addition to the non-prism function the TOPCON GPT-2000 insures a waterproof/dustproof rating of IP66.

These features combine to provide ultimate flexibility in many field applications such as City Elevation Work, Forestry Survey, Quarries Survey, Mining, Accident Investigation,..... and so on.


Building and Structures


Forestry Survey


Quarries Survey


Accident Investigation

SPECIFICATIONS

	GPT-2003/2005/2006	GPT-2009
TELESCOPE		
Length	150mm	
Objective Lens Dia.	45mm (EDM 50mm)	
Magnification	30×	
Image	Erect	
Field of View	1°30′	
Resolving Power	2.5″	
Min. Focus Distance	4.29 ft. (1.3m)	
DISTANCE MEASUREMENT		
Measuring Range		
Non-prism Mode	(Target: White wall)	
In low light condition and without sun glare on target	9.8 to 492 ft. (3 to 150m)	9.8 to 328 ft. (3 to 100m)
Prism Mode		
Condition 1 (1 prism)	22,900 ft (7,000m)	13,100 ft (4,000m)
Condition 1: Sight haze with visibility about 12.5 miles (20km) moderate sunlight with light heat shimmer.		
Measurement Accuracy		
Non-prism Mode	(Diffusing Surface)	
9.8 to 82 ft (3 to 25m)	±(10mm) m.s.e.	
82 ft or more (25m or more)	±(5mm+2ppm×D) m.s.e. D: Measuring distance (mm)	
Prism Mode	±(3mm+2ppm×D) m.s.e. D: Measuring distance (mm)	
Least Count in Measurement		
Fine measurement mode	0.005 ft. (1mm)/0.001 ft. (0.2mm)	
Coarse measurement mode	0.02 ft. (10mm)/0.005 ft. (1mm)	
Tracking measurement mode	0.02 ft. (10mm)	
Measurement Display	12 digits: max. display 99999999.9999	
Measuring Time		
Fine measurement mode	1mm: Approx. 1.2 sec. (Initial 3 sec.) 0.2mm: Approx. 3 sec. (Initial 4 sec.)	
Coarse measurement mode	Approx. 0.5 sec. (Initial 2.5 sec.)	
Tracking measurement mode	Approx. 0.3 sec. (Initial 2.5 sec.)	
Atmospheric Correction Range	–999.9ppm to +999.9ppm, in 0.1ppm increments	
Prism Constant Correction Range	–99.9mm to +99.9mm, in 0.1mm increments	
ANGLE MEASUREMENT		
Method	Absolute Reading	

	GPT-2003	GPT-2005	GPT-2006	GPT-2009
Detecting System	H: 2 sides V: 1 side		H: 1 side V: 1 side	
Minimum Reading	1″/5″ (0.2mgon/1mgon)			5″/10″ (1mgon/2mgon)

	GPT-2003	GPT-2005	GPT-2006	GPT-2009
Accuracy	3″ (1mgon)	5″ (1.5mgon)	6″ (1.8mgon)	9″ (2.7mgon)
Measuring Time	Less than 0.3 sec.			
Diameter of Circle	71mm			
DISPLAY				
Display Unit	Dot matrix LCD 20 characters × 4 lines with Backlight			
	2 sides		1 side	
Keyboard	10 function keys			
TILT CORRECTION (AUTOMATIC INDEX)				
Tilt Sensor	Dual axis			Single axis
Method	Liquid type			
Compensating Range	±3′			
Correction Unit	1″ (0.1mgon)			
OTHERS				
Instrument Height	6.93in (176mm)			
LEVEL SENSITIVITY				
Circular Level	10′/2mm			
Plate Level	30″/2mm		40″/2mm	
LASER PLUMMET	Standard (Optical Plummet: Option)			
DIMENSION	13.2(H)×7.2(W)×5.9(L)in. (336(H)×184(W)×150(L)mm)			
WEIGHT				
Instrument (with battery)	11.0 lbs. (5.0kg)			
Plastic Carrying Case	7.1 lbs. (3.2kg) (Weight of the carrying case may be slightly different due to specific market.)			
DURABILITY				
Protection against water and dust	IP66 (with BT-52QA) (Based on the standard IEC60529)			
Ambient Temperature Range	–4°F to +122°F (–20°C to +50°C)			
BATTERY BT-52QA (2 batteries supplied)				
Output Voltage	7.2 V			
Capacity	2.7 AH (Ni-MH)			
Maximum operating time (when fully recharged) at +68°F (+20°C)				
Including Distance Measurement	3.2 hours × 2 (3,800 points × 2)			
Angle measurement only	45 hours × 2			
Weight	0.7 lbs. (0.3kg)			
BATTERY CHARGER BC-27BR/BC-27CR				
Input Voltage	AC 120V (BC-27BR), AC 230V (BC-27CR)			
Frequency	50/60Hz			
Recharging time (at +68°F/+20°C)	Battery BT-52QA: 1.8 hours			
Discharging time (at +68°F/+20°C)	Battery BT-52QA: 8 hours (in case of full charge)			
Operating Temperature	+50°F to +104°F (+10°C to +40°C)			
Weight	1.1 lbs. (0.5kg)			

* Standard deviation base on DIN18723.

• Designs and specifications herein are subject to change without notice.

Important **In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.**

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