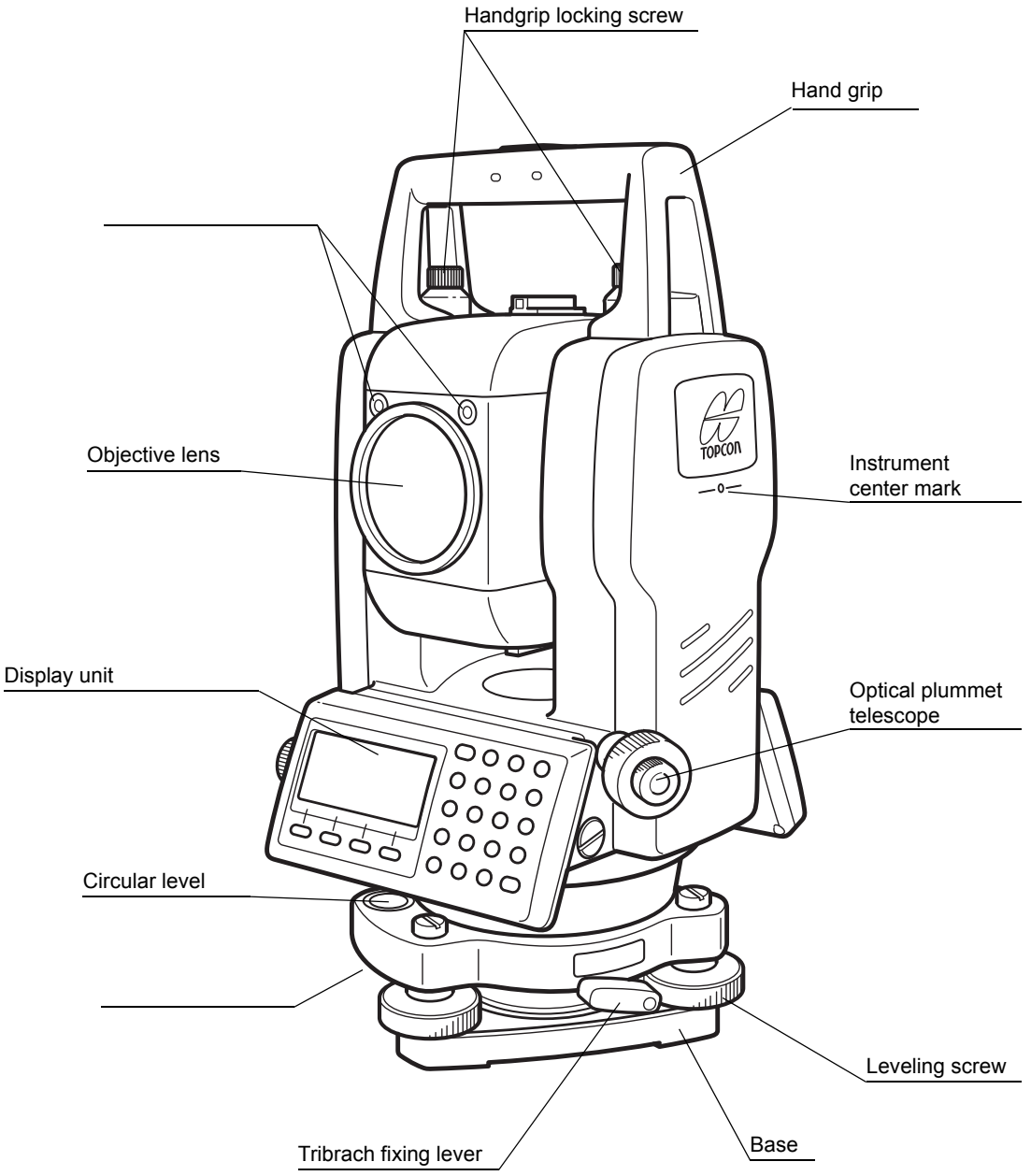
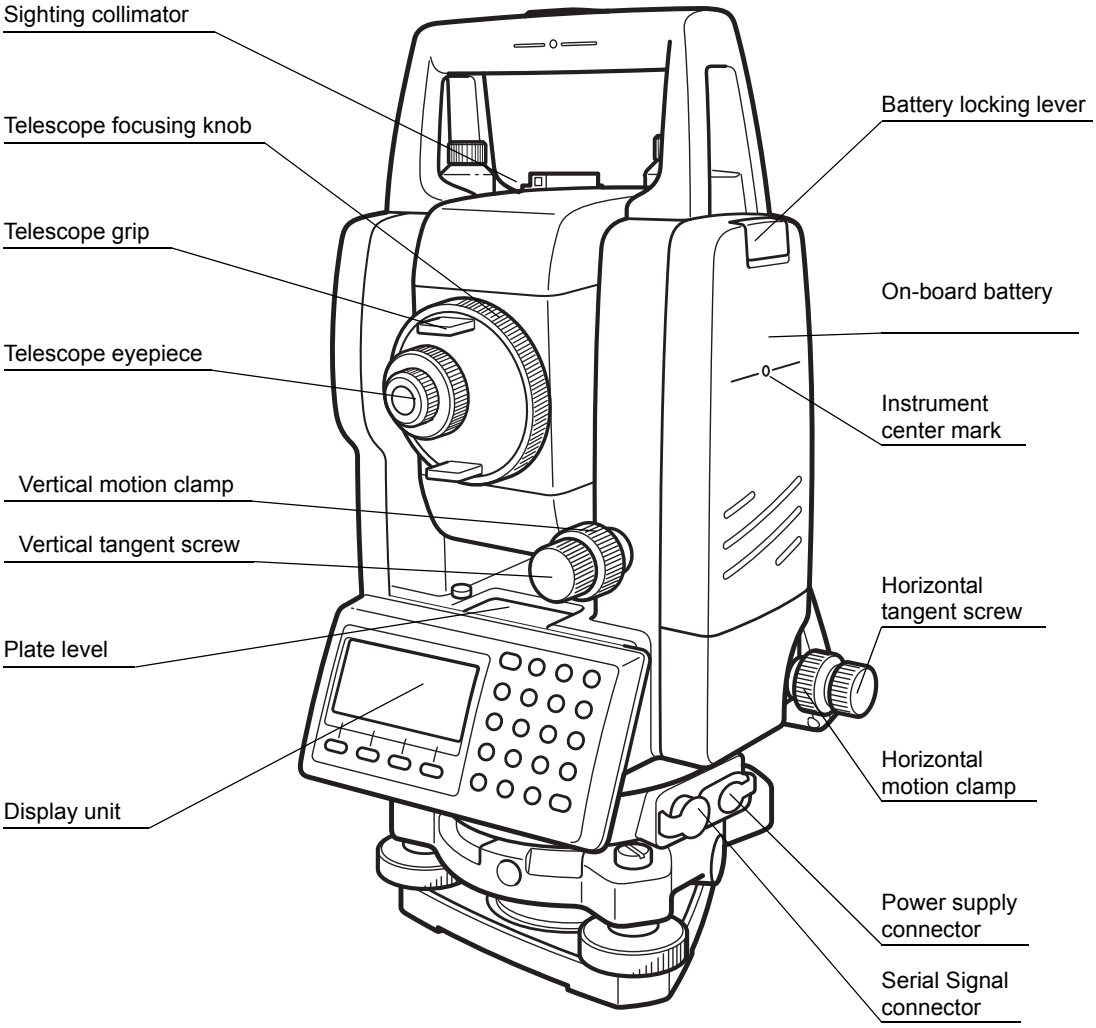
NOMENCLATURE AND FUNCTIONS OF TOTAL STATION

(Manufacturer: Topcon)

1. Nomenclature




Sighting collimator
Telescope focusing knob
Telescope grip
Telescope eyepiece
Vertical motion clamp
Vertical tangent screw
Plate level
Display unit
Battery locking lever
On-board battery
Instrument center mark
Horizontal tangent screw
Horizontal motion clamp
Power supply connector
Serial Signal connector

2. Display

- **Display**

The display uses a dot matrix LCD. In general, the upper three lines display measured data, and the bottom line displays the soft key function which changes with the measuring mode.

- **Example**

```
V :  90°10'20"
HR: 120°30'40"

0SET HOLD HSET P1↓
```

Angle measurement mode

V-angle : 90°10’20”
H-angle : 120°30’40”

```
HR:  120°30'40"
HD*   65.432 m
VD:   12.345 m
MEAS MODE S/A P1↓
```

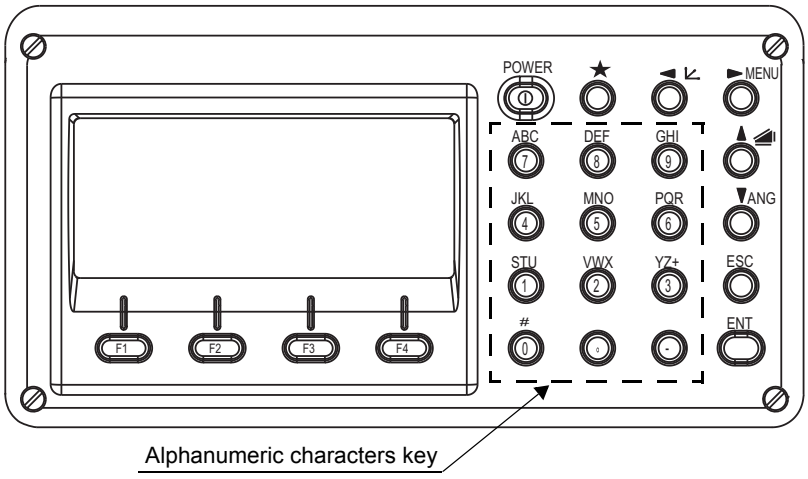
Distance measurement mode

Horizontal-angle : 120°30’40”
Horizontal distance : 65.432m
Relative elevation : 12.345m

- **Display marks**

Display	Contents	Display	Content
V	V-angle	✻	EDM working
HR	H-angle right	m	Meter unit
HL	H-angle left		
HD	Horizontal distance		
VD	Relative elevation		
SD	Slope distance		
N	N coordinate		
E	E coordinate		
Z	Z coordinate		

3. Operating Keys

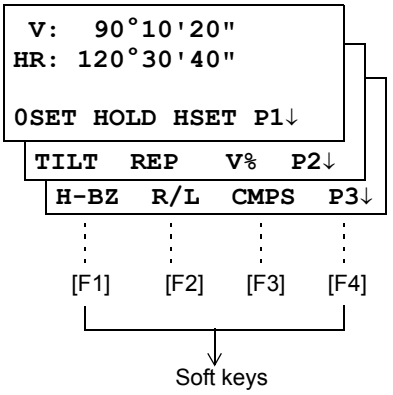


Keys	Name of Key	Function
	Coordinate meas.key	Coordinate measurement mode
	Distance meas.key	Distance measurement mode.
ANG	Angle meas.key	Angle measurement mode
POWER	Power source key	ON/OFF of power source
MENU	Menu key	Switches menu mode and normal mode. To set application measurements and adjust in the menu mode.
ESC	Escape key	● Returning to the measurement mode or previous layer mode from the
ENT	Enter key	Press at the end of inputting values.
F1–F4	Soft key (Function key)	Responds to the message displayed.

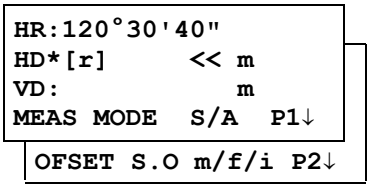
4. Function Key (Soft Key)

The Soft Key message is displayed at the bottom line of display. The functions are according to the displayed message and vary among the different modes.

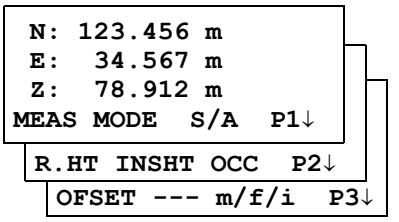
Angle measurement mode



Distance measurement mode



Coordinates measurement mode



Angle measurement

Page	Soft key	Display mark	Function
1	F1	0SET	Angle of Horizontal is set to 0°00'00"
	F2	HOLD	Hold the horizontal angle
	F3	HSET	Sets a required horizontal angle by entering numerals.
	F4	P1↓	The function of soft keys is shown on next page (P2).
2	F1	TILT	Setting Tilt Correction If ON, the display shows tilt correction value.
	F2	REP	Repetition angle measurement mode
	F3	V%	Vertical angle percent grade(%) mode

Distance measurement mode

1	F1	MEAS	Start measuring
	F2	MODE	Sets a measuring mode, Fine/Coarse/Tracking
	F3	S/A	Select set audio mode
	F4	P1↓	The function of soft keys is shown on next page (P2).
2	F1	OFSET	Select Off-set measurement mode
	F2	S.O	Select stake out measurement mode
	F3	m/f/i	Switches meter, feet or feet and inch unit.
	F4	P2↓	The function of soft keys is shown on next page (P1).

Coordinate measurement mode

1	F1	MEAS	Start measuring
	F2	MODE	Sets a measuring mode, Fine/Coarse/Tracking
	F3	S/A	Select set audio mode
	F4	P1↓	The function of soft keys is shown on next page (P2).
2	F1	R.HT	Sets a prism height by input values.
	F2	INSHT	Sets an instrument height by input values.
	F3	OCC	Sets an instrument coordinate point by input values.
	F4	P2↓	The function of soft keys is shown on next page (P3).
3	F1	OFSET	Select Off-set measurement mode
	F3	m/f/i	Switches meter, feet or feet and inch unit.
	F4	P3↓	The function of soft keys is shown on next page (P1).

VIDEO LINK:
https://youtu.be/O7OPiG7pVSk

Setting up a Total Station is similar to that of a Digital Theodolite as is demonstrated in the following video

VIDEO LINK:
https://youtu.be/lp824ZRIWQs