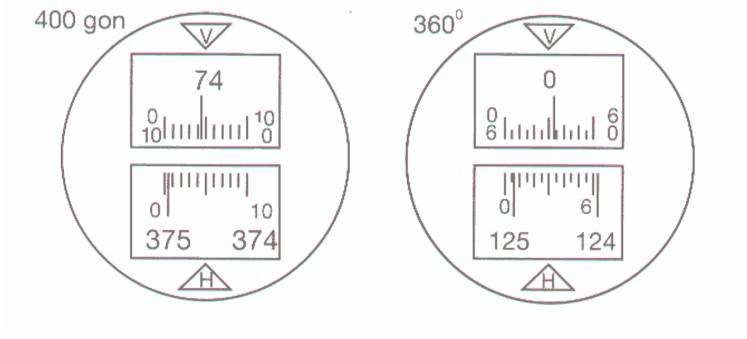
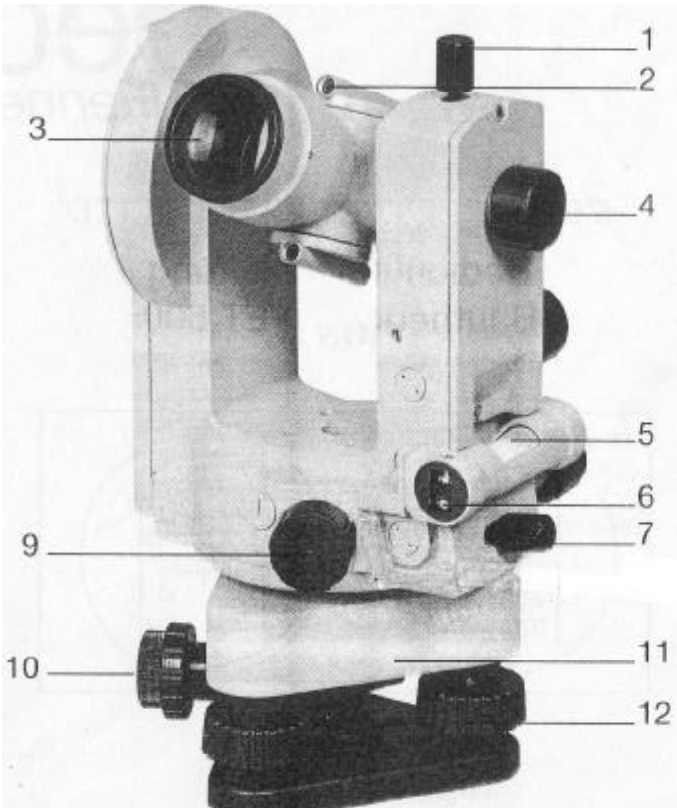
CONSTRUCTION THEODOLITE FET 500

OPERATION MANUAL

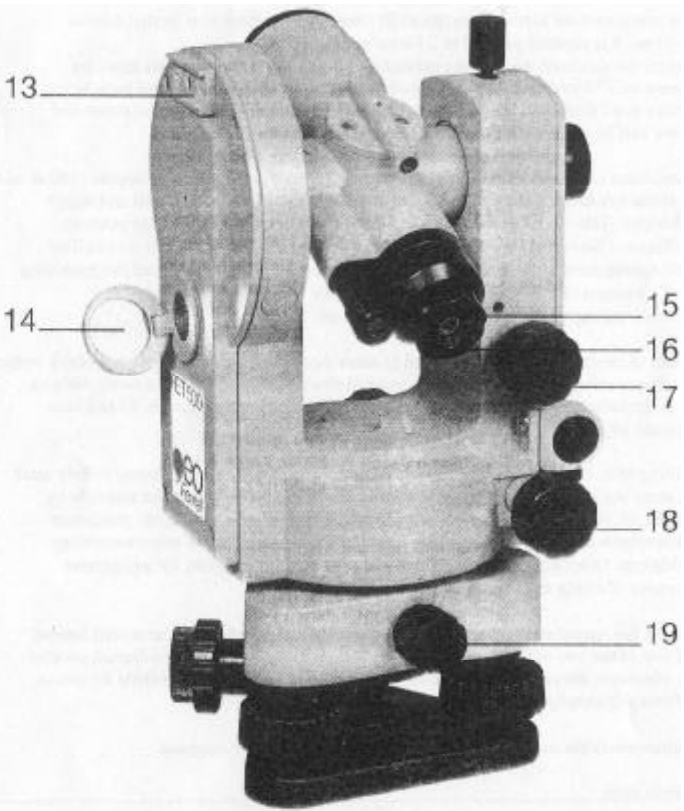


Sample readings

400 gon	360 °
V 74,56	V 0° 26´
H 375,05	V 125° 05.5´



1- Vertical clamp
2- Optical sight
3- Objective lens
4- Focussing device
5- Tubular level
6- Adjustment screws
7- Horizontal clamp
9- Hz-Circle turn handle
10- Optical plummet
11- Tribrach
12- Foot screw



13- Mount of tubular compass
14- Mirror
15- Eyepiece of reading microscope
16- Eyepiece of telescope
17- Vertical tangent screw
18- Horizontal tangent screw
19- Clamp of tribrach

1. Fix instrument on tripod. Turn theodolite around its vertical axis so that tubular level no. 5 is situated parallel to 2 footscrews no. 12.
   Centre tubular level no. 5. Turn instrument by 90° and centre tubular level by means of 3rd footscrew. Repeat procedure until tubular level is coming back to centre in all directions. If not remove half of deviation by opposite footscrew and other half by adjustment screws no. 6 of tubular level.

2. Horizontal circle. Direct telescope to well visible mark at distance of approx. 100 m and at about eye level. Take reading. Turn theodolite round its vertical axis and transit telescope. Take second reading of same mark with telescope in reverse position. Difference between two readings should be 200 gon. If this is not the case half of collimation error is to be removed by turning tangent screw no. 18 and the remaining half by means of two reticule adjustment screws which become accessible unscrewing cap placed next to eyepiece part no. 16.

3. Vertical circle. Proceed as described in afore mentioned paragraph (2.) and check vertical circle accordingly. The sum of both vertical circle readings must be exactly 400gon. Any deviations to be removed by means of vertical tangent screw no. 17 and two reticule adjustment screws.

4. Tilting axis. Set up theodolite in front of wall. Direct telescope to clearly visible mark at steep angle. Transit telescope to ground mark. Fix ground mark for example by means of little stone. Turn theodolite round its vertical axis and repeat procedure in reverse telescope position. Cross hair should hit ground mark when transitting telescope. Otherwise theodolite should be sent to service station for adjustment because of tilting axis error.

5. Inside the container you will find a telescope bubble which can be mounted instead of one of the two optical sights. After mounting bubble it has to be adjusted parallel to telescope: move vertical circle to 100 gon and adjust telescope bubble by means of two adjustment screws no. 6.

Further available accessories: 90° eyepiece prisms, tubular compass.

Technical data

Magnification:	20 x	Tubular level:	45“
Objective aperture:	30 mm	Telescope bubble:	20“
Shortest foc. distance:	1,2 m	Temperature range:	-40° - +50° C
Circles:	400gon/360°	Dimensions:	140 x 130 x 230 mm
Direct reading:	0,1gon/ 5´	Weight:	2,3 kg
Estimation:	10mgon/ 0,5´		