

# Comta

Mining Compass in  
Suspension Device



# F. W. BREITHAAPT & SOHN GmbH & Co. KG

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## Comta

Mining Compass in  
Suspension Device

### Field of Application:

The Mining Compass COMTA with its cardanic (Kassel type) suspension device is suitable for mine surveying and technical work, construction of tunnels and galleries, and for measurements in open pits and measurements connected with blastings. (In case of magnetic disturbances or in case a much higher measuring accuracy is required, we recommend the BREITHAAPT mining suspension theodolite No. 02 TEMIN).

### Description:

The mining compass outfit consists of the compass and the cardanic Kassel type suspension device. The compass box is made of light metal. The circle is graduated to single degrees ( $1^\circ/1^\ominus$ ) numbered counter-clockwise and with international cardinal points (East and West inverse). The circle can be adjusted within a range of  $\pm 30^\circ$  according to the local declination.

The north end of the 80 mm sharp-edged magnetic needle is marked red. The south end is equipped with a sliding inclination weight in order to guarantee that both ends can be made to lie flush with the circle graduation. The adjustment of the inclination weight can be done by the user himself after the coverglass has been taken off. A needle stop serves to damp the needle swing and to lift the needle from its pin when not in use. Suspended by a stud and a catch in the cardanic Kassel type suspension device, the compass box always remains in a horizontal position independently from the tilt and the North-South direction always is parallel to the suspension hooks. For transportation and in order to save space, the compass with its suspension device is folded into a single plane.

### Distinctive Advantages:

- High precision because of sharp-edged 80 mm long magnetic needle made of special steel alloy outstanding for high residual magnetism and coercive force, non-magnetic steel pivot of special hardness and jewelled bearing.
- Cardanic suspension device, foldable with adjustable bearings
- Declination adjustment range  $\pm 30^\circ$
- Adjustable inclination weight
- Protecting glass with evaporated Elco coating against cosmic ray radiation



Carrying case MARTA

### Technical Data:

|                                 |  |
|---------------------------------|--|
| Length of magnetic needle       | 80 mm  |
| Graduation                      | $360^\circ$ ( $400^\ominus$ )                                  |
| Graduation interval             | $1^\circ$ ( $1^\ominus$ )                                      |
| Numbering (counter-clockwise)   | from $10^\circ$ to $10^\ominus$ ( $10^\ominus$ to $10^\circ$ ) |
| Circle reading by estimation    | $0,1^\circ$ ( $0,1^\ominus$ )                                  |
| Accuracy                        | $< 0,1^\circ$ ( $0,1^\ominus$ )                                |
| Range of declination adjustment | $\pm 30^\circ$   |
| Weight COMTA                    | 0,4 kg   |

### Accessories:

**Suspension clinometer**  
The clinometer is made of lacquered brass while the graduated semicircle is chromium plated (diameter 240 mm). The scale has a graduated range of  $\pm 90^\circ$  ( $\pm 100^\ominus$ ) with subdivisions in  $1/4^\circ$  ( $1/4^\ominus$ ) and is numbered every  $5^\circ$  ( $5^\ominus$ ). As an index for the inclination reading serves a thin cord with plumb bob. The latter is clamped for transport.

Weight: 0,1 kg  
No. 340 COGRA

**Robust wooden carrying case with leather covering and leather belt for COMTA and COGRA**

Weight: 1,9 kg  
No. 345 MARTA

### Protractor Plate

For mapping purposes the protractor plate (size 230 x 140 mm) takes up the compass in exact North-South-direction which is parallel to the bevelled edge. This edge has a  $\pm 100$  mm division. Two grasps serve for easy lift off the sketch.

Weight: 0,350 kg  
No. 341 COZUL

**Wooden carrying case for COMTA, COGRA, COZUL and COKLA.**

Weight: 1,4 kg  
No. 342 COKAS

### Brass Clamp

Weight: 5 g  
No. 346 COKLA

### Magnifier

Weight: 8 g  
No. 385 LUPAL

### Ordering Data:

|   |               |
|---|---------------|
| Mining Compass                                  | No. 339 COMTA |
| Suspension clinometer                           | No. 340 COGRA |
| Carrying case with leather cover for            |               |
| No. 339, 340                                    | No. 345 MARTA |
| Protractor Plate                                | No. 341 COZUL |
| Wooden carrying case for No. 339, 340, 341, 346 | No. 342 COKAS |
| Brass Clamp                                     | No. 346 COKLA |
| Magnifier                                       | No. 385 LUPAL |

When ordering, please indicate graduation required ( $360^\circ$  or  $400^\ominus$ )

### Manufacturing program:

#### Levelling instruments:

Quickset Levels, Builder's Levels, Engineer's Levels, Automatic Engineer's Levels, Precision Levels.

#### Theodolites:

Surveying Instrument Systems for Training Purposes, Builder's Theodolites, Compass Theodolites, Repetition Scale Theodolites, Double Center Theodolites, Mining Suspension Theodolites, Pilot Balloon Theodolites.

#### Topographical Instruments:

Optical Hand Clinometers, Telescopic Alidades, Plane Table Equipments, Plane Table Tacheometers, Topographical Range Finders.

#### Magnetic Compasses:

Geological Compasses, Stratum Compasses, Prismatic Compasses, Mining Compasses, Orientation Compasses.

#### Geodetic Special Instruments:

Clinometers, Level Quadrants, Optical Track Levelling Equipments, Universal Optical Track Measuring Instruments, Alignment Telescopes, Laser Profile Measuring Instruments, Optical Precision Plumbing Instruments, Laser Field of View Measuring Instruments.

#### Geodetic Testing Instruments:

Testing Instruments for Graduated Circles, Double Image Comparators, Collimators and Adjusting Stands, Spirit Level Testing Instruments.



Mining suspension Theodolite

### Experience and technical know-how accomplished in more than 220 years

More than 400 000 BREITHAAPT surveying instruments are successfully used by engineers and scientists in 120 countries. The comprehensive manufacturing program comprises the instrument that matches its intended special application. Continuous development of our products built on experience, advice of the practising surveyor and coupled with latest production techniques, guarantee a maximum of quality, reliability and precision to the benefit of our customers throughout the world.

BREITHAAPT sets the marks of accuracy and excellence.