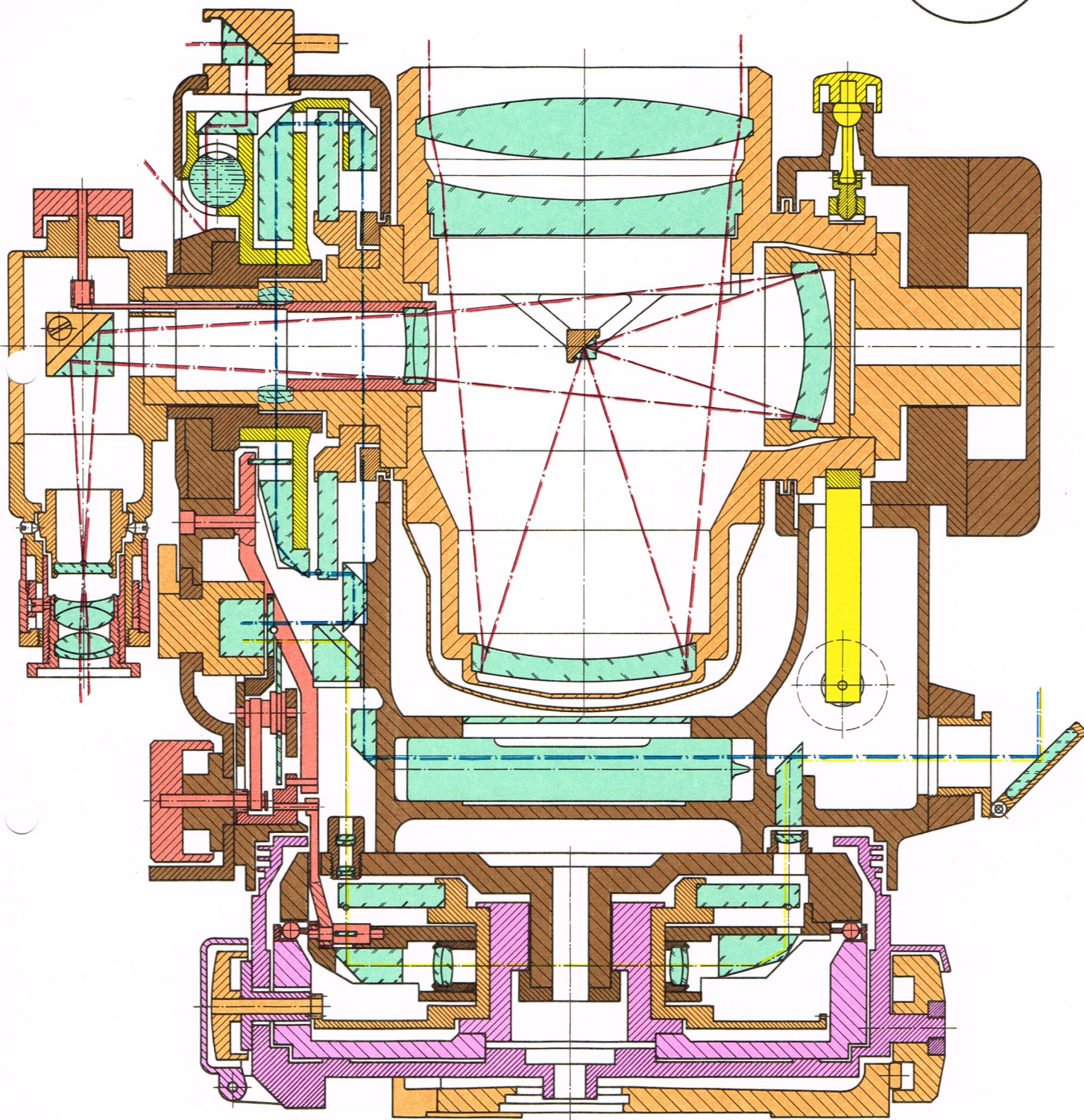


DKM 3



1:1,25

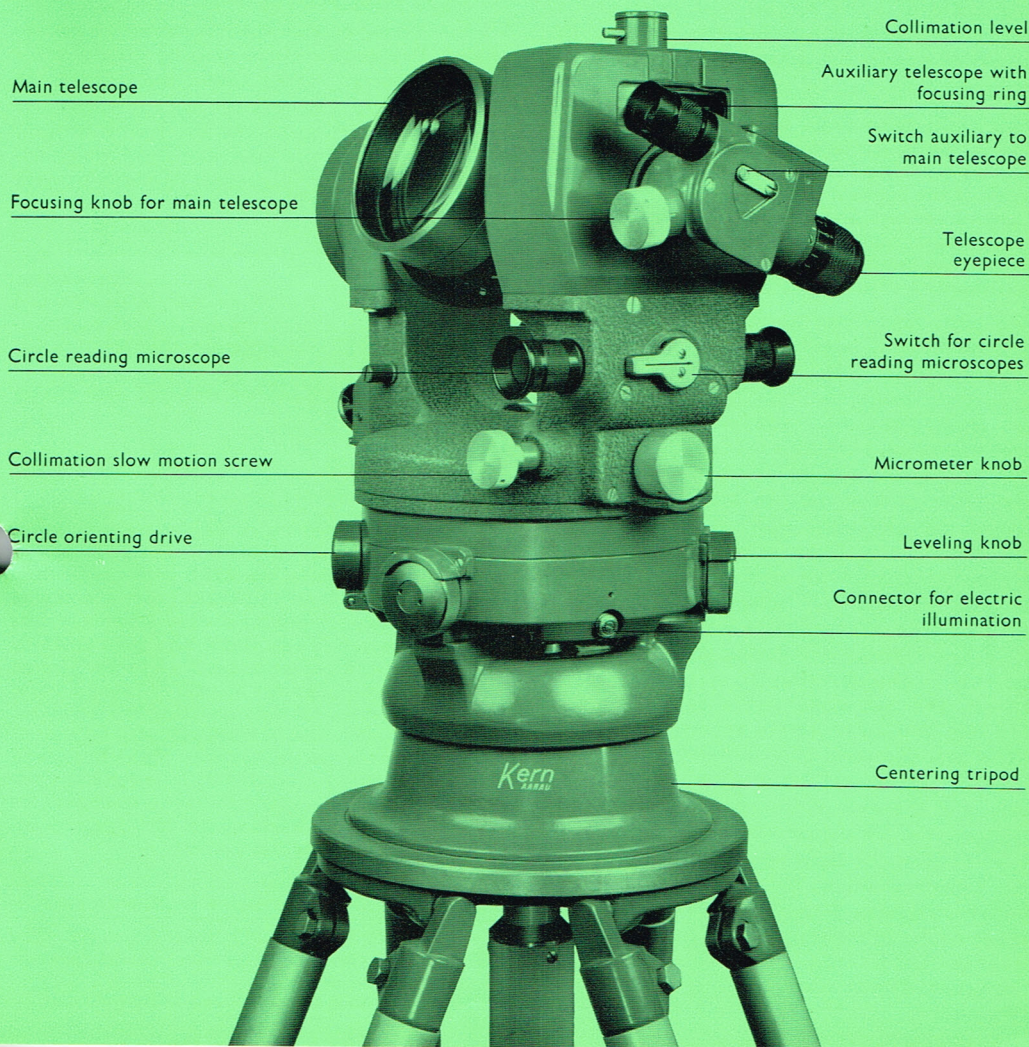
Kern & Co. Ltd. Aarau Switzerland

DKM 3

Specifications

Main telescope:		Circle graduation interval	10° / 10'
Objective aperture	2.83 in. (72 mm)	Circle readings, direct	0.5 ^{cc} / 0.5"
Magnification	45×	Circle readings, by estimation	0.1 ^{cc} / 0.1"
with alternate eyepiece	27×	Level sensitivity plate level	10"/2 mm
Shortest focusing distance	~ 62 ft. (19 m)	Level sensitivity coll. level	10"/2 mm
Diameter of field of view at 1000 ft. 24 ft.		Height of horizontal axis	6.69 in. (170 mm)
Auxiliary telescope:		Weight of instrument	24.7 lbs. (11.2 kg)
Objective aperture	0.47 in. (12 mm)	Weight of met. carrying case	7.05 lbs. (3.2 kg)
Magnification	11×	Dim. of metal carrying case	7.17 × 10.24 × 11.14 in. (18.2 × 26 × 28.2 cm)
with alternate eyepiece	6×		
Shortest focusing distance	~ 5.9 ft. (1.8 m)		
Diameter of field of view at 1000 ft. 110 ft.			
Diameter of circles	3.94 in. (100 mm)		

First Order Triangulation Theodolite with Optical Micrometer



Collimation level

Auxiliary telescope with focusing ring

Switch auxiliary to main telescope

Telescope eyepiece

Switch for circle reading microscopes

Micrometer knob

Leveling knob

Connector for electric illumination

Centering tripod

Main telescope

Focusing knob for main telescope

Circle reading microscope

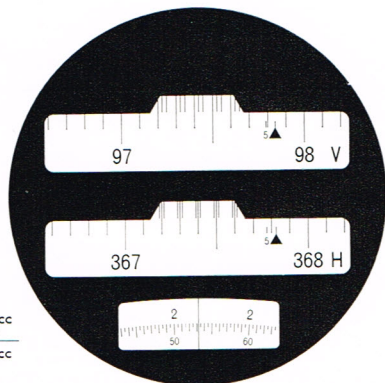
Collimation slow motion screw

Circle orienting drive

Kern
18820

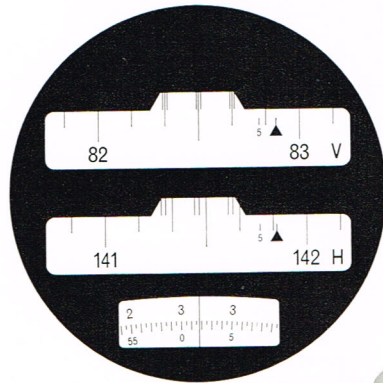
Examples of Circle Readings

400°
Horizontal
circle



367° 80'
2° 53.2''
367° 82° 53.2''

360°
Vertical
circle



82° 50'
3' 1.8''
82° 53' 1.8''

The DKM 3 is the largest and most precise Kern theodolite. It satisfies the exacting demands of geodetic practice and is particularly designed for

First and second order triangulation
Special problems in construction and industry, such as deformation measurements and layout work of the highest precision
Control surveys and time-deformation measurements

All simple methods of astronomy for the determination of azimuth, position and time

The most distinctive feature of the DKM 3 is the mirror-lens telescope. This short barreled telescope with wide objective aperture creates a perfect image, entirely free of secondary spectrum. The convergent lens system and the first mirror-lens create a first real image. From this image, the second mirror-lens creates in the plane of the reticule a second real, enlarged, upright image which is observed in the telescope ocular. The axes of the mirror-lenses are perpendicular, an arrangement which eliminates detrimental reflections. The use of back-silvered mirror-lenses makes possible the excellent optical correction and guarantees stability of the silvering. In spite of the short barrel, the telescope has a focal length of 510 mm and an objective aperture of 72 mm. With the 45× and 27× eyepieces the ocular focal lengths are 11.3 and 18.9 mm, respectively, and the exit pupils are 1.6 and 2.7 mm, respectively. This guarantees a high brilliance even under poor lighting conditions. For finding signals there is, in addition to the view finder, an auxiliary telescope which makes use of the ocular of the main telescope. A switching lever is used to change from one telescope to the other. The auxiliary telescope is also used

for angle measurement when sights are short as, for example, at a station occupied eccentrically. The double circle reading system utilizes "symmetry" rather than "coincidence" in the setting of the optical micrometer. The symmetrical setting of the sharp line images, the brightness of the field, and the high precision of the optical micrometer combine to yield precise circle readings.

Standard Equipment

1 theodolite DKM 3 (400° or 360°) with 45× and 27× eyepieces in metal carrying case with tool compartment and two rheostat-controlled lighting fixtures no. 443 c

1 electric lighting set no. 444 equipped with battery case and hand lamp

1 centering tripod no. 174

Accessories available upon request

Striding level no. 421 B with simple level vial, 2-4" / Striding level no. 421 BK with chambered level vial 2-4" / Horrebow level no. 422 B with simple level vial / Horrebow level no. 422 BK with chambered level vial / Eyepiece prism no. 423 / Elbow eyepiece no. 420 / Traversing equipment PZ / Invar subbase bar IB / Electric illumination no. 274 A for IB / Optical roof and ground plummet no. 458 / Standard trivet no. 424 / Trivet no. 426 with centering ball and height gauge / Extension tube 50 cm no. 171-100 for centering rod / Plumb bob no. 474 with plumb line plug / Fungicide compound no. 490-21 / Desiccating compound no. 493 / Shoulder carrying strap no. 469 for metal carrying case / Rucksack no. 480 / Packrack no. 395 / Padded shipping case no. 397

Accessories for deformation measurements

Foot plate set no. 424-C-12/20 for trivet no. 426 / Centering plug no. 17153 a for trivet no. 426 / Further accessories: on request