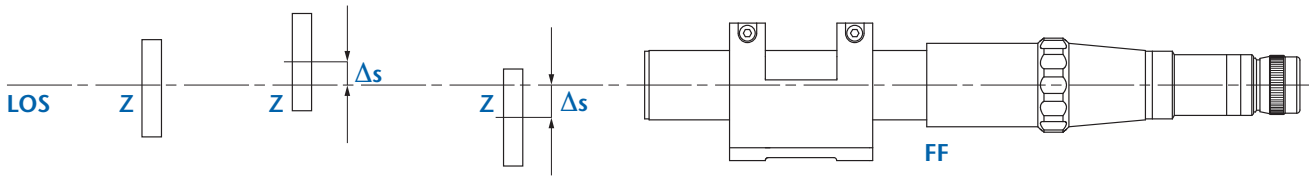
ALIGNMENT SYSTEMS

INTRODUCTION

FF = Alignment telescopes
Z = Target
LOS = Line of sight
Δs = Deviation from line of sight



Alignment systems are precision instruments for the alignment of objects on a reference line, which is defined by the line of sight of the system. A special feature of alignment systems is that the direction of the optical axis is conserved during focussing. This property makes them especially useful for the alignment of bore holes, bearings, optical set-ups or for the alignment of guides, axes and planes.
Particularly noteworthy on the alignment systems is the wide setting range of objective distances from the tube ending to infinity.
The optical axis and focusing lens are concentrically aligned to the barrel with a high degree of precision. Therefore the use of an alignment telescope for alignment of bore holes, bearings etc. is very simple, as with exact fixing of the alignment telescope in the reference bore hole or bearing the line of sight is defined already. Depending on measurement task three variants are available.
An alignment collimator serves to precisely project an image of the collimator reticle along a line of reference over varying target distances.
Alignment telescopes serve to establish an accurate line of sight to targets at different distances and determine the deviation of the targets with respect to the reference line.
Alignment autocollimators are a combination of the foregoing variants. They offer the additional possibility of measuring the tilting angle of the target with respect to the reference line. The eyepiece f=14,7 mm can be interchanged with eyepieces f=10 mm or f=25 mm to vary the total magnification and the FOV.

Technical data	
Focussing range:	0 - infinity
Accuracy of line sight:	10 µm
The accuracy of the line of sight denotes the deviation to a straight line measured in the image plane.	
Focal length:	80 mm (at 0 m) to 289 mm (infinity)
Free diameter:	26 mm

Magnification of reticle image	
at 0,5 m	5,8x
at 1 m	8,2x
at 2 m	12,6x
at 5 m	24x
at 10 m	42x
at 15 m	61x
at 20 m	77x

ALIGNMENT COLLIMATOR