
Description of function

Fixed firmly to the housing or the operating element, the pointer shaft with the longer red pointer is mounted at the centre of the position indicator. This pointer therefore shows the revolution of the spindle at a ratio of 1:1, at the same time turning in the same direction as the spindle.

The same pointer shaft **loosely** holds a carrier element, with the scale attached to one side and a gear wheel (1st central wheel) attached at the rear. A pinion inside the housing and protruding to the outside engages in a second gear wheel (2nd central wheel) which is fixed, i.e. attached to the machine-side by means of a bracket (retaining system). The entire configuration constitutes a planetary gear.

If the position indicator (operating element) is turned, this planetary gear will ensure that the carrier element and therefore the scale remain in the resting position.

The rotary motion is transferred to the shorter second pointer via a gear wheel **fixed** to the pointer shaft and a reduction gear at the carrier element. Any position (rotary position) of the spindle can now be read with accuracy on the scale.

Use

Position indicators with positive drive are used for attaching to a vertical spindle or a spindle inclined by 60°. Also, the scale will not oscillate when exposed to external vibrations.

As the mechanical measurement system is relatively complex and requires a machine-side support, cost reasons limit the use of this position indicator to the above special applications.

Selecting the reduction

While the longer red pointer shows the rotary motion of the spindle of a ratio of 1 to 1, the shorter black pointer makes only a fraction of the rotary motion defined by the reduction ratio.

The reduction ratio is selected depending on the maximum number of spindle revolutions over the entire range of adjustment. The preferred selection is the standard reduction ratio which is the same as or, if possible, slightly larger than the maximum number of revolutions.

Example:

Spindle adjustment range: 11 revolutions

Selected reduction ratio: 12 to 1

This selection gives virtually the whole scale range for the position indication.

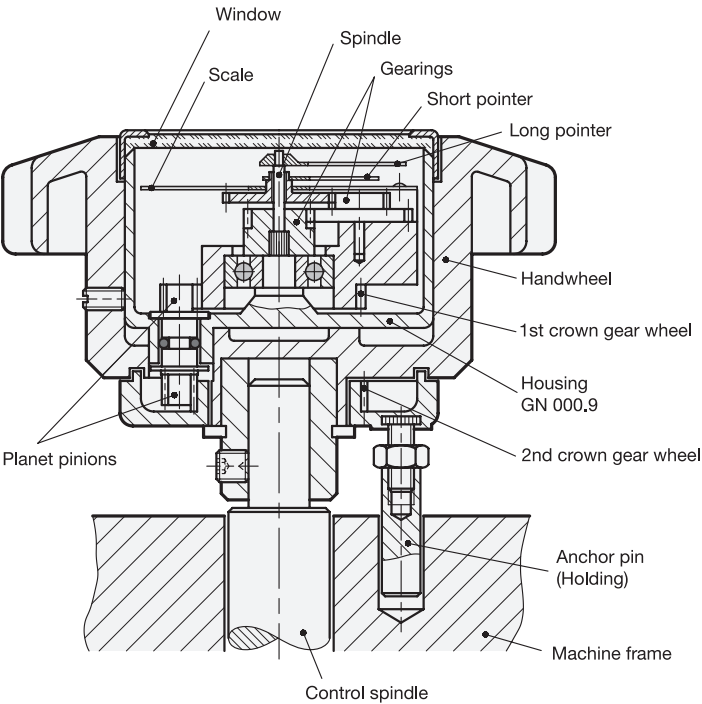
Scale

The standard scales have divisions (number of graduation marks) matching the reduction ratio.

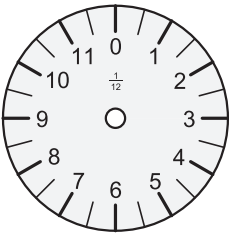
The numerical sequence also matches the reduction ratio depending on use, i.e. right turn (clockwise) or left turn (anticlockwise).

If required and using a separately arranged table, the measured value corresponding the application in hand can be assigned to each scale number.

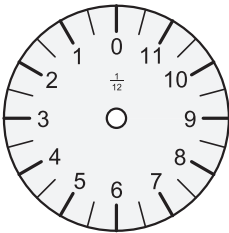
Special scales on request.



Examples of 12:1 standard dial



Figures rising by clockwise rotation



Figures rising by counter-clockwise rotation