



INSTRUCTIONS



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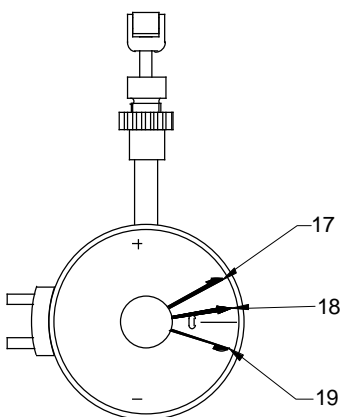
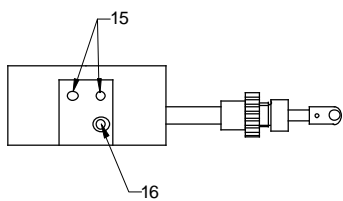
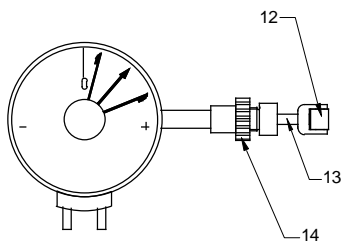
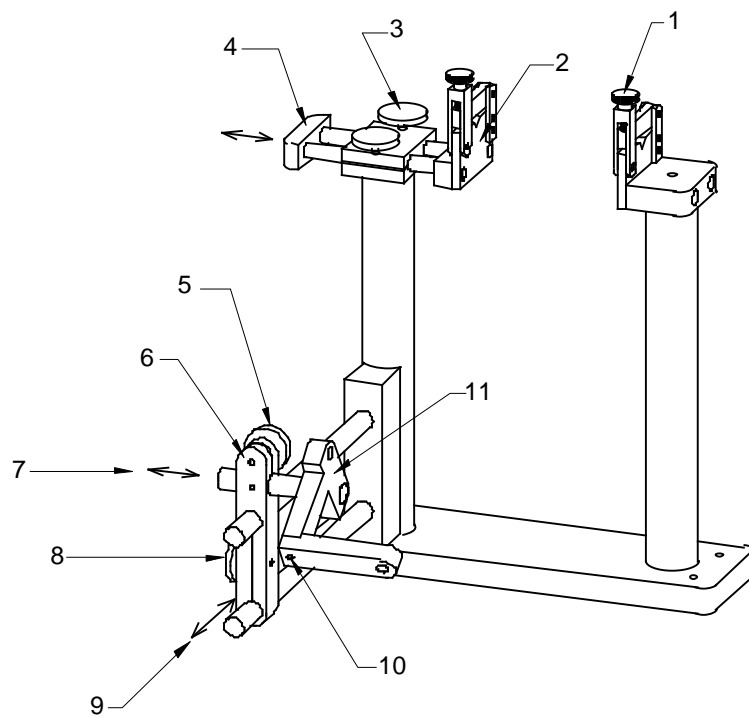
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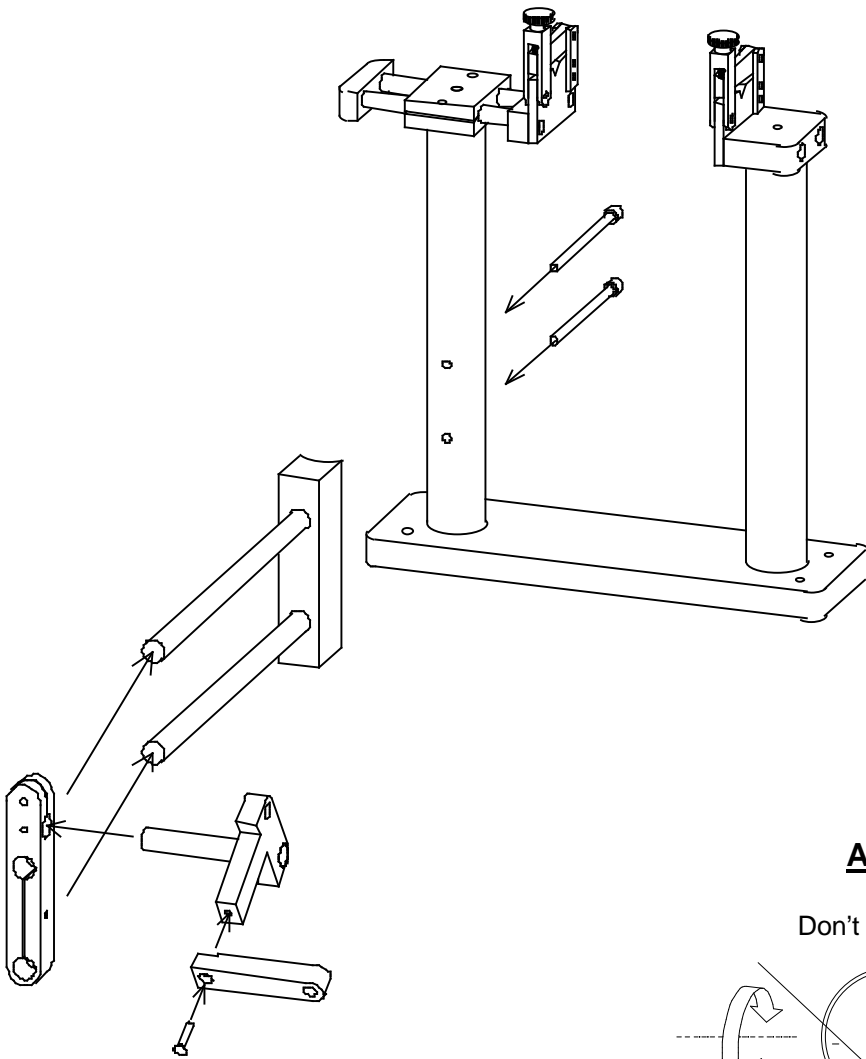
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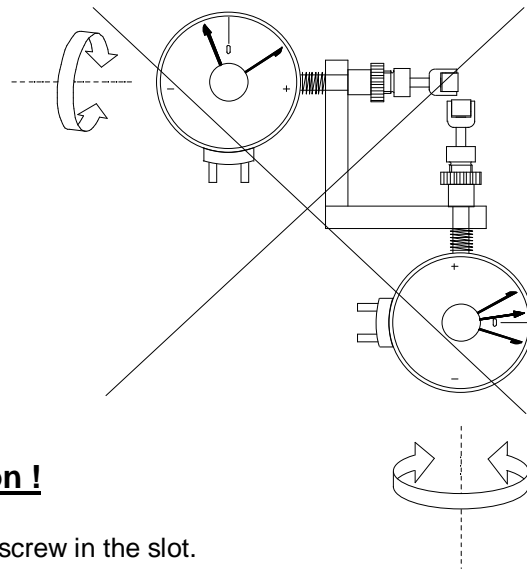


- 1 Wheel-holder screw
- 2 Wheel-holder
- 3 Screw to fix the slider
- 4 Slider for the adjustment of the axle width
- 5 Screw to fix the gauge-holder
- 6 Holder to move the gauges
- 7 Adjustment for the spacing of the gauges
- 8 Screw to fix the holder
- 9 Adjustment for the wheel-diameter
- 10 Screw to remove the radial gauge
- 11 Gauge-holder
- 12 Sensor
- 13 Sensor pin
- 14 Knurled nut
- 15 push button to move the drag pointers to the main pointer
- 16 pull button to unlock the sensor
- 17 Left drag pointer
- 18 Main pointer
- 19 Right drag pointer



Attention !

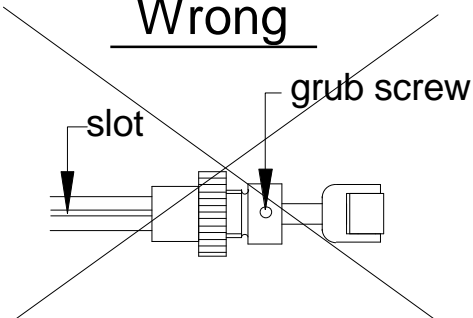
Don't turn the clock's



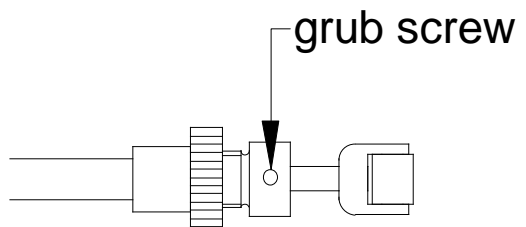
Attention !

Never tighten the grub screw in the slot.

Wrong

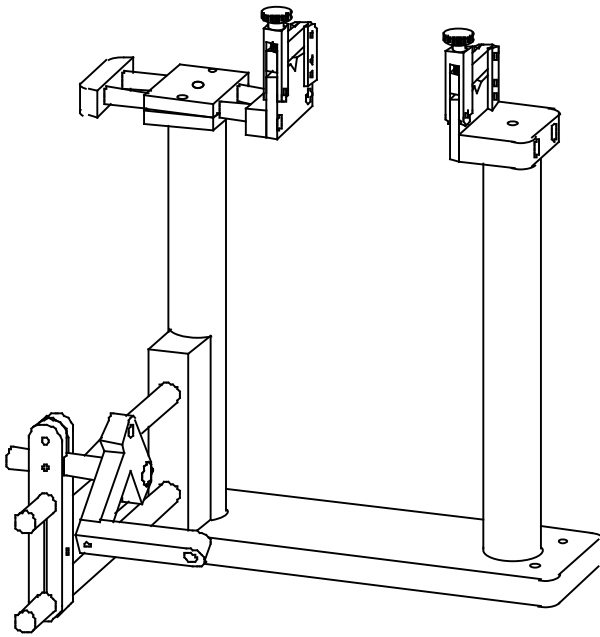


Right

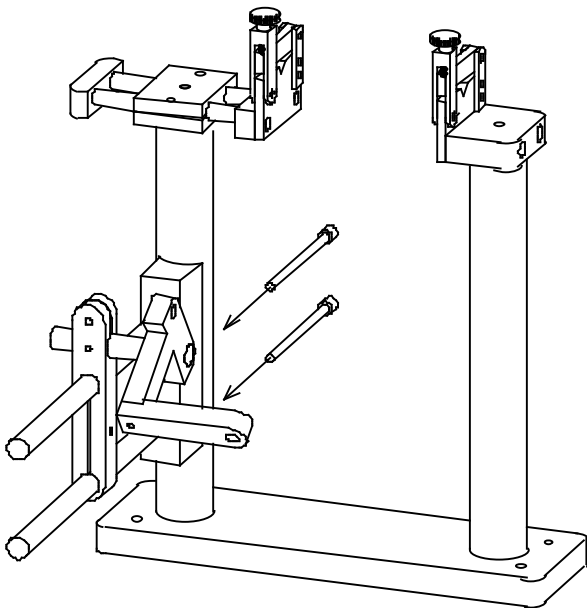


Different holder positions

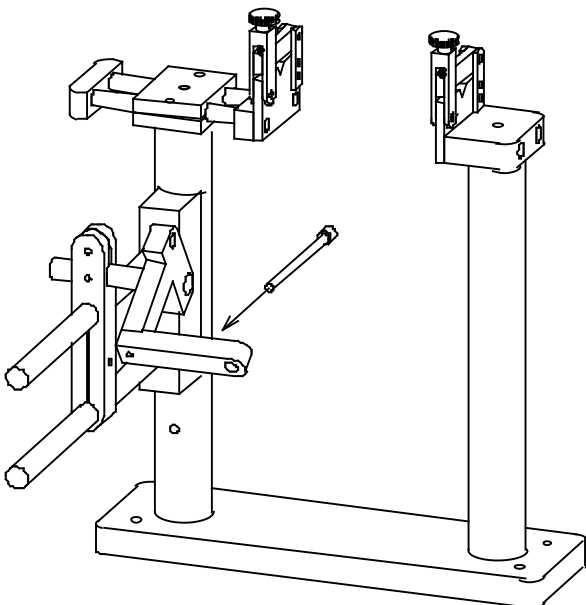
for normal, middle and small Wheels



- Normal position for wheel sizes diameter 772 mm - 480 mm.

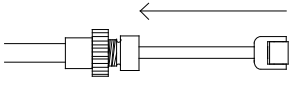


- Middle position for wheel sizes diameter 480 mm - 400 mm.
For this position you only need two screws.

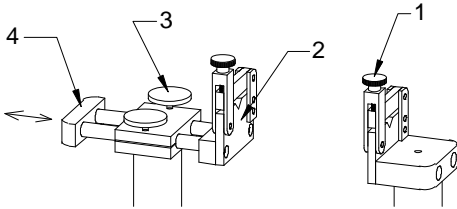


- Small position for wheel sizes diameter 400 mm - 300 mm.
For this position you only need one screw.

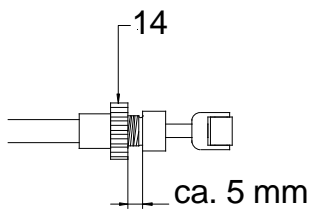
First steps



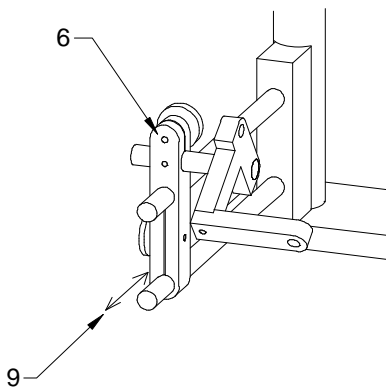
- Before you insert the wheel you must press both sensors (12) to lock them.



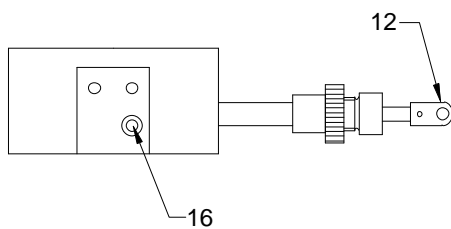
- Put the wheel in the wheel-holder (2) and adjust the axle width with the slider (4) until the wheel tight fits and then tighten with the screw (1+3).



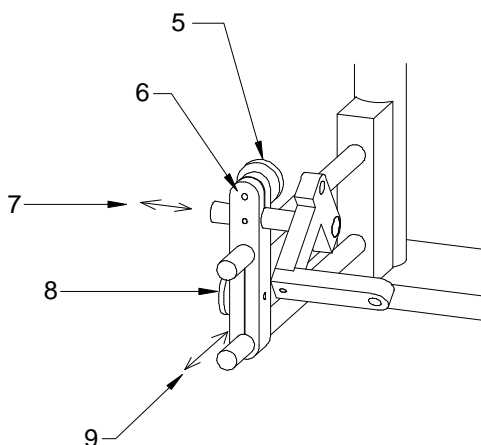
- The knurled nut (14) must be turned to half of the screw.



- Slide (9) the holder (6) until the measuring gauges are on height of the rim.



- Unlock the sensor (12) with the pull button (16). **Hold the sensor and lead it to the rim.** Only the half of the sensor (12) from the lateral gauge must lie upon the rim.



- Slide (7) the lateral gauge until the main pointer moves more or less to zero and fix it with the screw (5). Slide (9) the radial gauge until the main pointer moves more or less to - 0,5 mm, because when you tighten the screw (8) the main pointer moves near to zero.

Find the center location

With this method the sensor has to be as exact as possible at the valve hole.

For highest precision the excentricity of the wheel axle should be measured before measuring the center location, so that it doesn't have any influence on the measuring of the center position.

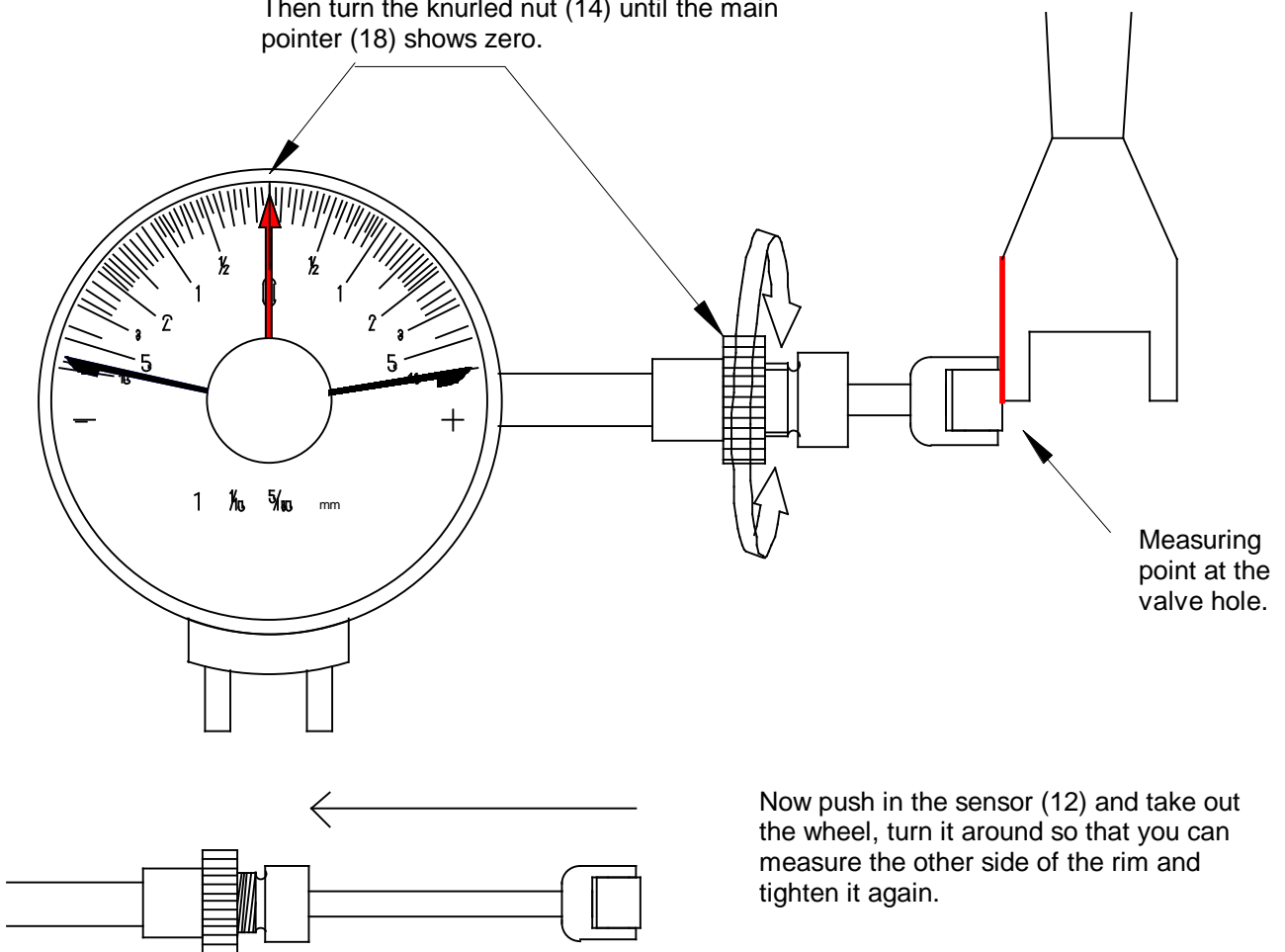
1. put the axle in the wheel holder without closing it.
2. lead the sensor of the lateral gauge to the rim and push the drag pointers to the main pointer.
3. rotate the wheel axle slowly in the wheel holder, run-outs will be shown by the drag pointers.
4. rotate the wheel axle slowly until the main pointer is in the middle of both drag pointers.
5. make a mark (for examble with a paint marker) on the top of the wheel axle.
6. every time you put in this wheel in the wheel holder you must have the mark on the top as before.
7. small excentricity failure of the wheel axle will be multiplied to the rim. With this measuring this failure has no influence on the center measuring.

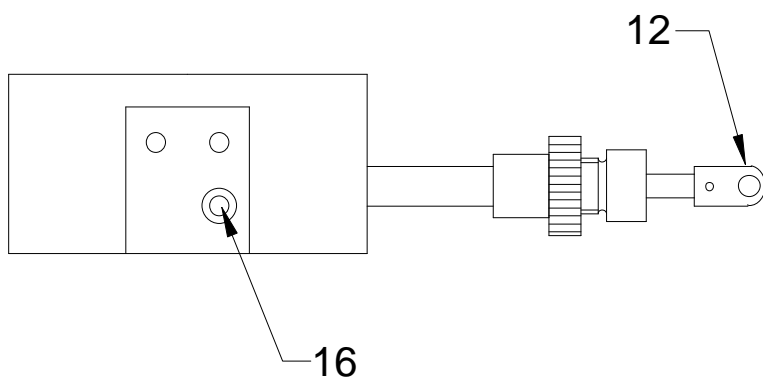
If the run-out of the wheel axle is too big, then the axle is damaged and can not be used.

Find the center location as stated below:

To determine the center location you only need the lateral gauge.
With this method the drag pointers are not needed.

Turn the fixed wheel until the sensor (12) is at the valve hole.
Then turn the knurled nut (14) until the main pointer (18) shows zero.





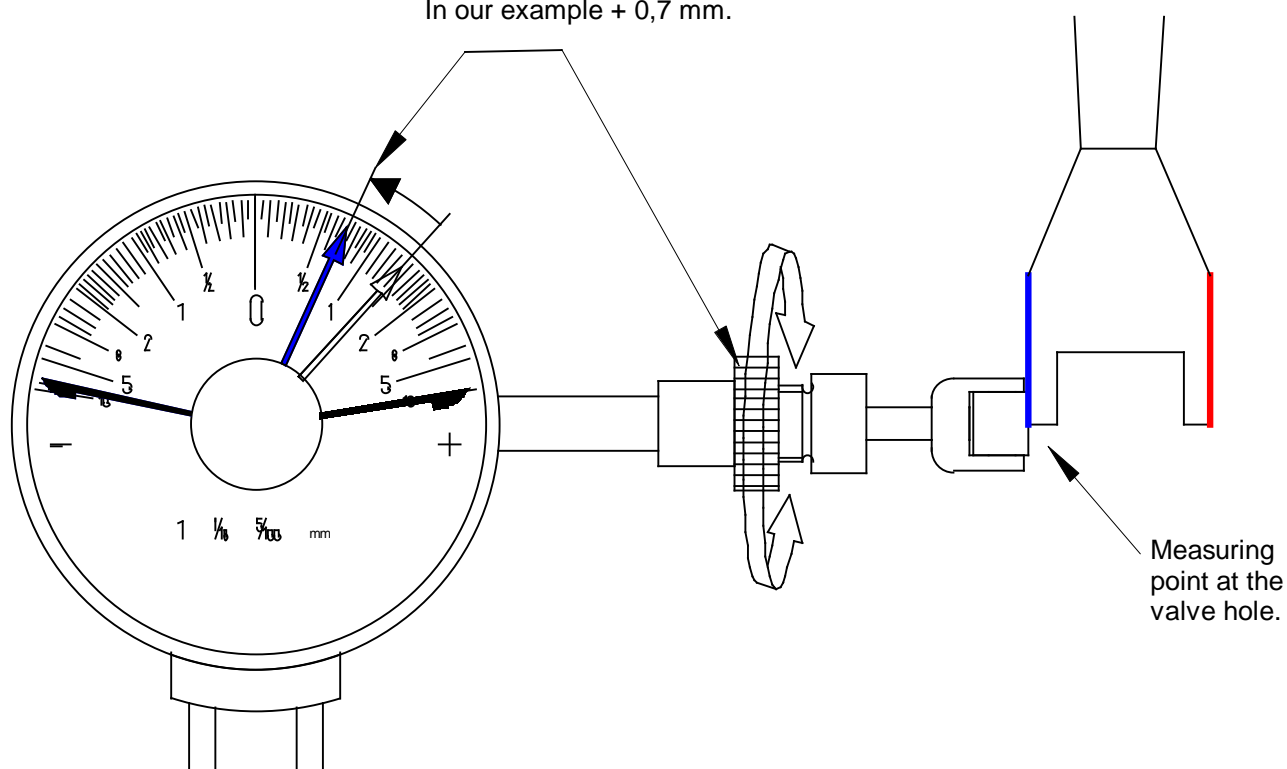
Unlock the sensor (12) with the pull button (16) and lead the sensor to the rim.

Turn the fixed wheel until the sensor (12) is at the valve hole to measure the other side of the rim. Now the main pointer shows a value which is on the right or left side of zero.

In our example it is + 1,4 mm.

Now turn the knurled nut (14) until the main pointer (18) shows the half value.

In our example + 0,7 mm.



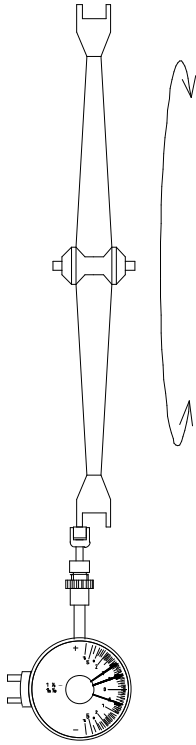
If the measurement would be for example - 1,4 mm, then you turn the main pointer until it shows - 0,7 mm.

After you have turned the main pointer to the half value, the measuring gauge is adjusted. Now zero is the center location and you can center the rim to zero.

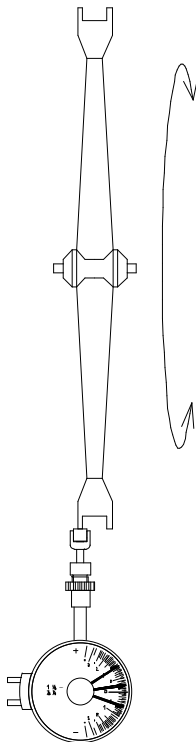
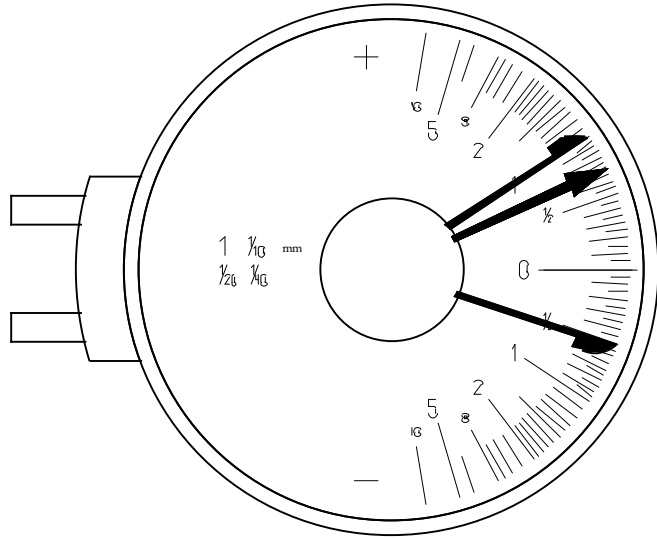
For the same type of wheel you don't need to find the center location any more.

Adjust the radial gauge

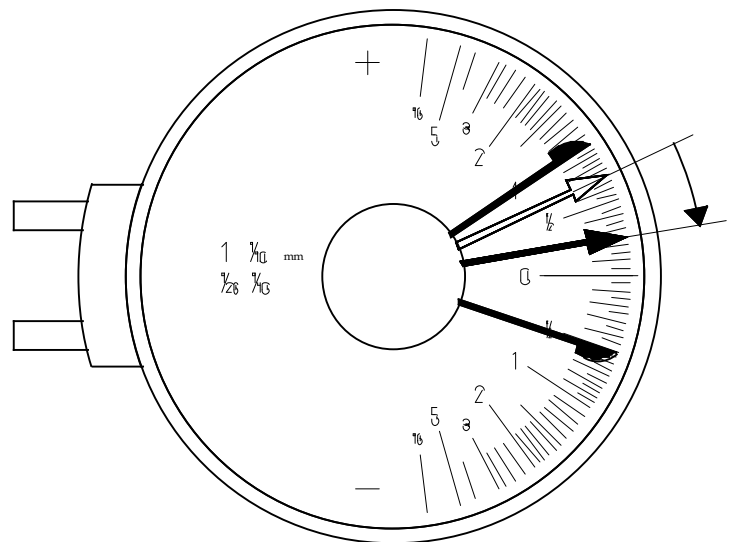
Unlock the radial sensor and press both push buttons (15) at the same time to move the drag pointers to the main pointer.



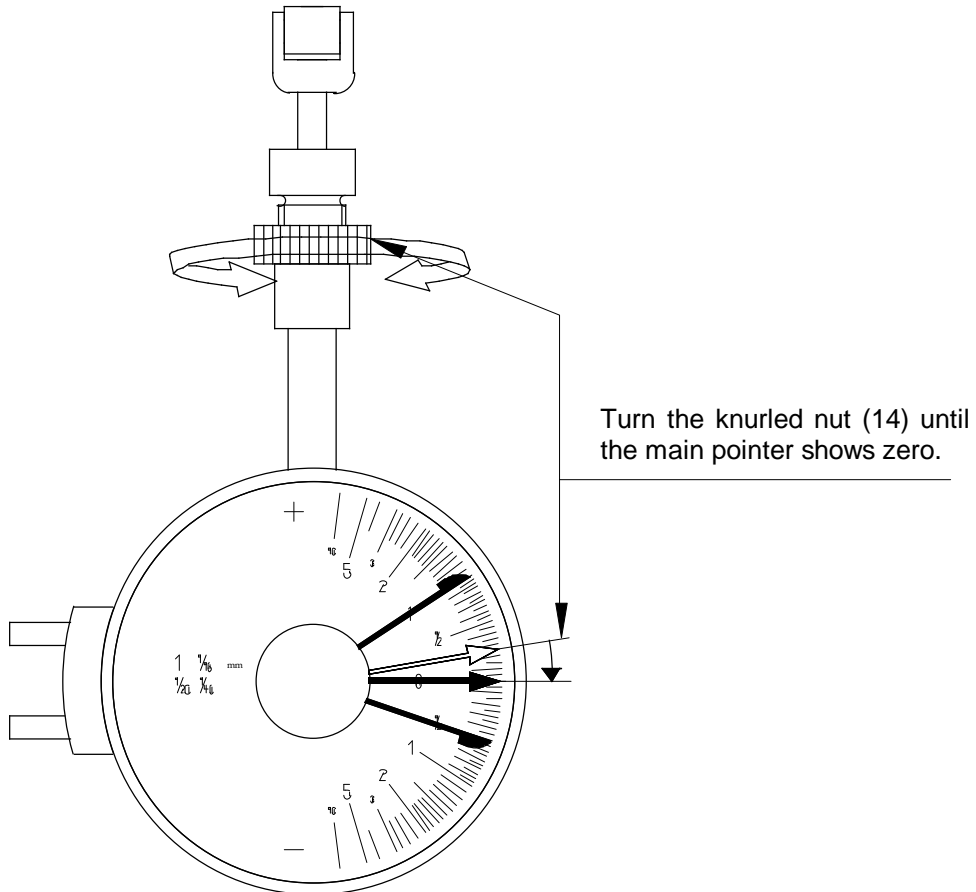
Make one full turn of the wheel to get the max. run-outs.



Turn the wheel slowly until the main pointer from the radial gauge is in the middle of both drag pointers.

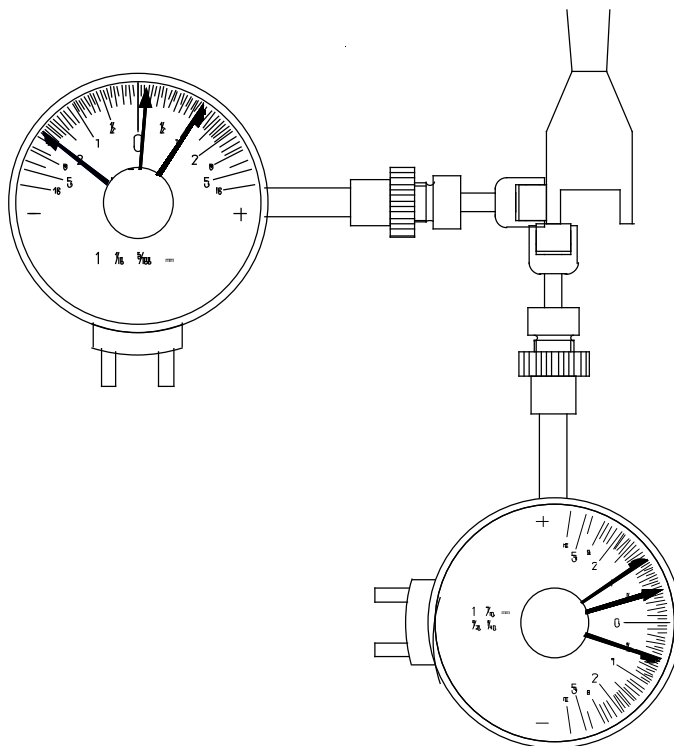


Now you must adjust the measuring gauge as stated below, so that zero is the center location.

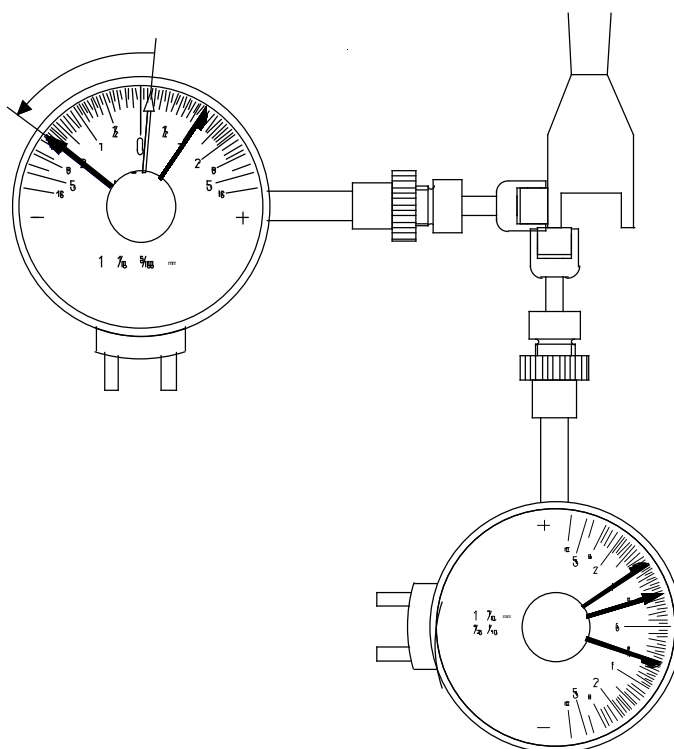


Now minimize the lateral and radial run-outs at the same time

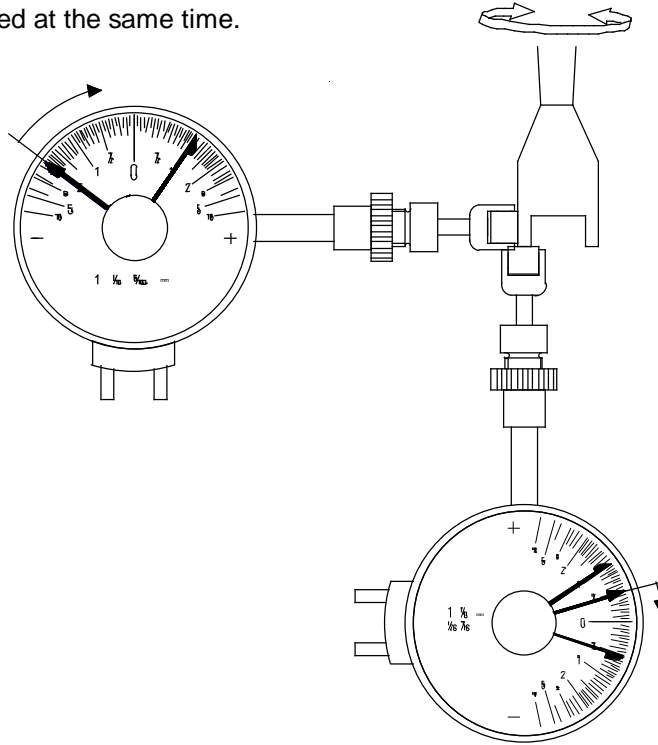
Press both push buttons at the same time to move the drag pointers to the main pointer and make one full turn of the wheel to get the max. run-outs.



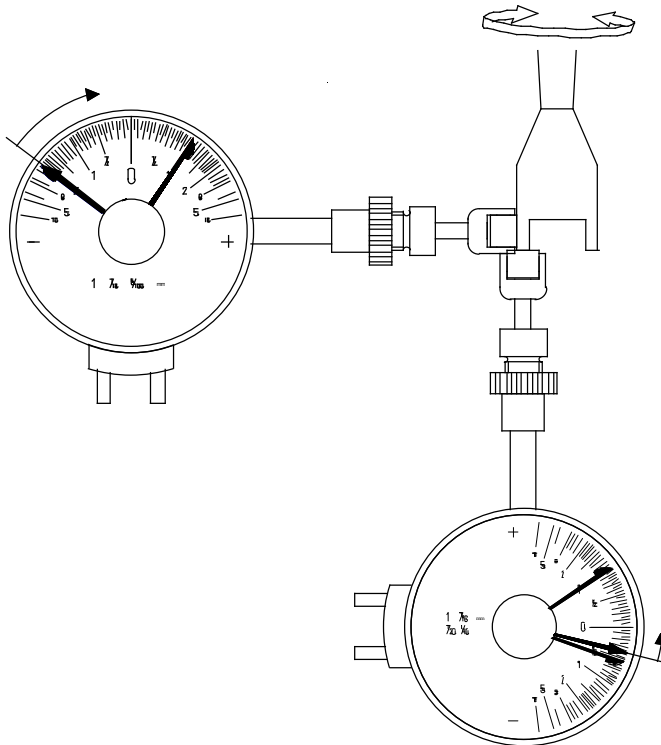
Turn the wheel until the main pointer of the lateral gauge moves to the max. run-out.



Reduce the lateral run-outs only half (if you center at once to zero you produce new run-outs) by turning the spoke nipple at the sensor. The radial run-outs will be reduced at the same time.



The main pointer of the radial gauge shows if you must tend or loose. If the main pointer is in the plus area you must loose.



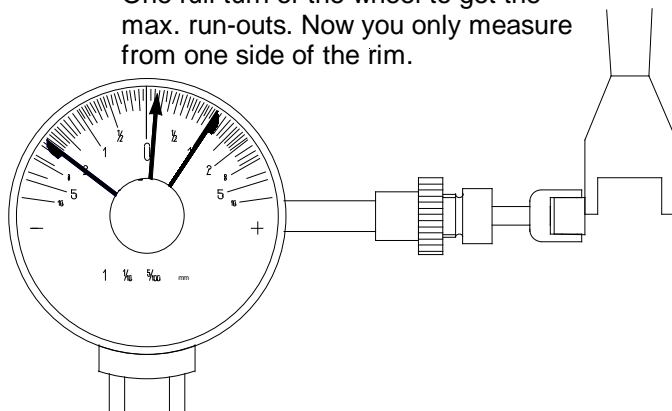
If it is in the minus area you must tend the spoke nipple

Repeat this procedure until the run-outs are minimized.

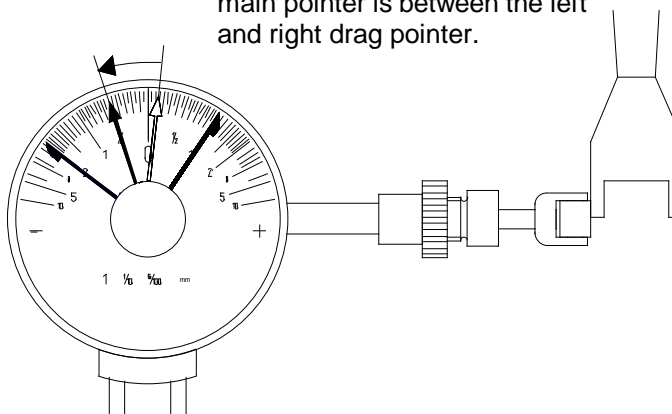
Quick wheel truing

Now you only estimate the center location. **The tolerance from the estimated center location is in the most cases smaller than +/- 0,5 mm.**

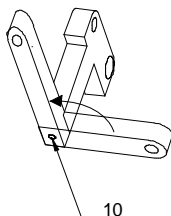
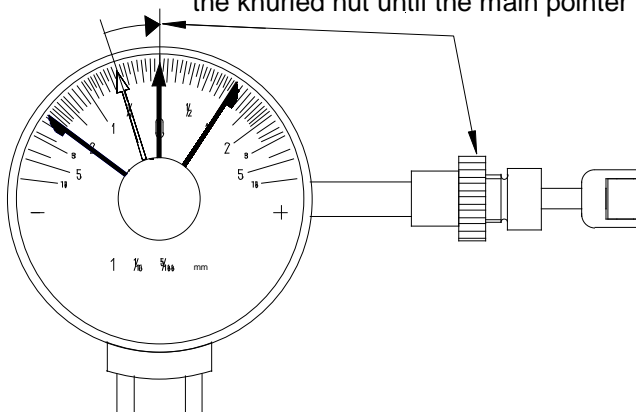
One full turn of the wheel to get the max. run-outs. Now you only measure from one side of the rim.



Turn the wheel slowly until the main pointer is between the left and right drag pointer.



To get the estimated center position on zero, turn the knurled nut until the main pointer shows zero.



If you want to true with tire then you must loosen the screw (10), then turn up the radial gauge and tighten the screw again.

Maintenance / Instructions

- The clocks only work without oil (sensor pin, push-buttons...)!
- Clean the felloe before you insert it.
- Clean the sensor if it is dirty.
- The sensors are high quality needle bearing and cannot be made of stainless steel. Therefore you must put from time to time a little oil on the needle bearing to prevent rust.
- If the push buttons are dirty clean them from outside with degreaser (take care that nothing comes into the clock).
- Clean the acrylic-glass disks only with a soft cloth.
- The brass is not treated and therefore it becomes darker. If you want to polish the brass, you should keep an eye on it that no polish runs into the clock or comes into the sensor pin.
- The brass bars from the truing stand should be polished from time to time with car- wax, so that you can move the clocks and the wheel holder easy.
- Clean the truing stand with a soft cloth.
- Don't unscrew the brass cover plate from the clocks because the push buttons and the pull button are assembled with fit.
- Only push the drag pointers to the main pointer if the wheel is standing still.
- Before you take out or insert the wheel you must push in the sensor.
- When you unlock the sensor you must lead the sensor to the rim, otherwise the sensor will slam to the rim.
- If you remove the radial gauge you must hold it with one hand.
- Before you set the clock holder higher you must remove the measuring gauges.
- The appliance must either be fixed with a clamp or with four screws in the pre-determined holes on a solid base.

Important !

Don't turn the wheel with high speed because this can damage the pointer of the gauge.

P&K Lie GmbH
Gewerbestr.2
25358 Horst/ Germany

Tel.: +49 4126 3964080
Fax: +49 4126 3964081

info@pklie.de
www.pklie.de