Shaft Alignment Vertical Machines

Introduction & Mounting

See Shaft Alignment Horizontal Machines.

Start the Program

Start the program by touching the Vertical Shaft Alignment icon in the Main Menu.

Go to the Application Set-up for settings.

Application Set-up

Settings unique for this application can be made in the Application Set-up. Which functions that are available depend on which system you have selected.

Displayed measurement value resolution

0.1, 0.01 and 0.001 mm / 1, 0.1, 0.01 mils (0.01 mils angle only).

sec

Sampling time

Sampling time from 1-99 seconds.

Screen filter

From 0 to 10, where 0 is filter off and 10 is max filter. This slows down the update frequency of the screen values without reducing the accuracy.

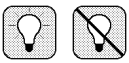
Repeatability Test

Starts the sub-function for repeatability test.

Tolerance table

Displays a table with most often used tolerances. Metric or Imperial display depending on settings for displayed units.

Contrast



Backlight

Turns on and off the screen backlight.

Confirmation

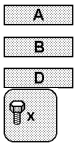
Confirms made selections and returns to the application program.

MEASUREMENT PROCEDURE

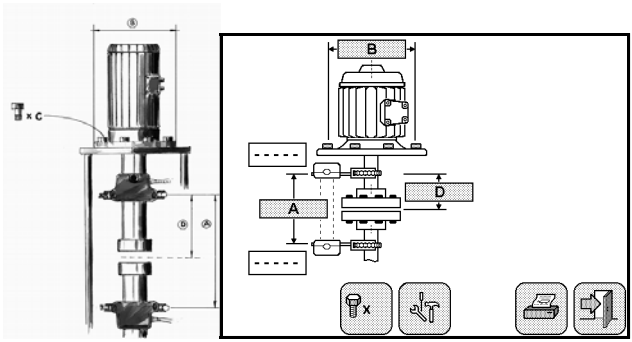
Settings unique for this application can be made in the Application Set-up. Which functions that are available depend on which system you have selected.

The vertical shaft program calculates the shims required under each bolt to correct angular error and the live display shows the corrections required for concentricity.

The screen shows the movable machine. The grey areas are data entry fields. Measure the distance between the TD units. Touch the A field and enter the value. Confirm with OK. Continue with the B value (Diameter of bolt pattern) and the number of bolts (max 8). The D measure is by default set to half the A measure, but can be changed by touching the D field and entering the correct value. Any values can be corrected if necessary.

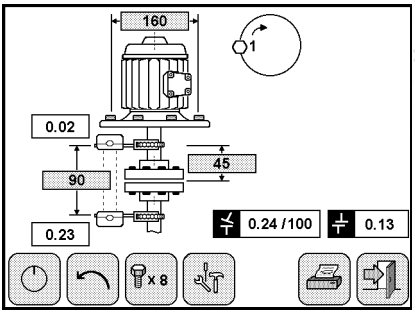


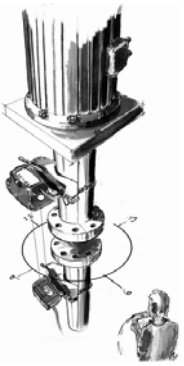
Note: The A dimension is measured from centre to centre of the rods.



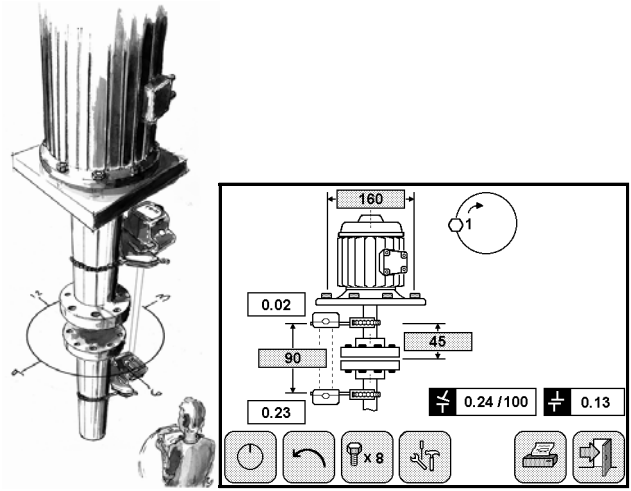
Position yourself at the position that corresponds to 6 o'clock where it is easiest to turn the shafts through 180°. Set the TD units so that they are approximately parallel at the 12 o'clock position. Turn the shafts to where the TD units are positioned at 9 o'clock and touch the 9 o'clock icon. The first bolt is at the position 9 o'clock.

Tip: Mark up the different positions before you start measuring.

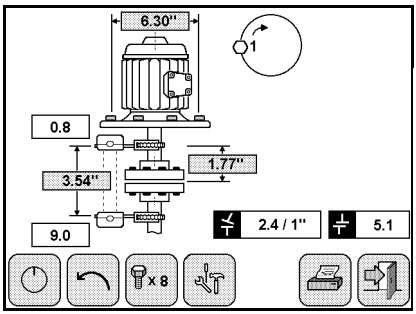


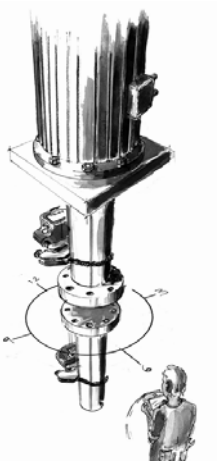


Turn the shafts 180° to the 3 o'clock position. Touch the 3 o'clock icon to register the reading. The displayed values show the current position of the machine in the 9 to 3 o'clock axis.



Rotate the shafts to the 12 o'clock position and touch the 12 o'clock icon. The displayed values show the current position of the machine in the 12 to 6 o'clock axis. The list of values displayed shows the position values for each bolt.





ALIGNMENT

Adjust the angular error by adding shims under the bolts. (Negative bolt value means that shims should be added.) The first bolt value corresponds to the bolt at the 9 o'clock position. The parallelism error is corrected using the live display.

1. Start with correction of the angular error by adding shims where required. The angular error is displayed live in the 12 to 6 o'clock axis when the TD- units are placed at 12 o'clock, and in the 9 to 3 o'clock axis when they are placed at 3 o'clock.
2. Then adjust the parallel offset in the 12 to 6 o'clock axis and 9 to 3 o'clock axis respectively. The parallel offset is displayed live in the 12 to 6 o'clock axis when the TD-units are placed at 12 o'clock, and in the 9 to 3 o'clock axis when they are placed at 3 o'clock.
3. Check that both the angular error and the parallel offset are close to zero in both directions after finishing the adjustment.
4. Alignment is now completed. To confirm the result, redo the measurement.

DOCUMENTATION

There are three possibilities to document the measurement.

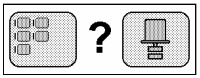
Save the measurement in the system memory. When a measurement is saved in Shaft Alignment for Horizontal Machines it is the measurement result that is stored and not the displayed measurement after performed adjustments. To store this, redo the measurement and then store it.

Print the result.

Export saved measurements to a computer.

RESUME FUNCTION

The Shaft Alignment program for Horizontal Machines is supported by a resume function, which stores all the necessary data temporarily. The resume function enters when the system is shut off automatically (auto off) or when the low battery warning is shown.



When the system is restarted after resume a selection box appears. Touch the Horizontal Shaft Alignment icon to get back to the saved data or touch the Main Menu icon to cancel and go to the Main Menu.