

Single Bearing MTBM with Pedestal Bearing

Use MOVE Function to move pedestal bearing.

This note will help you with alignment when shaft position can only be affected by shimming or moving at the pedestal bearing. Shimming or moving the stator will change the air gap, but not the shaft position.

Since the system uses a solid coupling, the coupling bolts must be sufficiently loosened prior to alignment in order to be able to read the misalignment.

Corrections at the pedestal bearing will not affect the stator, only the rotor. Consequently the air gap between them must be corrected by shimming and/or moving the stator after the rotor is in alignment.

Overview

- a) Enter dimensions in Optalign as follows:
 - Laser-to-prism: enter actual distance laser-to-prism
 - Laser-to-front foot: enter laser-to-coupling center.
 - Front-to-back foot: enter coupling center-to-pedestal bearing center.
 - Coupling center-to-prism
 - 10" Coupling diameter
- b) Take alignment readings
- c) Obtain feet corrections
 - Ignore front feet corrections
 - Record back feet corrections

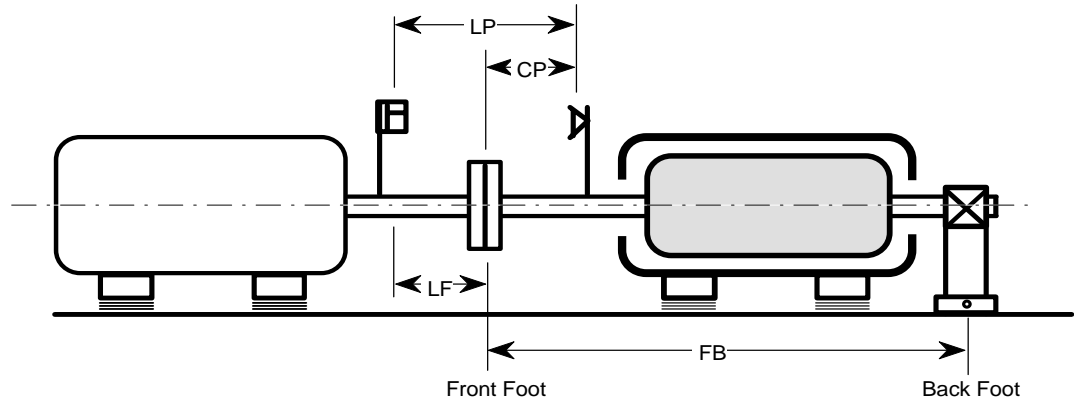
- d) Record coupling results
- e) If, from misalignment at the coupling it is determined that shimming or moving is necessary, corrections must be carried out at the pedestal bearing by the amount indicated in step "c" (back foot only). Repeat steps "b" to "e" as needed.

Once the shafts are aligned within tolerance, the air gap between stator and rotor must be corrected per manufacturer's instructions.

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Dimensions are defined in the sketch for use in the calculations.



LP = Laser-to-prism
 LF = Laser-to-coupling center
 FB = Coupling-center-to pedestal-bearing
 CP = Coupling-center-to prism
 DIA = Coupling diameter

VF = Front Foot shimming
 VB = Back Foot shimming
 HF = Horizontal front move
 HB = Horizontal back move

VO = Vertical Offset
 HO = Horizontal Offset
 VA = Vertical Angularity
 HA = Horizontal Angularity

DG = Desired gap

Alignment Procedure

- 1) **ON/OFF**, **/**, **ENT**
- 2) Enter machine dimensions as follows:
 - LP = laser-to-prism, **ENT**
 - LF = laser-to-coupling center, **ENT**
 - FB = coupling center-to-pedestal bearing, **ENT**
 - CP = coupling center-to-prism, **ENT**
 - DIA = 10", **ENT**
- 3) Take alignment readings.
- 4) **Cursor**, ignore vertical front foot correction.
- 5) **ENT**, record back foot correction (this is the shimming at pedestal bearing).
- 6) **ENT**, ignore horizontal front foot move.
- 7) **ENT**, record horizontal back foot move (this will be the amount to move of the pedestal bearing).
- 8) Divide VB by FB to obtain angular misalignment (VA): [HB by FB to obtain HA].

If angular misalignment is greater than the allowable tolerances proceed to shim or move the pedestal bearing.

To monitor the move, use Optalign's MOVE function as usual. Only the back foot display is meaningful since it represents the pedestal.

Air Gap Correction

- 1) Determine desired gap = DG
- 2) Measure gap between rotor and stator with feeler gauges.

Vertical (6 o'clock position):

Vf = gap above front foot

Vb = gap above back foot

Horizontal (9 o'clock position):

Hf = gap above front foot

Hb = gap above back foot

- 3) Front shim = Vf - DG
 Back shim = Vb - DG
 If vertical correction is positive, add shims.
- 4) Front move = Hf - DG
 Back move = Hb - DG

If move is positive, move to 3 o'clock

Use dial indicators to monitor the stator move.