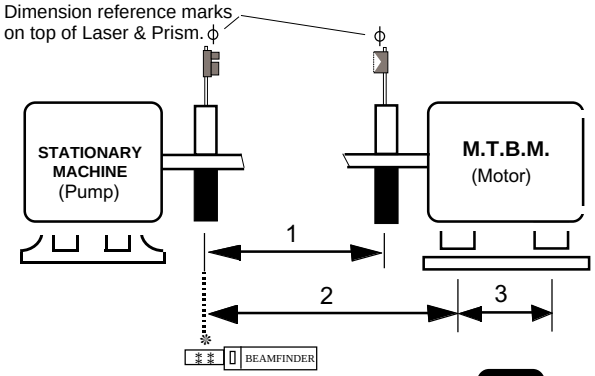
2. Enter Dimensions

All dimensions are entered as fractions to the nearest 1/8". For example: 9-3/4 press **9 3 / 4**



1. Laser to Prism — press **ENT**
   (Reference mark ϕ to reference mark ϕ)
2. Laser to front foot on Motor — press **ENT**
   (Use laser Beamfinder & side beam for accuracy! Press the **CAL** button once for 15 seconds of side beam & twice for a full 60 seconds! **RCL** cancels!)
3. Front foot to back foot bolt centers — press **ENT**

3. Measure (M)

Measure Mode & Laser turns on with the entry of the front to back foot dimension above!

Holding the Beamfinder flush with the top of the Prism adjust the Prism up/down on the support posts until all 4 LED's are lit. Remove the Beamfinder & watching the display screen, adjust side-to-side with thumbwheel & fine adjust the Prism up/down until 0.0 0.0 is displayed.

3a. Soft Foot Check (Most Important!)

1. Press **F** **1** rotate shafts to 3 or 9 o'clock.
2. Adjust prism until 0.0 0.0 and press **BK/FT**.
3. Use the **BK/FT** key to select a foot & zero the display, loosen the bolt, **using form #01-888-01** record the movement (shaft centerline) and retighten bolt. Repeat this step for all four feet. *Important! Do not use the numbers that you have recorded as soft foot corrections as they are the shaft centerline movement!* Using feeler gages, or shim stock, fix the foot with the largest number & reduce the Soft Foot to 2.0 mils (.002").

Note: The largest number is usually the Soft Foot!

3b . Measure continued — Press (M)

1. Rotate shafts to 12 o'clock using the Inclinometer(s).
2. Adjust Prism until 0.0 0.0
3. Measure at least three of the four clock positions as shown below. The clock positions may be taken in any order as long as backlash is controlled!

At **12:00** o'clock press (M) **0** **ENT**

At **3:00** o'clock press (M) **3** **ENT**

At **6:00** o'clock press (M) **6** **ENT**

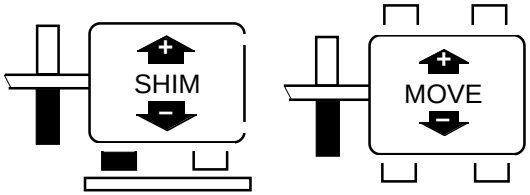
At **9:00** o'clock press (M) **9** **ENT**

Note: Take two sets of readings to establish repeatability.

4. Foot Corrections — Press RUN

The front foot shim correction is now displayed. Both front feet (both sides) & both back feet get shimmed the amount shown for that particular foot (or end). The **ENT** key cycles through vertical shimming and horizontal move corrections.

Note: Use form # 01-688-02 to record the Shim & Move Corrections.



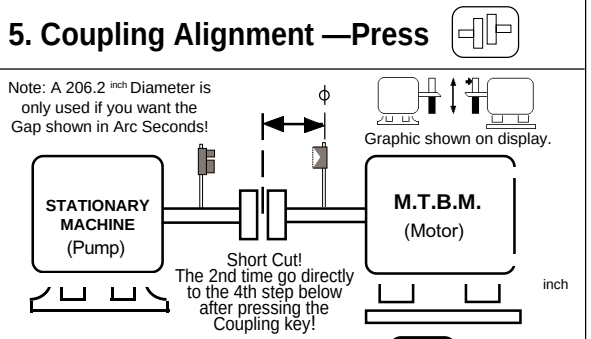
Vertical (Side View) **Horizontal** (Top View)

After shimming the vertical values shown, retake readings, and move the Motor (MTBM) horizontally.

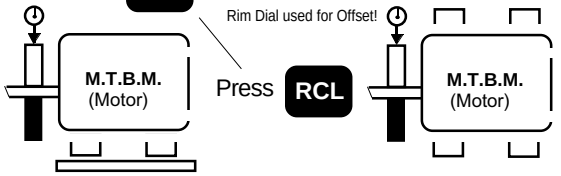
For large horizontal moves adjust horizontally before shimming. If you are having trouble making your horizontal move you probably need to check Soft Foot again by going back to step **3a**!

Note: It is a good idea to record the Coupling Alignment Results before doing any corrections — go to step 5.

5. Coupling Alignment —Press



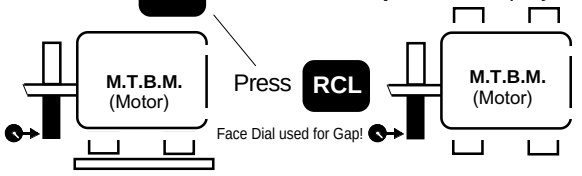
1. Coupling Center to Prism press **ENT**
   (Coupling center to reference mark ϕ)
2. Coupling Diameter — Use 10" press **ENT**
3. Press **RCL** verify 10", press **RCL** verify the Coupling Center to Prism. Next - the Alignment!
4. Press **RCL** the **Vertical Offset** is now displayed.



Vertical Offset **Horizontal Offset**

\+ A positive number indicates the Motor's Centerline is Offset towards 12 or 3 o'clock — at the Coupling. A negative number indicates the Motor's Centerline is Offset towards 6 or 9 o'clock — at the Coupling. *Important! This does not mean the Motor itself! This means the Motor's Centerline as it intersects the Stationary's (Pump's) Centerline at the Coupling!*

Press **RCL** the **Vertical Gap** is now displayed.



Vertical Gap **Horizontal Gap**

\+ A positive number indicates the Coupling is open towards 12 or 3 o'clock. A negative number indicates the Coupling is open towards 9 or 6 o'clock. Note: The Gap is displayed at the coupling diameter you entered — 10"!

Tip: The **RCL** key cycles through the Alignment Results and the **ENT** key reverses direction!

— continued on next panel —

5. Continued — Tolerance Check

Now compare your alignment against the Tolerance Table.

TOLERANCES FOR SHAFT ALIGNMENT (±)

RPM	OFFSET (mils)		GAP (mils/10")		SPACER SHAFT (mils/in.)	
	Excellent	Acceptable	Excellent	Acceptable	Excellent	Acceptable
600	5.0	9.0	10.0	15.0	1.8	3.0
900	3.0	6.0	7.0	10.0	1.2	2.0
1200	2.5	4.0	5.0	8.0	0.9	1.5
1800	2.0	3.0	3.0	5.0	0.6	1.0
3600	1.0	1.5	2.0	3.0	0.3	0.5
7200	0.5	1.0	1.0	2.0	0.15	0.25

All RPM: Maximum Soft Foot Reading 2.0 mils. (1 mil = .001")

Note: These suggested tolerances should be used only if OEM machinery manufacturer or in-house tolerances are not available.

If within required tolerances, the machine is aligned!

If out of tolerance, you need to shim & move!

6. Horizontal Move

Do Not Loosen the Bolts Yet!

1. Press **RUN** and then press **H/V**.
2. To start Press **MOVE**, facing the Laser, rotate the shafts to the 1:30 o'clock position (45˚).
3. Adjust Prism until 0.0 0.0, press **MOVE** again.
4. Loosen the bolts leaving a little pressure on the washers and move the end with the flashing foot until both front and back feet are positioned satisfactorily. If necessary, leave a pivot bolt tight in order to control the moves.

   Note: Watch closely as the flashing foot will switch to the other end when that foot's correction becomes double the foot being moved!
5. Retighten the bolts— carefully!

Important: If the numbers change significantly when you retighten the bolts, you probably need to check Soft Foot again by going back to step 3a!

7. Recheck, go step 3b and Press M

★ Optalign IR — *Special Functions* ★

EXTENDED RANGE FEATURE — END / BEG

(Measurement & MOVE Interrupt Function)

1. Measure first clock position **M** **0** **ENT**
2. Rotate – If End or Off appears on screen go back until you see x & y numbers. (Control Backlash!)
3. Press **END**

Note: For best results DO NOT let shafts rotate.

4. Set 0 (Adjust Prism until 0.0 0.0)
5. Press **BEG**
6. Continue rotation to next clock position.
7. Measure next clock position **M** **3** **ENT**
8. Continue rotation to next clock position. This Extended Range feature may be used up to 10 times in one Measure (or MOVE) procedure. Note: Do not repeat any clock measurements as all measured values are being accumulated.

SEMI-AUTOMATIC MEASUREMENT SHORT CUT

(Continuously rotating shafts)

Press **F** **2** for clockwise measurement.

Press **F** **3** for counter-clockwise.

Then after Pressing **M** Press **ENT** only — at each clock position!

Your local contacts — Norm & Bev Voelzow

Voelzow & Company, Inc.

P. O. Box 0158 • Wingate, NC 28174

Phone: 704-233-9222 • Fax: 704-233-9211

E-Mail: voelzow@perigee.net

Web: http://www.LaserAlignment.net/

US Distributor

LUDECA, Inc.

1425 N.W. 88th Avenue, Miami, FL 33172

Phone: 305-591-8935 • Fax: 305-591-1537

Web: http://www.ludeca.com/

E-Mail: webmail@ludeca.com

Manufacturer

Prüftechnik AG Ismaning, Germany

Web: http://www.pruftechnik.com/

Master courtesy of: Voelzow & Company, Inc. Wingate, NC 704-233-9222

optalign® *(IR Invisible Beam)*

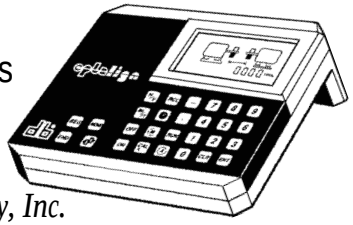
Short Instructions

for Version 1 (rev. b)

by

Voelzow & Company, Inc.

704-233-9222

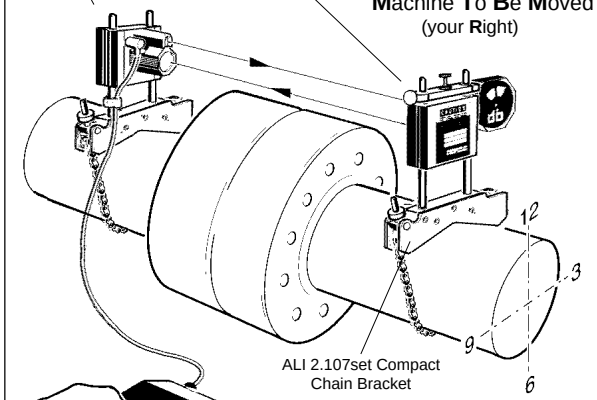


Note: This form is used with the Invisible Beam ALI 2.610 Optalign® IR System only and is used as a companion to the Alignment recording form # 01-688-02 and Soft Foot recording form # 01-888-01!

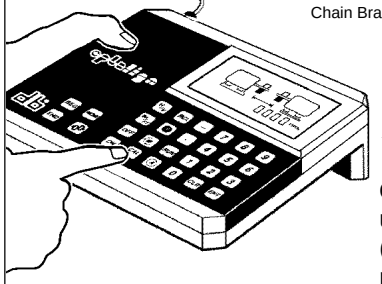
1. Mount OPTALIGN® & Press ON / ENT

Laser is always mounted on the Stationary Machine (your **L**eft)

Prism is always mounted on the **M**achine **T**o **B**e **M**oved (your **R**ight)



ALI 2.107set Compact Chain Bracket



Computer is always used on the 9 o'clock (left) side of the machine.

Note: Use Inclinometers on both shafts if there is coupling backlash or when aligning uncoupled.