



Converting Reverse Indicator Readings into Optalign Targets

This note shows you how to calculate and enter Optalign targets (intentional misalignment at coupling) if given desired indicator readings from reverse indicator method.

Overview

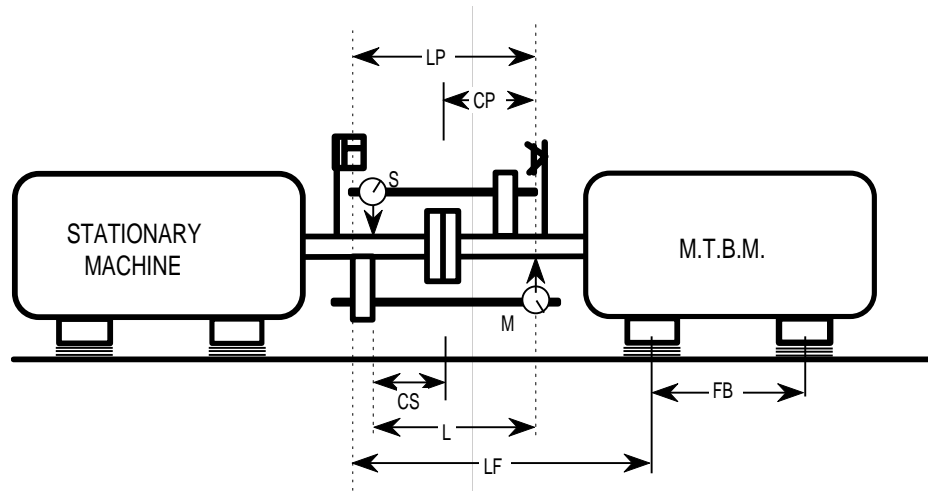
The indicator readings will be given at the indicator stems, and must be converted into Optalign coupling results. The calculated results will be entered as Optalign targets in the coupling function.

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LP = Laser-to-prism
 LF = Laser-to-front
 foot
 FB = Front-to-back
 foot
 CP = Coupling-center
 to-prism
 DIA = Coupling
 diameter
 MS = Sag of indicator
 foot on MTBM
 L = Distance between
 indicator feet
 CS = Coupling center to
 plane of S indicator



VOt = Vertical Offset
 target
 HOt = Horizontal
 Offset target
 VAt = Vertical
 Angularity target
 HAAt = Horizontal
 Angularity target

Procedure

- 1) **ON**, **/**, **□**
- 2) Enter distance CP, **ENT**
- 3) Enter 10" DIA. **1**, **0**, **ENT**
- 4) Calculate:

- 13) Enter LF, **ENT**
- 14) Enter FB, **ENT**
- 15) **RUN**, Optalign will display feet corrections. Record.
- 16) **□**

S0 = Reading from
 indicator S at 12:00
 S3 = Reading from
 indicator S at 3:00
 S6 = Reading from
 indicator S at 6:00
 S9 = Reading from
 indicator S at 9:00
 SS = Sag of indicator
 foot on STAT
 machine

$$VOt = \frac{(S0 - S6 + SS + M0 - M6 + MS) CS - (S0 - S6 + SS)}{2L} - \frac{(S0 - S6 + SS)}{2}$$

$$HOt = \frac{(S3 - S9 + M3 - M9) CS - (S3 - S9)}{2L} - \frac{(S3 - S9)}{2}$$

$$VAAt = -\frac{(S0 - S6 + SS + M0 - M6 + MS)}{2L} \times 10$$

$$HAAt = -\frac{(S3 - S9 + M3 - M9)}{2L} \times 10$$

M0 = Reading from
 indicator M at 12:00
 M3 = Reading from
 indicator M at 3:00
 M6 = Reading from
 indicator M at 6:00
 M9 = Reading from
 indicator M at 9:00

- 5) Enter VOt, **ENT**
- 6) Enter HOt, **ENT**
- 7) Enter VAAt, **ENT**
- 8) Enter HAAt, **ENT**
- 9) Activate measure mode, **(M)**
- 10) Take misalignment readings in at least 3 clock positions.
- 11) Optalign will display laser-to-prism depiction
- 12) Enter LP, **ENT**

- 17) **RCL**, **RCL**, **RCL**, and record VO, HO, VA, HA.
- 18) If alignment is not within desired tolerances make corrections and repeat steps 10 through 14.

Example:

LP = 24" CP = 15"
LF = 26" CS = 8"
FB = 20" L = 22"

Indicators Readings

S0 = -10 M0 = 0
S3 = -2 M3 = 1
S6 = 6 M6 = 2
S9 = -2 M9 = 1
SS = -4 MS = -4

$$VOt = \frac{(-10-6+(-4)+0-2+(-4)) \times 8 - (-10-6+(-4))}{2 \times 22} \times 8 - \frac{(-10-6+(-4))}{2}$$

$$= \frac{(-20-6) \times 8 - (-10)}{44}$$

$$= \frac{-26 \times 8 + 10}{44} = -4.7 + 10$$

$$= 5.3 \text{ mils}$$

$$HOt = \frac{(-2-(-2) + 1 - 1) \times 8 - (-2 - (-2))}{2 \times 22} \times 8 - \frac{(-2 - (-2))}{2}$$

$$= \frac{(-2 + 2 + 1 - 1) \times 8 - (-2 + 2)}{44} \times 8 - \frac{(-2 + 2)}{2}$$

$$= 0 \text{ mils}$$

$$VAAt = \frac{-(-10 - 6 + (-4) + 0 - 2 + (-4)) \times 10}{2 \times 22}$$

$$= \frac{-(-26) \times 10}{44}$$

$$= \frac{26 \times 10}{44}$$

$$= 5.9 \text{ mils/10"}$$

$$HAAt = \frac{-(-2 - (-2) + 1 - 1) \times 10}{2 \times 22}$$

$$= \frac{-(-2 + 2 + 1 - 1) \times 10}{44}$$

$$= 0 \text{ mils/10"}$$