Shaft Hog Alignment General Guidelines

The Shaft Hog works exactly like a reverse dial indicator alignment except two laser sensors take the place of the dial indicators and the user does not have to do any alignment calculations. The values are always live so as you are making the adjustments you can watch the results.

The process is do the pre-alignment checks (see essential pre-alignment checks) then measure the alignment quality (angularity and offset) in both the horizontal and vertical directions. This only requires two readings 180 degrees apart. After the initial measurements, when the sensors are oriented in the vertical plane (up and down) the Shaft Hog is reading live vertical values and when the sensors are oriented in the horizontal plane (side to side) the Shaft Hog is reading live Horizontal values. If the tolerances, based on the machine speed, are not satisfied you adjust the feet towards zero, based on the values calculated by the Shaft Hog. This is done in two steps, typically vertical first followed by horizontal. Vertical correction is done by adding or taking away shims based on the Shaft Hog feet (F1 and F2) values. The sensors are positioned in the vertical plane and the F1 and F2 feet values tell the user the shim change required. The values are live so the Shaft Hog will update as changes are made. The sensors are then rotated over to the horizontal plane and the feet (F1 and F2) are again adjusted towards zero by moving the feet side to side while viewing the live values on the Shaft Hog. F1 is the front feet and F2 is the rear feet.

The Shaft Hog conventions are as follows. If the user stands behind the Moveable (typically the motor) and looks towards the Stationary the clock positions are just like looking at a clock. 9 o'clock to the left, 3 o'clock to the right and 12 o'clock straight up and down. The sign convention is a standard x/y coordinate system with plus being up and to the right and minus being low and to the left. This means that with the sensors oriented vertically negative feet values tell the user to add shims and positive values tell the user to remove shims. If the sensors are then rotated toward 3 o'clock positive values would mean the machine is sitting away from the user and needs to be moved toward the user and negative values mean the machine is sitting toward the user and needs to be pushed away from the user.

Another easy method to remember signs when doing the alignment is to stand on the side of the machine so the moveable machine is to your right. In this case the clock positions are 9 o'clock toward the user, 3 o'clock away from the user and 12 o'clock straight up and down. The sign convention is a then plus being up (when vertical) and away (when horizontal) from the user and minus being down (when vertical) and toward (when horizontal) the user. This means that with the sensors oriented vertically negative feet values tell the user to add shims and positive values tell the user to remove shims. If the sensors are then rotated toward 3 o'clock positive values would mean the machine is sitting away from the user and needs to be moved toward the user and negative values mean the machine is sitting toward the user and needs to be pushed away from the user.

Alignment quality is determined by knowing the machine speed and comparing the angularity and offset in both the horizontal and vertical directions to the tolerances established based on the speed. Here is a generally accepted tolerance table.

	Angular Misalignment Mils per inch .001/1"		Offset Misalignment Mils .001"	
RPM	Excellent	Acceptable	Excellent	Acceptable
3600	0.3/1"	0.5/1"	1.0	2.0
1800	0.5/1"	0.7/1"	2.0	4.0
1200	0.7/1"	1.0/1"	3.0	6.0
900	1.0/1"	1.5/1"	4.0	8.0