



M & M Sports Center, Inc.  
5824 US 131  
S. Boardman, Mi 49680  
(231) 369-4300  
Fax: (231) 369-4326  
Website: formulax-1.com  
Email: mandmsportscenter@gmail.com

### Process to determine shaft alignment

Turn off all ignition switches to prevent the engine from starting. Remove the drive belt and drive clutch. Using a dial indicator, check the run out on the secondary fixed sheave. It should be within .005" or less. Excessive secondary run out will result in inaccurate measurements. Install the target plate on the crankshaft with the bolt provided and snug it so the plate won't slip on the crank.

### Crankshaft horizontal measurement

#### Step 1.

Rotate the crank so that the target is opposite of, and in line with, the plane of the crankshaft and jackshaft centers, fig 1. Place the measuring bar across the secondary and the tip on the dial indicator on the target, fig 2. Rotate the indicator dial so it reads zero. Remove the alignment bar, being careful not to move the indicator dial.

#### Step 2.

Rotate the crank shaft 180 degrees. The target should now be between the centerline of the crankshaft and jackshaft. Without moving the indicator dial, measure the target (fig 3.) as was done in the previous step. Record the measurement. It may be greater, or less than, the measurement taken in step taken in step 1.

Figure 1.



Figure 2.

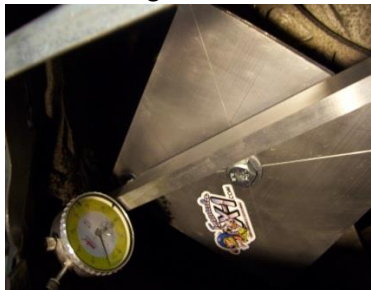


Figure 3.



## Crankshaft vertical measurement

### Step 3.

Rotate the target so that it is 90 degrees up from the plane of the crankshaft and jackshaft centers. Place the measuring bar across the secondary and the tip on the dial indicator on the target, fig 4. Rotate the indicator dial so it reads zero. Remove the alignment bar, being careful not to move the indicator dial.

### Step 4.

Rotate the crank shaft 180 degrees. Without moving the indicator dial, measure the target (fig 5) as was done in the previous step. Record the measurement. It may be greater, or less than, the measurement taken in step taken in step 3.

Figure 4.



Figure 5



## Engine alignment general information

Compare the manufacturers published specification to the measurements taken.

Generally on motors that move back toward the secondary under load, the measurement taken in step 2 will usually be  $-.045''$ . Motors that have torque limiting devices, will usually be in the  $.010$  to  $.030''$  range. On motors that are mounted solid and motors with a TCL should be  $.000''$ .

In most cases, the crankshaft vertical measurement difference should be zero.