

Setting TDC on a Balancer

By Motion Raceworks

Note: this concept and step by step method will work for any engine (not just LS)

Step 1: Set Piston Stop in Spark Plug Hole on Cylinder 1 so that it touches 20-30 degrees before where you believe TDC is. This will allow the Piston stop to hit in two spots in the 360 degree engine rotation (see video for more info)

Step 2: Remove Intake and Exhaust Rocker on Cylinder 1

Step 3: Roll Engine and record what degrees the piston stop touches the piston in both places.

Step 4: Use this equation to determine where zero actually is in relation to your pointer.

Equation:

$$(\text{Stop 1} + \text{Stop 2} - 360) / 2 = X \text{ (degrees)}$$

For example:

Stop 1 is 330 degrees on the balancer where it hits the piston stop

Stop 2 is 26 degrees on the balancer where it hits the piston stop

$$(330 + 26 - 360) / 2 = X$$

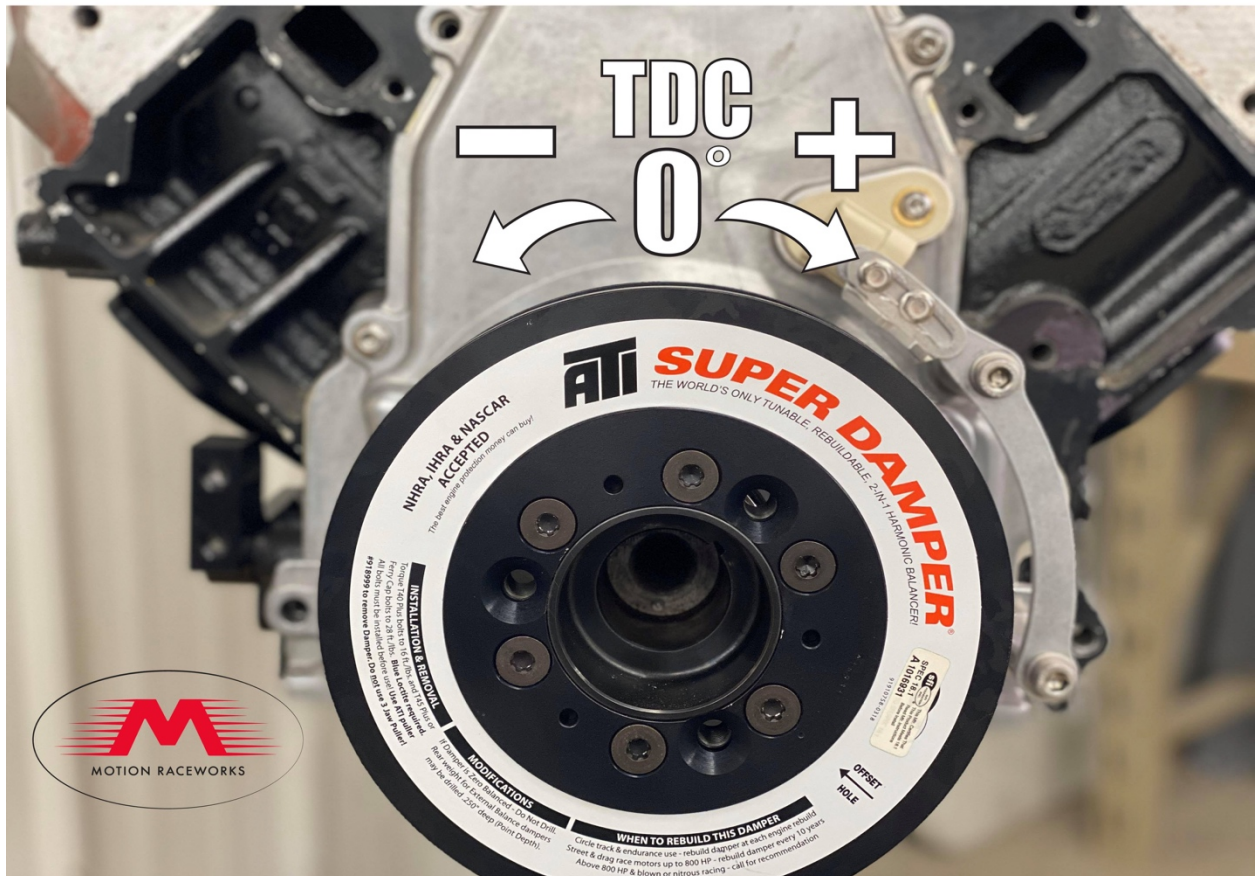
$$\text{Turns into } -4 / 2 = X$$

$$\text{Turns into } -2 = X$$

This means where the timing pointer currently is at -2 is the real zero.

Step 5: Turn the engine so that the pointer is at -2 (see diagram below to reference where -2 is). -2 degrees is 2 degrees before TDC or 358 degrees on the balancer.

In contrast, if you had a positive 2 value, 2 degrees after zero would be your zero.



Step 6: Now that the pointer is pointing at -2 degree before TDC (BTDC) or 358 degrees, this is your real zero. Now loosen your timing pointer and move the pointer to zero degrees. This will be a definite without a doubt TDC for your engine.

*****Note:** *If you ever remove this timing pointer, please repeat the process and reset/confirm TDC and reset zero.****