



# NORRIS

## Cycle Products

### MOTORCYCLE CAM TIMING & INSTALLATION INSTRUCTIONS

- I. Use a degree wheel, dial indicator for installation. This method is best. (Norris non-breakable fiberglass Degree Wheels are available at \$5.95 each.)
- II. Find Top Dead Center (TDC)  
For Singles: Locate piston at top of cylinder when both valves are closed.  
For Twins & Multiple: Locate right hand piston at top of cylinder when both valves are closed.  
& Multiple: (TDC-compression stroke)  
Cylinders
- III. Methods to Find Accurate TDC.
  - A. The Dial Indicator Method.
    1. Place a dial indicator so that it locates on top of piston, when the piston is at top of cylinder. Be sure indicator is very secure.
    2. Place degree wheel on crankshaft & tighten in place. Be sure to have a pointer (wire, etc.) to indicate on zero.  Zero is now not accurate, but only approximate.
    3. Zero the dial indicator with about .050" to .100" preload. This is to place some pressure against the piston.
    4. Rotate engine forward so that dial indicator moves .005" and make a notation as to what the degree wheel reads.
    5. Now rotate the engine in reverse direction, so that degree wheel & dial indicator zero up again, and continue in reverse direction until dial indicator again reads .005". Take another reading on the degree wheel. You now have two readings.
    6. Determine what point is the center between the two readings. (Example: 8° in forward direction; 6° in the reverse direction.  $8^\circ + 6^\circ = 14^\circ$ .  $14/2 = 7$ ,  $8^\circ - 7^\circ = 1^\circ$ ) Deduct difference from larger number. Place pointer on the 1° mark (on the 8° side of the zero, not the 6° side) with pointer in place, loosen the nut holding the degree wheel, rotate degree wheel so that the zero lines up with the pointer and lock in place. Be Careful Not To Move Crankshaft When Doing This!
  - B. Positive-Stop Method.
    1. Place a bar of metal with a screw down thru the center of it across the top of the cylinder () Lock bar down securely. Place degree wheel on as per III A-2.
    2. With piston up close to top of cylinder turn screw down until it touches top of piston. Turn crankshaft so that piston is up firmly against the stop screw. Take a reading on the degree wheel.
    3. Rotate engine in opposite direction so that piston goes all the way to the bottom of its stroke and comes up again to rest against the stop-screw. Take another reading off the degree wheel. Set the pointer to half way in between the two readings. Now loosen degree wheel and line up the zero with the pointer.
- IV. Install cam on your stock timing marks.
- V. Timing Cam/s In.
  - A. Cams can be checked either with head/s installed at the valves or can be checked directly at the lifters. Checking at the lifter is the most convenient and accurate way.