

## PRO DEGREE WHEEL

#6120 .

### Installation Instructions

#### FINDING TOP DEAD CENTER

1. Locate Top Dead Center (TDC) by using one of three methods. (1) positive stop, (2) dial indicator, (3) positive stop through spark plug hole with heads installed.

Bolt a pointer to cylinder block. A heavy wire or metal strip pointer, heavy enough to hold a permanent position. If cylinder heads are removed, use either a positive stop or dial indicator.

2. Find the highest point of piston travel and tighten degree wheel with TDC (0) mark in line with pointer. Now securely mount positive stop or dial indicator to top of block. Rotate engine clockwise until piston touches. Stop, check reading on degree wheel.
3. Rotate engine counter clockwise until piston touches. Stop again, check reading on degree wheel. TDC is halfway between the stop readings divided by two. Use a specific reading on the dial indicator to achieve the same use as a positive stop.
4. The method used with cylinder heads installed is accomplished by welding or brazing a rigid rod onto the bottom of a spark plug, so when tightened into spark plug hole, will extend into cylinder bore approximately 1/2". Then follow procedure used with positive stop method.

#### CHECKING CAMSHAFT TIMING

1. Install camshaft, timing gears, timing chain, and align timing marks in usual manner using factory timing marks. Install pointer and degree wheel. Find TDC using one of three methods described in instructions above.

Insert intake and exhaust lifters for cylinder being checked. Mount dial indicator (one with one inch of travel recommended), securely to the cylinder block, keeping indicator stem aligned with travel of lifter.



## FINDING TOP DEAD CENTER

Find Top Dead Center (TDC) by one of three methods. (1) positive stop. (2) dial indicator. (3) positive stop through spark plug hole with heads installed. Bolt a pointer to cylinder block. A heavy wire or metal strip pointer, heavy enough to hold a permanent position. If cylinder heads are removed, use either a positive stop or dial indicator.

Find approximate highest point of piston travel and tighten degree wheel with TDC (0) mark in line with pointer. Now, securely mount positive stop or dial indicator to top of block. Rotate engine clockwise until piston touches. Stop, check reading on degree wheel.

Rotate engine counter clockwise until piston touches. Stop again, check reading on degree wheel. TDC is half-way between the stop readings divided by two is TDC. Use a particular dial indicator reading on a dial indicator to achieve the same use as a positive stop.

The method used with cylinder heads installed is accomplished by welding or brazing a rigid rod onto the bottom of a spark plug, so when tightened into spark plug hole, will extend into cylinder bore approximately 1/2". Then follow procedure used with positive stop method.

## CHECKING CAMSHAFT TIMING

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2. Starting with intake lifter, rotate engine (using flywheel or flywheel end of crankshaft such will not disturb degree wheel) so lifter is on heel of cam lobe or all the way down. Set dial indicator on top of lifter, compressing stem of dial indicator at least .020 of travel. Adjust dial so needle points to "0".

3. Rotate engine in normal running direction until dial indicator needle reaches checking clearance or tappet clearance recommended by camshaft manufacturer (usually listed on timing card supplied with camshaft). Note reading on degree wheel. This should correspond with manufacturer's intake opens specifications.

4. Continue rotating engine in same direction until dial indicator reaches checking clearance (lifter in closing position). Note reading on degree wheel again. This should correspond with manufacturer's intake closes specifications. Exhaust lifter timing should be checked following the same directions.

5. If readings do not correspond with manufacturer's specifications, repeat complete procedure. If readings repeat, correct timing by the use of off-set cam bushing or off-set key depending on make of engine.

6. Keep in mind, the degree wheel is only as accurate as the person using it and a camshaft is installed properly only with the use of it.

BDC