

THE MODEL A TOOLBOX

VALVE CLEARANCE ADJUSTING

by Colin Lawson

Thank you to Alan Bergman (Model A Ford Club of Victoria) for creating the article on Model A Ford Valve Clearances and Adjusting-rev2022. Having performed many Model A valve adjustments over the years, I usually used the processes outlined in the Ford service bulletins and procedures given in various books.

Those procedures followed a traditional instruction of rotating the crank until two specified valves were in the up position then measure the corresponding two valves that were in fully down position: e.g. #8 and #3 up, measure #6 and #1. Those traditional instructions assumed that the 'up' valves would rise at approximately the same time and the opposite cam lobes would be at the full down position, and it was irrelevant which one was measured for clearance. In fact there is a small difference in crank angle for each 'up' valve to be fully open. The heel of each cam is cut to a precise radius so a slight difference in position should not make a difference when checking the valve-to-lifter clearance. Out-of-spec clearances are adjusted using a 7/16" wrench and a thin 1/2" wrench. This process usually needed several revolutions of the crank to make all of the adjustments using the feeler gauges and wrenches.

The normal practice is to take one pass through the four testing positions and make note of the existing valve clearances. On the second pass make adjustments to correct the gap using the approximation of 1/3 of the hex head screw flat is about .002" change (thanks to Alan's calculation for rotational distance vs threads-per-inch). A small .001" change is about equal to the first slip between the two wrenches when squeezing them towards each other (now how do I explain that? It's a touchy-feely thing)

On a note pad, make a chart of 8 columns numbered from 8 to 1, this represents each valve looking at the side of the engine, and will be a guide to the open valves for the procedure. The next row of numbers will be ordered from 1 to 8 to identify the valve to be checked with the gauge. This corresponds to Alan's use of the 'Rule of Nine' when adjusting or measuring in order of the 'next-valve-up' procedure:

OPEN = 1+6, 2+4, 3+8, 5+7 for adjusting; MEASURE= 8+3, 7+5, 6+1, 4+2

** write the first measurement and subsequent measurements below the CHECK numbers**

OPEN (Adjust)	8	7	6	5	4	3	2	1
CHECK .012"-.013"	1	2	3	4	5	6	7	8

The Ford Service Bulletin July 1929 Canada, April 1929 USA is .010" to .013" for valve adjustment

After several years of driving with my rebuilt 'B' engine I decided to check the valve clearances after reviewing the referenced article and to illustrate that the sequential test/adjust time-saving method does work. I rebuilt this engine in 2006 including a new touring camshaft (.340" lift) from Specialty Motor Cams (Bill Stipe) and Model B size adjustable lifters. In 2019, after about 30,500 miles since rebuild, I rechecked the valves at the same time that the valve chamber and oil pan was cleaned out to convert to detergent oil with enhanced zinc content. The valve clearances were very close to the original settings all those miles ago, except for one on #4 exhaust valve which was corrected. In 2022 (cold winter outside) a second check of the valves using the sequential test method as described in Alan's article was performed. All were still as previously measured, 6 at .012", 2 at .013"; the spec for that cam calls for .012" for all adjustments.

Valve Duration: When the valves are open longer the engine will "breathe" better. This is achieved by making the radius of the sloped sides of the cam more 'bulged' so it takes more time for the lifter to complete the path up one side, across the nose (pointy end) and down the other side to the valve closure.

Additional reference article: The Model A Camshaft in The Radshell July 2021

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