



# Rule of Thumb

Everyone has heard  
the expression,  
"Rule of Thumb," and  
perhaps you have  
wondered how the  
expression started.  
Here is the story —



In days gone by, accuracy in measurement was not particularly important.



Approximately

In measuring long distance, the pace (approximately 1 yd.) was "close enough."



Approximately

To measure shorter distances, the length of a man's shoe (approximately 12") was "close enough."



Approximately


Another common standard of measurement was the length of the first thumb joint. For most purposes it was "close enough."

From this rough-and-ready method of measuring by using the thumb as a measuring stick or rule came the expression, "Rule of Thumb," which simply means guessing instead of knowing.



**"Rule of Thumb" methods are not unknown in servicing automobiles; for instance, most of you have heard the old ruling— "Set Spark Plug Gaps to the thickness of a thin dime — it's close enough!"**





Today we know that for best motor performance far greater accuracy is necessary. Old-time "Rule of Thumb" methods are out of date.

Every one of us knows  
what happens when  
"Rule of Thumb"  
methods are used in  
tuning a Motor.

## Spark Plugs —

Under .024"



When Gaps are set too narrow, the Motor will not idle properly.

When Gaps are set too wide, the Motor will not perform properly at high speeds.

Over .024"



## Breaker Points —

Under .018"



Breaker Points  
set too close  
cause hard  
starting.

Breaker Points  
set too far apart  
cause the Motor  
to miss at high  
speeds.

Over .018"



## Ignition Timing —



When Spark is too far advanced, the Motor will knock, lose power, and will not idle properly, causing unnecessary wear on parts.

When Spark is too far retarded, the Motor will overheat, lose speed, and burn Valves, resulting in poor economy.



# Valves —



When Valve clearance is set too wide, the Motor will be noisy and lack power.

When Valve clearance is set too close, the Motor will not idle properly, will overheat, burn Valves, and lack power.



# CARBURETOR—

There are three adjustments to be considered on the Carburetor:—

1. Idling Adjustment
2. Throttle Adjustment
3. Accelerating Pump Adjustment

## Idling Adjustment —



Improper idling adjustment causes poor idling, missing, and stalling.



## Throttle Adjustment—

A black and white photograph showing a person's hand adjusting the throttle linkage on a car engine. The hand is positioned near the throttle cable and linkage mechanism. The engine components, including the carburetor and various hoses, are visible in the background.

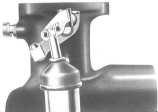
Increases  
motor speed

A circular inset diagram showing a throttle linkage mechanism. It features a central pivot point with two curved arms extending outwards. Two curved arrows indicate the direction of movement: one pointing upwards and the other pointing downwards.

Decreases  
motor speed

Improper Throttle  
adjustment will  
cause the car to  
buck or stall at  
low-car speed.

## Accelerating Pump Adjustment—



Improper Accelerating Pump adjustment will give poor economy and acceleration.

Now that we have seen  
the effect of "Rule of  
Thumb" adjustments  
on motors, let's tune the  
Motor the right way —

Here are the twelve steps:—

Spark Plugs

Breaker Points

Ignition Timing

Distributor

Carburetor and Fuel Pump

Tappets

Fan Belt

Fan

Oil Leaks

Water Leaks

Brakes

Road Test

## Spark Plugs —



Check and see that all Spark Plugs  
are Chevrolet standard.

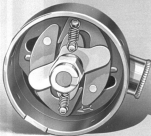


Set Gaps at .024". All Gaps must be the same. When setting Spark Plug Gaps, only the side electrode should be bent.

## Breaker Points —

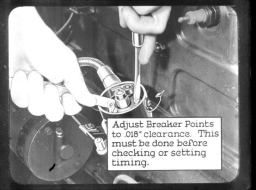


Check Breaker Points; if pitted replace.



Check automatic advance mechanism to see if it is operating properly.





Adjust Breaker Points to .018" clearance. This must be done before checking or setting timing.

## Ignition Timing—

When checking and setting Ignition Timing according to the following instructions, it is essential that only the one-bulb single-contact type of timing light be used.

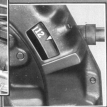


Attach Timing Light to Fuel Pump  
Line and lead to Breaker Arm.

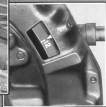
Remove #1 Spark Plug.

Turn on Ignition Switch.

Hand crank Motor until  
#1 Piston starts up on  
compression, watching  
Timing Light and mark  
on Flywheel.



If Timing Light lights before mark on Flywheel comes in line with pointer on Clutch Housing, timing is early.



If Timing Light does not light by the time mark on Flywheel is opposite the pointer on Clutch Housing, timing is late.



Set mark on Flywheel opposite pointer (15° on early 1929 models and 12° on late 1929 and all 1930 models).



Check position of Electrolock Cable to see that tension is away from Motor.

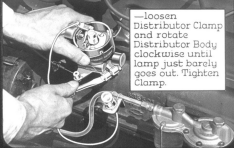




Check Manual Spark Control to be sure of full range movement. Loosen Screw on Advance and Retard Lever and push Lever all the way forward. Push in Spark Control Button on Instrument Panel to full advance position and tighten Lever Clamp Screw.

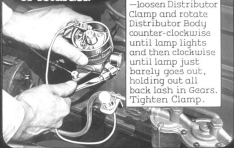
**If Spark is early, or advanced—**

—loosen  
Distributor Clamp  
and rotate  
Distributor Body  
clockwise until  
lamp just barely  
goes out. Tighten  
Clamp.



**If Spark is late,  
or retarded—**

—loosen Distributor  
Clamp and rotate  
Distributor Body  
counter-clockwise  
until lamp lights  
and then clockwise  
until lamp just  
barely goes out,  
holding out all  
back lash in Gears.  
Tighten Clamp.



## Distributor —



Check Distributor Cap for cracks and carbon streaks. Replace if necessary.



Check Rotor for cracks; replace if necessary. When assembling Rotor, be sure that it is all the way down on its seat.

A black and white photograph showing a close-up of a person's hand adjusting a distributor cap on an engine. The hand is positioned on the right side of the cap, which is a dark, cylindrical component. Several spark plug wires are connected to the top of the cap. To the left, a white plastic component, likely a coil wire, is visible. The background shows the metallic parts of the engine, including a timing belt cover.

Replace Distributor Cap, checking  
Spark Plugs and Coil Wires.  
Be sure that Spark Plug Wires  
are tight in Distributor Cap.

## Carburetor and Fuel Pump —



Clean Screen in Fuel Pump. Remove water and sediment from Bowl.



Remove Carburetor and check  
Accelerating Pump Jets by operating  
Pump and watching spray.



Clean  
Carburetor  
thoroughly  
and set  
Float to  
proper level.  
This is  $\frac{3}{4}$ "  
from machined  
edge to top  
of Float, with  
Gasket  
removed.



1929

Standard	57	⊙
Rich	58½	⊙
Lean	58	⊙
Extra Lean	59	⊙
Extra	60	⊙
Extra Lean		



1930

⊙ Standard	56
⊙ Rich	58½
⊙ Lean	58½
⊙ Extra Lean	57
⊙ Extra	58
Extra Lean	

Check number on Well Jet in use to see that it is standard for the particular section of the country in which the car is operating.



Increases  
motor speed

Decreases  
motor speed

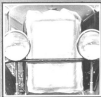
Reassemble Carburetor to Motor and  
adjust Throttle Lever Plate Screw.



Set Accelerating Pump Arm to prevailing season adjustment.

Tappets—

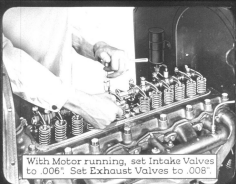
For best operation under normal conditions, a permanent Tappet adjustment can only be obtained after Motor has been normalized by heating—



Heat Motor by running until Heat Indicator shows Red. Sufficient time must be allowed for normalizing if Motor is cold. This time is important, as it allows all Engine parts to expand equal to normal operation.



While Motor is hot, tighten all Manifold Bolts, Valve Rocker Arm Stud Nuts, and Cylinder Head Bolts.



With Motor running, set Intake Valves to .006". Set Exhaust Valves to .008".

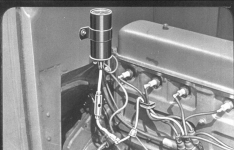




Run Motor fairly fast to settle Tappets. Recheck for .006" on Intake and .008" on Exhaust. Lock Nuts on Adjusting Screws must be tight.



Adjust Carburetor idling adjustment for proper operation. The proper adjustment is between  $\frac{5}{8}$  to  $1\frac{1}{4}$  turns open. Let Motor idle. Try turning Screw both ways from this position until best setting is made.



Check High-tension Coil and Condenser, using Coil Tester according to standard practice.



## Fan Belt —


Check Fan Belt for tension and adjust if necessary. Do not adjust Belt too tight.

## Fan Blades—



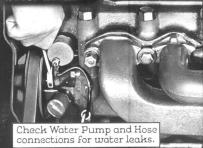
Adjust Fan for distance from Radiator and Pitch. Be sure Fan is not unduly bent.

## Oil Leaks —



Check Rocker Arm Cover Gasket  
for oil leaks.

## Water Leaks —



Check Water Pump and Hose connections for water leaks.

Brakes —

Be sure Brakes  
do not drag.



## Road Test—




Road-test car for smooth acceleration, deceleration, and idling.

If, during the road test, the Motor does not perform properly, a Motor check-up should be made and the owner advised as to what work is needed to correct whatever is wrong.

Here are the three steps  
in a Motor check-up: —

1. Check Compression
2. Check Carburetor
3. Check Fuel Pump

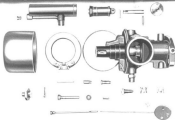
## 1. Compression Check—



Check all Cylinders with the standard Chevrolet Compression Gauge to be sure that compression is even. If compression is uneven, one of the following things is the cause:—

- (a) Poor Valves
- (b) Leaky Rings or Worn Cylinders
- (c) Leaky Cylinder Head Gasket
- (d) Poor Valve Seating

## 2. Complete Carburetor Check—



Completely disassemble Carburetor, clean and blow out with compressed air. Check Metering Rod for wear and change if necessary.

Check Float Level.  
It should be  $\frac{3}{4}$ "  
from machined  
edge to top of  
Float, with  
Gasket removed.




### 3. Fuel Pump Check —



The Fuel Pump should be removed and checked for operation.

If the Motor check-up shows that additional labor or parts are needed to put the Motor in proper condition, the owner's consent should be obtained before going ahead.




A black and white photograph of a car salesman in a white lab coat talking to a customer in a suit and hat in front of a car. The salesman is on the left, holding a document. The customer is on the right, wearing a hat and a suit. The car is in the background, and there are windows behind them.

**Owners will usually say—**

**"Go ahead,  
I want  
it right."**

**—and you have made another sale  
and another satisfied owner.**

A black and white photograph of a stage set. The stage is framed by heavy curtains on both sides. In the center of the stage, a large sign is displayed. The sign has a dark background with light-colored text. The text is arranged in three lines, all in a bold, sans-serif font. The first line reads "4,000,000 Chevrolet Owners", the second line reads "Keep Them Sold", and the third line reads "To Keep Them Selling".

**4,000,000 Chevrolet Owners  
Keep Them Sold  
To Keep Them Selling**

# The End of the Picture

Copyright 1950 Chevrolet Motor Co.



Jam Handy Picture Service  
6227 Broadway, Chicago, Ill.

To Rewind, start at this end, Dull side out,  
keeping fingers off the film