These degree figures are approximate and vary slightly due to variations in hole diameter.

Vacuum Advance Unit Data

Vacuum unit #	Degrees Advance
199	12
217	11
224	0
229	12.5
230	13
248	10.5
370	10
410	12.5

This is an incomplete list and is included for information.

These figures are approximate and vary slightly from unit to unit. The flyweights are identifiable by shape and cross referenced in the distributor parts list. Springs cause a real identity problem, and this is discussed more later. David says the only difference in the shaft is the size of the cam stop hole in the mounting plate. This limits the amount of mechanical advance (see data sheet) and can be enlarged to allow additional mechanical advance. I'm not advising that you should do this, or that it's a good idea, only that you can. I did, and it seems to work all right for me.

During all this experimentation I purchased from a "hot rod store" a "chevy six mechanical advance kit." This is a pair of slightly heavier flyweights and three pairs of springs of different strengths (#1, 2, 3 on spring chart). There were no instructions about which to use on which engine. Being naturally curious, I decided to try all three and compare results. I found that the light spring with the heavier weights would indeed allow rapid acceleration, (used on a 140 engine with two carbs, mild stress cam, mechanical advance only, manual tranny) but other problems such as backfiring when decelerating in gear, and rough running at low speed in high gear were noted. Successively heavier springs and lighter weights were tried until #3 springs and D weights (see data sheets) produced acceptable results—not perfect, but acceptable. At that time, I still did not know if I had the correct shaft or cam. About then, I bought a pair of "Blue Dot" springs (#10 on spring chart) and continued to experiment. Mr. Ramsey of Blue Dot Springs has told me that the correct springs should exert 2.6 lbs of force when extended. The ones I have measured 3.0 lbs, extended, and do seem to give better results.

To try to identify and better understand springs, I decided to make some measurements. The following measurements were made: 1. wire diameter 2. coil diameter 3. overall length (inside and end loops) 4. force exerted (in lbs) at installed and extended length. See figure 1. Additionally, I counted coil turns and identified end type (see Figure 2). Davis lists his springs as having so many "active coils." He begins counting turns at the point where the attaching loop bends to start the spring turn. Therefore, almost all of his springs have so many and half turns. (Nothing wrong with that), I followed that procedure in my counting.

Note that type C end springs have an even number of turns.

As you can see from the spring data sheet, there are a lot of different sizes and strengths

Corvair Distributor Parts List—Actual Markings—11/82—David Langsather-Dale Mfg.

Distributor #	Point Code *	Point Cam	Shaft #	Dist. Weight	Vacuum Advance	Wire Dia.	Coil Dia.	Overall Length	Active Coils
1110252	Cadmium	730A CCW	21	C	152M	.031"	.236"	.708"	5.5
1110256	Black	118A	87	B	177M	.039"	.248"	.741"	6.5
1110257	Copper	122A	27	C	152M	.032"	.235"	.714"	5.5
1110258	Zinc	730A CCW	21 or 87	C	152M	.031"	.236"	.707"	5.5
1110259	Black	122A	87	B	177A	.041"	.255"	.762"	6.5
1110260	Copper	122A CCW	27	D	152M	.035"	.238"	.756"	5.5
1110269	Yellow	21	732	C	217	.031"	.235"	.692"	5.5
1110271	(None?)	87	124	B	200(951)	.041"	.254"	.747"	6.5
1110272	Pink	27	124	D	199	.036"	.237"	.749"	5.5
1110275	Zinc	118A	03	C	177M	.035"	.232"	.690"	5.5
1110278	(None?)	03	120	C	200(951)	.035"	.230"	.670"	5.5
1110294	Copper	21	732	C	199/217	.031"	.242"	.702"	5.5
1110295	Mustard	87	124	B	200(951)	.041"	.254"	.756"	6.5
1110296	Brown	27	124	D	199	.036"	.237"	.761"	5.5
1110297	Black	03	120	C	200(951)	.035"	.231"	.680"	5.5
1110290/298	Purple	201/[illegible]	12	A	224	.032"	.230"	.648"	5.5
1110310	Mustard	21	532/728	C	229/217	.041"	.250"	.757"	6.5
1110311	Green	03	532	C	230/311	.036"	.230"	.667"	5.5
1110314	Purple	201	12/732	A	218/239	.031"	.230"	.637"	5.5
1110319	Brown	219	720	C	230/217	.047"	.250"	.764"	5.5
1110329	Purple	201	738	A	250	.033"	.260"	.636"	4.5
1110330	Black	21	522	C	248/217	.031"	.245"	.670"	5/5.5
1110339	Orange	84	522	C	230/217	.039"	.240"	.753"	4.5
1110368	?	#1967271	#1967269	E	217	#1967516			
1110369	Red@	156	540	E	230/217	.031"	.245"	.711"	4.5
1110370	Pink/Red@	154	536	E	230/217	.031"	.241"	.697"	4.5
1110371	Black/Red@	157	532	E	248/217	.031"	.254"	.720"	5.5
1110372	Black/Red@	158	540	E	230/217	.035"	.252"	.725"	5.5
1110389	Copper	132	526	E	230/217	.034"	.250"	.721"	4
1110434	Orange	21	532	C	230/217	.031"	.249"	.644"	4.5
1110452	(None?)	21	532(A)	C	230/217	.031"	.249"	.644"	4.5
1110453	Green	03	532	C	230/217	.034"	.245"	.680"	3.5
1110454	(None?)	132	526	E	230/217	.032"	.247"	.689"	4
1110455	Pink	219	720	B	230/217	.047"	.279"	.791"	4.5

of springs. From this data and by making a few measurements of your own, you could select a pair of pretty closely matched springs, since it begins to appear that their behavior is predictable. For example, the first three pairsare from the "chevy six kit." You see that #1 has the smallest diameter wire, smallest diameter coil, and most turns. It provides the least amount of extended force. From there, you work up the scale in size and strength. Springs with larger diameter wire and/or fewer turns are stronger as a general rule. Spring pairs #7 and #7 are so strong they allow very little advance, and probably are not intended for Corvair use. (I found one of these in a "rebuilt" distributor).

It appears that springs with .025 to .029 wire usually have 7 to 9 turns, type C ends, and exert up to 2.8 lbs of force extended. Those with .030 to .035 diameter wire have 5 or 6 turns, type A ends, and exert 2.8 to 4.5 lbs of force. Springs with .035 to .042 diameter wire have 4 or 5 turns, type B ends, and 2.5 to 3.5 lbs of extended force. With this data plus spring length, you should be able fairly closely to select a pair of springs of equal strength.

If Mr. Ramsey is correct, and I have no reason to believe he is not, then 2.6 to 2.8 lbs of force at full unmodified mechanical advance is correct. It seems to me, too, that somewhere around 1.0 to 1.5 lbs force at zero advance would be desirable to prevent "bouncing" while decelerating, less force might allow bouncing and more might prevent full advance. Ye gads, you can bet Ralphie never worried about all this.

Furthermore, distributor cam profiles vary considerably. See Figure 3. There are only a few I happened to have and they are shown for general information. The curvature of the cam face (on the left as you view the figure) controls the rate of mechanical advance from flyweight action caused by engine rpm. Obviously,having the right one for your engine is necessary to obtain optimum performance. On the chart David provided, you will find the distributor cam number for a particular engine. Now with all this data at your fingertips, you should have no trouble making ole bessie run perfect, right? That's what I thought too, and I'm still experimenting. Bye now.

*Contributors: David Langsather (Dale Mfg. & Corsa) Bob Helt (Corsa) Bob Bellew (S.D.C.C.)

*By: Lew Rishel—S.D.C.C.

Distributor Spring Chart

Pair #	End type	Diameter wire	Diameter coil	# turns	Length relaxed	Length installed	Force Inst	Force (lbs) Extnd
1	C	.025	.217	9	.640	.745	1.1	1.5
2	C	.029	.220	9	.682	.751	1.6	2.1
3	C	.030	.228	7	.680	.755	1.6	2.8
4	C	.029	.229	7	.665	.751	1.1	1.6
5	B	.037	.234	5.5	.755	.765	0.4	2.7
6	A	.032	.258	5.5	.685	.740	1.1	2.3
7	A	.034	.249	4.5	.715	.760	1.8	4.0
8	A	.042	.252	6.5	.756	.790	1.5	4.5
9	B	.035	.236	5.5	.760	.767	0.3	2.0
10	A	.026	.240	5.5	.750	.800	2.0	3.0
11	A	.030	.245	5.5	.710	.750	1.7	2.7
12	B	.041	.250	6.5	.708	.746	1.0	3.3

Distributor Paint Codes

60-61 paint code is located on oiler cap.

62-69 spray painted on housing under vacuum advance arm, approximately 3/4 x 1½".

Purple and red codes are painted with an approximate ½" circular paint spot.

"@" means painted on housing side near seating base.

Spring End Type

FIGURE 2

Distributor Cams

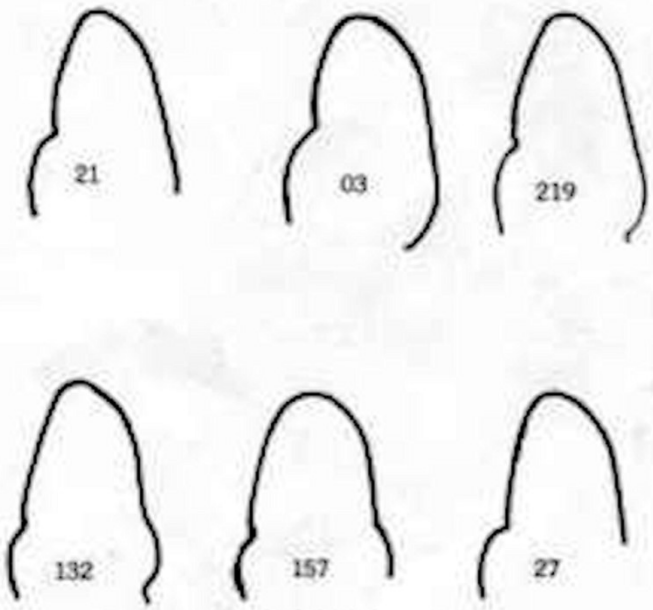
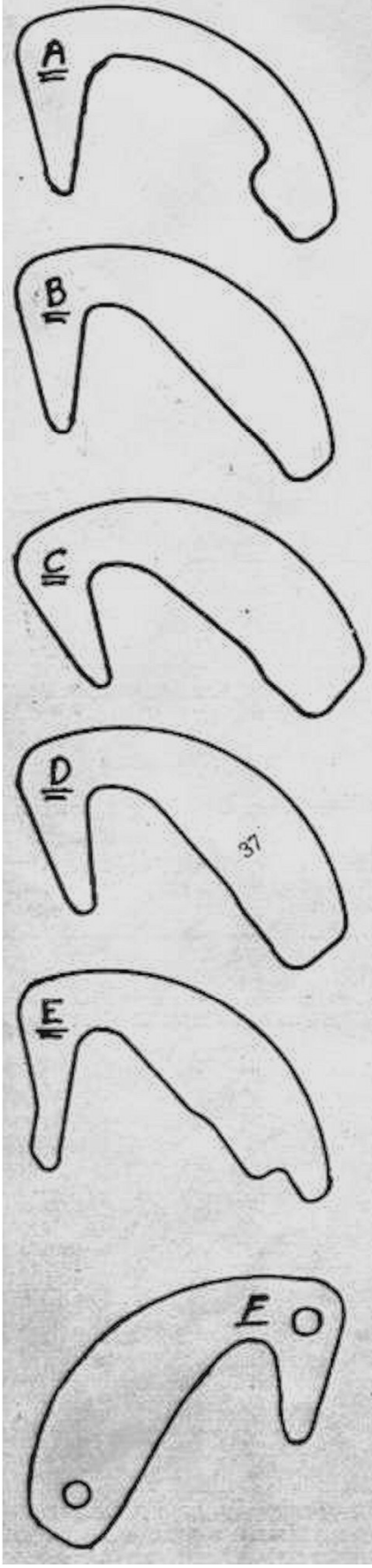
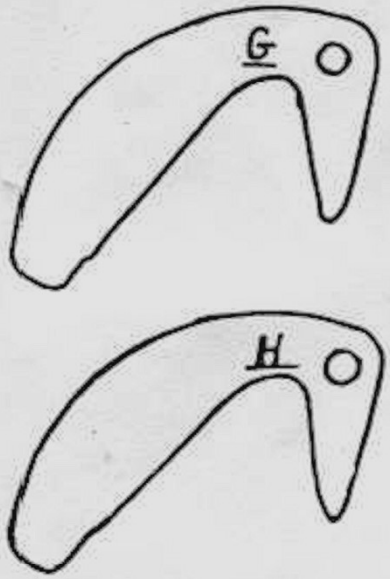


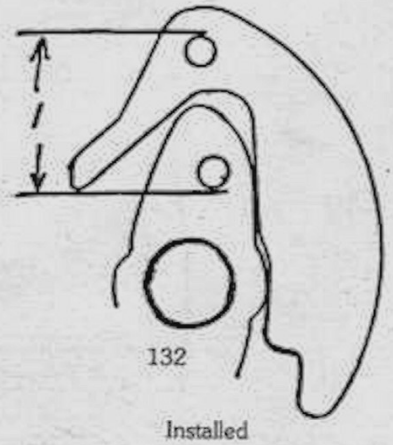
FIGURE 3

Flyweights

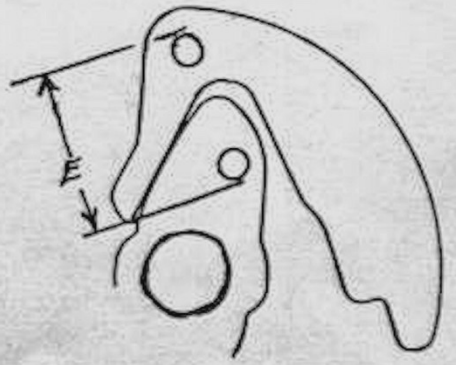




Flyweight Types
Types "G" and "H" were found in corvair distributors, but may not be correct.



Installed



Extended

FIGURE 1
Extended dimension is almost always exactly .050" more than installed.