A. C. MOTORS - Oakland, CA
(Charlie Anderson & Walt Cave)


A.C.E. MODEL WORKS

A.C.E. - September 1937 - Carbide & Dry Ice. Twin cylinder inline. Sheet metal stamped parts. Rocking valve for timing cylinders attached to crank at rear of shaft. Available as kit for $1.95 or finished ready to run for $3.00.


See also Mercury Models

A.J.C. MOTORS - Ingleside, IL

A.C.E. - 1937 - .604 in^3 spark. Like 1936 model, but with finned head and ringed piston. Few built. No known examples


KRAMER & GROW Mfg.
San Diego, CA
(John Kramer & Sam Grow)


ACUNTRA TOOL & DIE Co.
New York, NY (Continuation of the Knight engines) (All models spark)


NOTE: In using up parts from the Knight engines, many 12mm plug heads and alloy cylinders were used on early Acuntra engines.

2 - FIREBALL 500 - 1937 - .785 in^3. Blind bore cast aluminum cylinder includes head. Flat top except protrusion for spark plug
boss. Venturi at rear of cylinder with small plastic tank under venturi. No known examples.

3 - FIREBALL 500 - 1938 - .785 in³. Similar to 1937 model, but without breather in case. Added fin on spark plug boss. Larger plastic tank under venturi. No known examples.


5 - FIREBALL 500 - 1939 - .78 in³. Spoke head. Split sand cast crankcase. Cast iron cylinder. Long exhaust stack (some streamlined, some rectangular). Curved intake extension. Head, venturi extension and tank are brass sand castings. Some have screw in rather than bolt on head. NOTE: The two different engines pictured are of basically the same model.

6 - FIREBALL 500 - 1940 - .78 in³. Similar to 1939 model except brass head now has parallel fins. Air cleaner and choke unit on end of venturi rather than the curved extension. Enclosed timer housing. No known examples.


8 - “V” TWIN - 1940-41 - 1.57 in³. Cylinders similar to “37” engine except both exhausts point down with intake manifold across top of “V”. Radial mounting. Enclosed timer. No other data available. No known examples.

AERO ACE - AERO LITE - AERO MIDGET
See Gil

AERO-DYNE - Detroit, MI


AERO PRECISION MACHINE WORKS - Pasadena, CA
See Precision

AERO RESEARCH & DEVELOPMENT - Buffalo, NY
(Neil Savage & John Piston)
See also Savage 60


AERO 35 R/C - 1963 - .3469 in³ glow. R/C carburetor bolted on to replace standard carburetor using sliding restrictor to vary speed.

AEROCRAFTERS - Chicago, IL
(Robert Miller)
See Condor Midget Motors
Condor Kopper King

AEROMARINE Co.
See Dyna-Jet - Jet Section

AMERICA’S HOBBY CENTER
New York, NY

2 - AIR-O-MIGHTY MIDGET

3 - AIR-O-DIESEL - 1948 - .278 in³ diesel. Same crankcase casting and crankshaft as .451 in³ displacement engines, but case is not machined for timer. Variable compression adjustment with Allen wrench. Tank on back cover. Pin type drive washer with no cam. Cast aluminum front prop washer. Earliest versions (3a) had black finish on cylinder. (3b) and (3c) show both case styles. Other variations known.

3a - Bob Cowles
3b - Bert Striegler
3c - Bert Striegler


5 - AIR-O-MIGHTY MIDGET - 1948 - .451 in³ glow. Bolt on finless head. Clamp on exhaust. No timer. Most have shaft with 4 splines for Ohlsson type stamped drive washer. NOTE: 5 or 6 .50 in³ glow engines were made special for the Air Force flying team. These were not marked in any way, but would have an oversize piston and/or stroke.
6 - AIR-O-DIESEL (Numerous variations for car use.) - 1949 - .278 in³ diesel. Horizontal needle valve. Pin through shaft keys into hub on car wheel in most applications. Heavy back cover threaded for axle shaft for opposite car wheel (6a). One mounting lug is sometimes cut off to fit in pan. Mounting holes frequently not drilled. NOTE: A number of diesels with the cross mounted needle valve exist with prop drive washer, front washer and nut as aircraft engines (6b).

7 - AIR-O-COBRA - 1949 - .451 in³ spark. Like 1948 Cobra #4, but has new shorter 8 fin cylinder with top two fins partly filled in. Shorter venturi tube. 1/4-32 spark plug. No shoulder on prop nut. No name in circle on bypass.

8 - AIR-O-COBRA - 1949 - .451 in³ glow. As #7, but no timer or tank. 1/4-32 glow plug. No photo.

AIRCRAFT INDUSTRIES
See Cyclone, Baby & Super

AIRQUEINE
See Dynamic Manufacturing Co.

St. JOHN MODEL SHOP
Winnipeg, CANADA


ALLYN SALES Co.
6425 McKinley Ave., Los Angeles, CA (All models glow)

NOTE: The Fury engines were designed by Perin Culver and manufactured by Allyn Sales Co. prior to their merger with K&B at which time all manufacturing was done in one facility. The Sky Fury .049, Mar Fury .049 and Sea Fury .049 outboard and inboard were all manufactured by Allyn Sales. These engines all had “049” and “FURY” on the left side of the crankcase. The larger displacement engines and twins were designed at this time, but were not produced until after the K&B/Allyn merger.

**ALTERNATE FIRING TWIN**
- See Chunn

**AMALGAMATED SALES and SERVICE Corp.**
- See Ott, Joe

**AMERICAN STANDARD**
- See Tlush Super Ace

**AMETEK-CALMEC**
Los Angeles, CA
- See also Four Aces
- Bancroft & Martin


**ALTERNATE FIRING TWIN**
- See Chunn

**AMALGAMATED SALES and SERVICE Corp.**
- See Ott, Joe

**AMERICAN STANDARD**
- See Tlush Super Ace

**AMETEK-CALMEC**
Los Angeles, CA
- See also Four Aces
- Bancroft & Martin


2 - XA904 - 1968 - .61 in³ glow. Four cylinder radial utilizing four Cox Medallion .15 engines. Opposing cylinders simultaneous firing. Fully machined components. Ball bearings carry central prop shaft. Dual K&B Multi-Speed carburetors linked together. **NOTE:** An advertising brochure shows the engines with a dark case. Very low production on the dark engines. The majority seem to have been produced by Bancroft & Martin.

**AMF**
- See Wen-Mac

**MODEL MOTOR SUPPLY**
Tulsa, OK (Ancil Rouch)


**ANCIL 65** - Like .60, but with bore increased. Low Production.

**ANDERSON, MEL Mfg. Co.**
Los Angeles, CA (Mel Anderson)

**NOTE:** In early 1946 an engine called “Thunderbolt” was advertised. This actually became the Anderson Spitfire in early 1948. “Watch For” ads started running in April, 1946 for the Spitfire.

1 - ANDERSON SPITFIRE - 1948 - .604 in³ spark. In appearance, this is a larger, more robust version of the Super Cyclone. It is a totally new engine. .937 x .875 bore and stroke. Inboard ball bearing on shaft. All die cast. Four bolts holding exhaust stack. 6 mounting bolt holes in beams. Clear plastic back cover.

4 - BABY SPITFIRE - 1949 - .045 in³ glow. As #3, but with a variety of different colored heads and bypasses, ie gold, blue, green, red, etc. Sold as a promotional item. Originally sold in a large display box with stamped metal mounting bracket, prop and wrench. Last sold in very small box with engine and tank only. No accessories except wrench.

5 - BABY SPITFIRE - 1949 - .045 in³ glow. As #4, but with plain aluminum head. Rounded end tank with no name. Various accessory mounts.


8 - SPITZY Sr. - 1951 - .045 in³ glow. As #7, but long tank cast under case. Most have a brass head.

10 - ROYAL BABY SPITFIRE

NOTE: The Mel Anderson ad in the June 1953 issue of Model Airplane News shows the “New Spitfire


12 - SPITZY SR. - 1955 - .045 in³ glow. Similar to last Spitzy Sr., but most have pressed in back covers. Aluminum Head.

13 - ROYAL BABY SPITFIRE
- 1955 - .049 in³ glow. Like last .049, but with either natural aluminum or black anodized cylinder muff.


McCord Precision Products/Pesco - Anaheim, CA (Bob McCord)
15 - SPITFIRE 65 - 1958 - .647 in³ spark. Built using remaining parts from original project. Most with finned head anodized blue. Last engines used a machined barstock head anodized a light blue. Point cam on drive washer.


20 - ANDERSON SPITFIRE 65 - 1972 - .647 in³. New investment castings have matte/sand blast finish. Cast finned head, otherwise identical to the last McCord built Spitfires including snap ring shaft retainer. Point cam on drive washer. Available in either spark or glow.

APEX MOTORS - Berkley, CA

APEX “SKYLARK” - 1936 - .562 in³ spark. Kit engine, but some said to have been made and sold as complete engines by Apex. Sand cast head, timer and case. Brazed up cylinder with shrunk on aluminum fins. Split case with through bolt clamping. Lapped piston. REPRO by Don Stroot.

APEX “120” - 1936 - 1.20 in³ spark. Sand cast engine resembling Forster 99 but with many differences. Overall larger in size. Bypass cast into cylinder. NOTE: Not connected in any way with Forster although several parts appear to be interchangeable. Most existing engines are from original patterns, but recently built.

MICRO-BUILT, Inc.
Danbury, CT  (Ray Arden)

1 - ARDEN 09 - 1946 - .099 in³ spark. Magnesium castings. Plain bearing shaft. Throttle valve (no needle valve). Clear plastic tank. Black fuel proof tank offered later. NOTE: Only around 1000 .09's were built with magnesium heads. All the rest were aluminum. NO magnesium head .19's.
2 - ARDEN 09 - 1946 - .099 in³ spark. As #1, but with ball bearing mounted shaft. Case has two holes behind front bearing on bottom. No other visible difference in plain bearing and ball bearing engines.


5 - ARDEN 09 - 1947 - .099 in³ spark. As #4, but with ball bearing shaft. Outwardly identical to plain bearing engine except two holes on bottom of shaft housing behind bearing.

6 - ARDEN 19 - 1947 - .198 in³ spark. Like throttle valve .19, but has needle valve. Aluminum venturi insert and black plastic tank.

7 - ARDEN 09 - 1949 - .099 in³ glow. Like .09 #2, but with aluminum cover over cam. Sold only with a ball bearing crankshaft. Late production went to aluminum castings.

8 - ARDEN 19 - 1949 - .198 in³ glow. Like .19 #6 but with aluminum cover over cam. Late production went to aluminum castings. NOTE: There are numerous Arden Diesel conversions for both size engines. These were not built nor offered by Micro-Built. A few early Ardens had magnesium heads. There were no plain bearing Arden 19's.

9 - ARDEN 09 & 19 FREE FLIGHT CHASSIS - 1946 Accessory item available for all Arden engines. Sold with or without the engine. Unit contains built in coil, flight timer, condenser, engine mounting flange, wheels and struts (not pictured on this example) and booster jack connections. Pen cell (AA) batteries also fit into the unit. Body of unit is bright red plastic and mounting plate is black plastic. Pictured engine has magnesium head.

NOTE: There are numerous Arden Diesel conversions for both size engines. These were not built nor offered by Micro-Built. A few early Ardens had magnesium heads. There were no plain bearing Arden 19's.
**ARLINGTON MOTOR Co.**
San Mateo, CA

**ARLINGTON ENGINE**
1946 - .512 in³ spark. Advertised castings kit engine. Sideport. Available as rough castings kit ($5.00) or partly machined kit ($7.50). Only a line drawing shown in ads. No other data available. No known examples.

**ARM (American Racing Machine)**
Built and designed by Roger Theobald & John Barr at the K&B factory, but not strictly a K&B product.

**ARM**
1972 - .152 in³ diesel. Investment cast case includes front shaft housing. “15” over “ARM” cast into bypass bulge. Rear drum valve intake. Designed as a team race engine mounted inverted, so the Cox supplied venturi and needle would point up in actual use. Approx 90 made.

**ATHEARN**
See POGO

**MICRODYNE ENGINES**
Danbury, CT (Ray Arden)


2 - **SUPER ATOM** 1940 - .097 in³ spark. Same case and lower end as Atom #1. Serial number moved to edge of mounting lug on last production. Straight fin profile. Flat head with 8 wrenching holes. Serial numbers range 04001 through approximately 10000.

3 - **SUPER ATOM** 1941 - .098 in³ spark. Aluminum castings. Tank has wire bale. Radial or “spoke” type head fins, tapered fin profile. Drive washer has 6 “bumps” around edge. Fuel mixing valve has “bump” end. Serial numbers in the 12000+ range.

4 - **SUPER ATOM** 1946 - .098 in³ spark. Like last Atom above, but with all magnesium castings. Serial numbers in the 30000 range. **NOTE:** Large quantities of finished engines and unfinished parts “turned up” in the 1960’s. Many of these have been converted into finished engines. Most will not have serial numbers. These have been built into all four models. **REPROS EXIST**

ATOMIC ENGINES  -  Bill Cubitt

ATOMIC - 1946 - .60 in³ spark. Racing engine similar to Hornet 60. Three bolt front and back cover attachment. All sand cast. Name cast diagonally on bypass. Double ball bearing supported shaft. Dural rod bushed both ends. Hemi arrangement on piston and head. Low production. REPROS EXISTS

ATOMIC ENGINES DATA SHEET

ATWOOD - NOTE: This listing is being presented as best as can be determined of engines designed and manufactured by Bill Atwood without regard to the particular manufacturing company name he happened to be using at the time. It is a chronological listing running 20 years from Phantom Motors (1938) thru Signature Engines (1958).

PHANTOM MOTORS
Hi-Speed Division
Los Angeles, CA (All models spark)


4 - HI-SPEED - 1938 - .276 in³. Virtually identical to the 1938 Atwood Phantom #2 with teardrop exhaust except that the name “HI-SPEED” is cast on bypass and the head is larger in diameter giving a tapered fin profile. Spark plug offset and angled. Two bolt cylinder attachment. Last ones were painted dark blue or black crackle.

5 - HI-SPEED - 1939 (early) - .276 in³. Same as last painted version above, but with four bolt cylinder attachment. Flatter profile on head.

6 - HI-SPEED TORPEDO - 1939 (July) - .299 in³. Black wrinkle paint (some unpainted). Red bakelite tank. Four head bolts extending
into case (the last of these had eight head bolts, four through to case and four just into top of cylinder). First small Atwood with intake above crankshaft.

7 - HI-SPEED BULLET - 1939 (late) - .275 in³. “BULLET MOTOR” now cast on bypass. Black wrinkle paint changing to red wrinkle, Feb. 1940. Last engines unpainted. Tank mounted by a bracket attached to two rear cylinder bolts.

CHAMPION PRODUCTS Co.
Los Angeles, CA (All models spark.)
Brochure photos used to illustrate most designs as no examples are known of many of these engines - Engine Collectors’ Journal, Issue #143 has complete Champion details.

8 - BLUE CROWN CHAMPION - March, 1940 - .604 in³. This appears to be the highest production of any of this line. Bottom front rotary valve and rear drum valve. Two needles. “Spoke” head fins. Embossed name plate riveted to bypass. Flywheel. NOTE: Even though these engines are called Blue Crown, Red Crown, Green Crown, etc., none of them had colored heads. All were natural aluminum.

9 - RED CROWN CHAMPION - April, 1940 - .604 in³. Like Blue Crown but with only single front rotary and single needle valve. No tank. Car engine.


12 - SILVER CROWN CHAMPION - 1940 - .90 in³ (15cc). Boat engine. Dual carburetors mounted above shaft. Large swept exhaust stacks. Parallel head fins. Clamp on bypass and exhaust manifold. Flywheel. Offered by several builders as a kit engine, many variations exist and are still being made.

13 - CHAMPION RACE CAR - 1940 - .597 in³. Combination drum

**14 - CHAMPION AIRCRAFT**

**PHANTOM MOTORS**
Los Angeles, CA (All models spark)

**15 - PHANTOM “BULLET”** - 1940 (June) - .276 in³. “PHANTOM MOTOR” cast on bypass. Fuel tank has three ears for attachment to mounting ring trapped between case and back cover. Early engines painted black wrinkle, later red wrinkle and by Sept. 1940 were unpainted. Early engines have needle valve angled back from prop arc (Figure 15). Later needle valves were parallel to prop arc (Figure 15a)!! Alternating use of aluminum and magnesium/dowmetal castings.

**15a**

ed black wrinkle, later red wrinkle and by Sept. 1940 were unpainted. Early engines have needle valve angled back from prop arc (Figure 15). Later needle valves were parallel to prop arc (Figure 15a)!! Alternating use of aluminum and magnesium/dowmetal castings.

**16 - PHANTOM “TORPEDO”** - 1940 (June) - .299 in³. Fuel tank mounts to flange as on Phantom Bullet, but has a “float” and gauge added. Eight bolt head attachment. Early engines painted black wrinkle, followed by red and then unpainted. First engines had no web between lugs and side of case. This was added around the time the cases were left unpainted. Name “TORPEDO” cast vertically on bypass.

**NOTE:** Phantom P-30 listed under “P”. Not Atwood engines!

**WETZEL and ATWOOD MOTORS**
Los Angeles, CA

**17 - ATWOOD CHAMPION** (Model “H”) - 1945 - .603 in³ spark. Spoke head fins. “H” cast on bypass and various internal parts. Magnesium castings, otherwise same as 1941 Champion. **NOTE:** The last Phantom Bullets also produced by Wetzel & Atwood Motors.

**ATWOOD and ADAMS Mfg.**
Burbank, CA (All models spark)

(Model “J”) - 1946 - .625 in³. Similar to Model “H” #18, but with minor cosmetic differences. Available in either ringed (.940 bore) or lapped (.930 bore) so displacement will vary from .625 (ringed) to .611 (lapped)

20 - ATWOOD SUPER CHAMPION (Model “JH”) - 1946 - .611 in³. Lapped or ringed piston as #19. Exhaust now on opposite side from all previous models. “JH” in circle above vertical “ATWOOD” cast on bypass. Large bypass.

21 - ATWOOD CHAMPION (Model “J”) - 1946 - .625 in³. Similar to Model “H”, but has black wrinkle painted case and back cover. Timer, head and “smoke stack” unpainted. Paint applied to cover rough castings from worn out dies!

ATWOOD Mfg. Co.
Burbank, CA

22 - SUPER CHAMPION - 1948 - .630 in³ spark. Similar to Atwood “JH” Champion, but has “SUPER CHAMPION” on bypass. Small narrow bypass.


24 - GLO-DEVIL - 1948 - .625 in³ glow. Same case casting as “JH” Champion, but “GD” replaces “JH” in circle above “ATWOOD” on large bypass. (NOTE: Some “GD” engines were reported to have been sold with timer as an ignition engine.)

25 - ATWOOD CHAMPION Model “DR” - 1948 - .625 in³ spark. Similar to Glo-Devil, but with increased bypass and exhaust areas. “DR” on bypass. Stub intake straight out back. No vertical stack.


29 - TRIUMPH 49 - 1948 - .491 in³ glow. Two piece case split below mounting lugs. Front rotary valve. Back cover mounted tank. No timer and case not machined for one. “49” stamped on top of mounting lug. Note: Not all engines received the “49” or “51” stamp on the lug. Also, most, but not all, Triumphs were serialized inside the back cover.

ATWOOD Mfg.
Pico, CA (All models glow.)

NOTE: The last “Triumph” 49 and 51’s were manufactured under the Atwood Mfg. company name. The Atwood 1/2A engine listing will have its own numbering series.


ATWOOD MOTORS
Montrose, CA (All models glow.)

At this point, identification of specific Atwood 1/2A’s becomes most difficult. Advertising is of no help because the same ad was often run over and over. Some of the advertised engines have never been found. Identical engines were sold in different boxes with different names. Identical boxes were sold containing a variety of different engines. Parts interchangeability was used extensively by Atwood to market new engines.

The following progression of features would be a logical way to approach the evolution of Atwood 1/2A’s.

1 - WASP - 1950 - .049 in³. First Atwood built 1/2A engine. “WASP” over “049” on both sides of case. Thin drive washer splined onto 5-40 size shaft with prop nut. Glow plug. First engines sold had the back cover only, no tank. Shown with original brown and yellow box (#1a).

NOTE: Variations in venturi length are not a good indicator of different models. These were production variations.

displacement designation. This lack of displacement numbers also appeared on “regular” crankcases.

2 - Crankshafts progressed from a 5-40 shaft with nut, to a crankshaft with tapered seat for longer prop drive washer and threaded in prop screw, to an 8-32 size shaft with nut. At “the end” engines apparently were assembled with whatever could be salvaged from the parts bin.

3 - Anodizing of cylinders and parts maintained their original intent as to model designation. Exceptions include, but are not limited to, a gold drive washer and spinner as found on engine #29.

4 - Drive washers were thin on the 5-40 thread shafts, long on the tapered shafts, and a return to thin on the 8-32 thread shafts.

5 - 3 styles of head fins were used. 1st version was tapered with a glow plug. 2nd was a return to the rounded profile of the Wasp. These were intermixed according to model. 3rd was the glow head used on the final production. This was advertised as being recommended for use on earlier engines.

6 - Atwood also produced the early models of the Wen-Mac engines and there is interchangeability here as well - especially on internal parts and cylinders.

With all of these overlapping differences in mind, here is a suggested progression of the Atwood 1/2A engines. Not all types are pictured.


5 - ATWOOD “U/C” - 1953 - .049 in³. Identical to #4, but sold with plain back cover and no tank. Straighter fin profile. Sold at $4.50.


7 - ATWOOD “U/C” - 1953 - .051 in³. Identical to #6, but sold with plain back cover and no tank. Straighter fin profile. Sold at $4.50.


13 - ATWOOD OUTBOARD - April, 1954 - .049 in³. Air cooled. Cadet engine mounted on outboard motor unit using flexible shaft in lower housing. Red flywheel. “ATWOOD MOTORS” on top of fuel tank. **NOTE:** First marine engines, both outboard and inboard, used the 5-40 size shaft with nut. Later going to the shaft with tapered seat and screw in prop shaft.


15 - ATWOOD OUTBOARD - April, 1954 - .051 in³. Identical to water cooled outboard #15, except has .051 size engine. Blue flywheel.

16 - ATWOOD OUTBOARD - April, 1954 - .051 in³. Identical to water cooled outboard #15, except has .051 size engine. Blue flywheel.


25 - ATWOOD “SIGNATURE” - September, 1954 - .049 in³. Like Cadet #23, but with green anodized fins. **NOTE:** Supposedly hand
selected to turn 17,000 rpm or better. “Signature” name was applied to box the with a sticker. It would be difficult to tell a “Signature” from a “Standard” model without the anodizing or the box.

26 - ATWOOD “SIGNATURE”  
- September, 1954 - .051 in. Like .049 #25, with increased stroke. “051” on case. Green anodized fins.

27 - ATWOOD SHRIEK “F/F”  

28 - ATWOOD SHRIEK “F/F”  

29 - ATWOOD SHRIEK “U/C”  

30 - ATWOOD SHRIEK “U/C”  


32 - ATWOOD SHRIEK SUPER CADET - 1956 - .051 in. As .049, with increased stroke. “051” on case. Glow head.

33 - ATWOOD SHRIEK SPECIAL U/C - July, 1957 - .049 in. Basically identical to 1956 Shriek Free Flight, but with no tank. Advertised at $4.95. NOTE: Pictured in #33 is an example of Atwood’s parts mixing. This is a New In Box engine and the box is actually signed by Bill Atwood himself as a gift to one Dick Robinson. What’s wrong? The engine has the glow head but with internally threaded shaft for a screw. The screw used on this engine is a length of all-thread and the front washer is a short rear prop washer from earlier engines installed backwards. To top it off, the prop nut is not the proper thread.

34 - ATWOOD SHRIEK SPECIAL U/C - July, 1957 - .051 in. Basically identical to #33, but with “051” on case. The boxes for #’s 33 and 34 were orange and dark blue and the engine cutouts were obviously for different engines. The engine name was rubber stamped on the insert, and in the case of the .051 engine, this was marked out and hand written in. Advertised at $4.95.

NOTE: The last Atwood ads appeared in 1958 and were for a steam engine powered model boat.
SIGNATURE ENGINES, Inc.
Tulsa, OK
No advertising can be found for Signature Engines in Tulsa, OK.

35 - ATWOOD SHRIEK “F/F”
- 1958 - .049 in³. Identical to Atwood Shriek “F/F” #27 except displacement disk on left side is blank. No “049” or “051” shown.

36 - ATWOOD SHRIEK “F/F”
- 1958 - .051 in³. Sold, but can’t be identified without measuring. Possibly has an extra gasket shim between cylinder and case.

37 - ATWOOD SHRIEK “U/C”
- 1958 - .049 in³. Identical to Atwood Shriek “U/C” #29 except displacement disk on left side is blank. No “049” or “051” shown. U/C model $5.95.
NOTE: A “Super Signature” engine was presumed to have been still been offered, but details are unknown.

38 - ATWOOD SHRIEK “U/C”
- 1958 - .051 in³. Sold, but can’t be identified without measuring. Possibly has an extra gasket shim between cylinder and case.

39 - ATWOOD SHRIEK SPECIAL “U/C” - 1958 - .049 in³. While this appears to be a new engine, the use of a glow plug type cylinder muff indicates the using up of older parts.

40 - ATWOOD SHRIEK “U/C”
- 1958 - .049 in³. While this appears to be a new engine, the use of a glow plug type cylinder muff indicates the using up of parts. Or collector assembled at a later time.

NOTE: Pictured Tulsa built engines have a variety of glow plugs which are probably not what came new on the engine. Most original plugs were a fairly low profile design.

AVIATION INDUSTRIES
See New Hurricane

AVIATION PRODUCTS Co.
See New Hornet

AVION MACHINE & TOOL
Woonsocket, RI

1 - AVION MERCURY - 1938
- 1.503 in³ spark. Webbed case front with lugs at rear for rear cover with 5 screws. “Duralumin” castings. Supplied tank not attached to venturi as with later models. Instructions call for tank being placed at CG of model. Left hand shaft threads. Exhaust on right side.

NOTE: Early timers were an almost exact copy of the Forster 99 timer, including straight timer arm. Cast, keyed, styled timer arm appeared later in production of this first model.
venturi. Left hand shaft threads. Exhaust on right side.

3 - AVION MERCURY - 1945
- 1.609 in³ spark. Bore increased. Exhaust on left. Rear of case has boss for screw in rear cover. Plain front housing. Aluminum castings.

4 - AVION MERCURY - 1946
- 1.609 in³ spark. Like #2 with the addition of a throttle on venturi. Smooth crankcase and front cover. Return to exhaust on right side.

### PARTS LIST

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**Standard Steel Screws and Accessories**

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