

OWNERS PARTS LIST
CRAFTSMAN ENGINE

MODEL NUMBER: 143.596012

7 H.P.



SEARS, ROEBUCK AND CO. - U.S.A.

SIMPSONS-SEARS LIMITED, CANADA



Be Sure To Observe Safety Precautions To Prevent Accidents

1. **Stop the engine** whenever you leave the equipment, even for a moment. Make sure blades and all moving parts have stopped, disconnect the spark plug wire from the plug and keep wire away from plug to prevent accidental starting before cleaning, making any adjustments, inspecting or repairing.
2. **Check fuel** before each using. Do not fill gasoline tank when engine is running or while engine is hot. Wipe off any spilled gasoline before starting engine - - gasoline is highly flammable - always handle with care.
3. **Do not run engine indoors**, exhaust gases contain carbon monoxide which is odorless and deadly poison. If for some reason engine must be run indoors, open all doors and windows to provide sufficient ventilation.
4. **For engines** equipped with a No Pull Starter, be sure and read the handling and safety precautions in your engine manual.
5. **Disengage** self propelling unit or drive clutch on units so equipped before starting engine - - Keep guards in place.
6. **Don't change** governor settings or overspeed the engine. The governor controls the speed and protect the engine from damaging, excessive speeds. Excessive speeds are dangerous.
7. **Don't store** equipment with fuel in the tank inside a building where fumes may reach an open flame or spark. Let the engine cool before storing in any enclosure.
8. **Never leave** engine running unattended.
9. **Keep** all screws, nuts and bolts tight to be sure equipment is in safe operating condition. Keep equipment clean at all times.
10. If your equipment should start vibrating, stop the engine and check for damage or loose parts. Vibration generally is a warning of trouble.

IMPORTANT

1. **READ ALL INSTRUCTIONS CAREFULLY BEFORE OPERATING THIS ENGINE.**
2. **MAKE ONLY THE SIMPLE ADJUSTMENTS AS OUTLINED IN THIS BOOK.**
3. **FOR ANY MAJOR ADJUSTMENTS OR REPAIRS CONTACT YOUR NEAREST SEARS, ROEBUCK AND CO. OR SIMPSON-SEARS RETAIL, MAIL ORDER OR CATALOG SALES OFFICE STORE.**
4. **KEEP THIS BOOK HANDY AT ALL TIMES FOR FUTURE REFERENCE. READ IT CAREFULLY AND FAMILIARIZE YOURSELF WITH THE OPERATING AND MAINTENANCE INSTRUCTIONS. THIS BOOK ALSO CONTAINS A COMPLETE PARTS LISTING.**

CRAFTSMAN QUALITY ENGINE

GUARANTEE

We guarantee all Craftsman Engines to be free from defects in material and workmanship. When properly used, cared for, and maintained, we will replace at our option and install, without cost to you, for a period of one (1) year from date of sale, any part which proves, upon our examination, to be defective under normal use.

This guarantee does not cover adjustments to carburetors, ignition points, replacement of spark plugs, cleaning, sharpening of blades, or any service or adjustment made necessary by normal use and wear nor does it cover any failures which are a result of improper care, negligence, abuse, failure to lubricate properly or use of contaminated fuels or lubricants.

Damage resulting from striking solid or foreign objects (rocks, tree roots, sprinkler heads, iron pipe, walk edge, etc.) is not covered by this guarantee.

Equipment used for rental or commercial purposes is guaranteed only for thirty (30) days.

SEARS, ROEBUCK AND CO.

CUSTOMER'S RESPONSIBILITIES

Always use care when operating mechanical or powered equipment. Keep clear of moving parts, belts or chains. Do not work on equipment with the engine running. Avoid striking or running into solid objects or debris in the area to be worked. Clear the area of foreign objects such as: sticks, stones, wire, etc. Keep your equipment clean and check for loose bolts, nuts and fasteners. Check the engine oil regularly and change it as outlined in your engine manual.

Your guarantee is intended to provide you with adequate protection against failures due to defects in material or workmanship but it does not cover adjustments or replacement of parts due to normal wear or use nor does it cover damage that may result in use.

BEFORE STARTING ENGINE

Fill gasoline tank (not attached to engine) with clean fresh regular grade of gasoline.

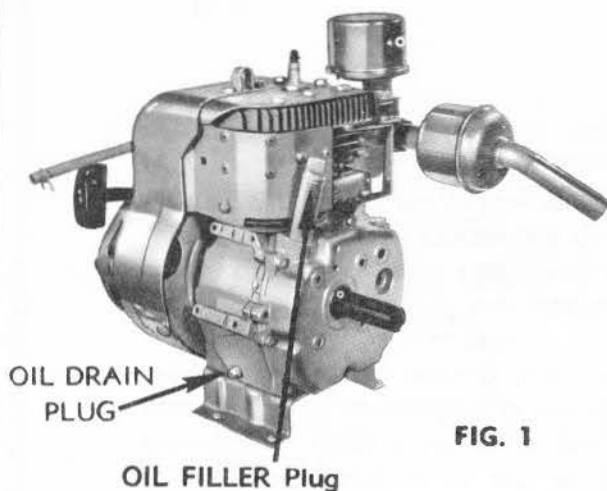


FIG. 1

1. Before starting, fill crankcase with 1-3/8 pint of oil or to "Full" mark on dipstick. Be sure dipstick is screwed in and that engine is level.

2. Use Allstate MS SAE #30 oil or equivalent. If not available, use Allstate Multi-Grade All-Weather oil (SAE 10W-20W-30W) or equivalent.

3. In climates where it is cool in the spring and fall, the above All-Weather oil will produce easier starting.

4. Change oil after first two hours of operation and every 25 operating hours thereafter. Check oil every eight operating hours.

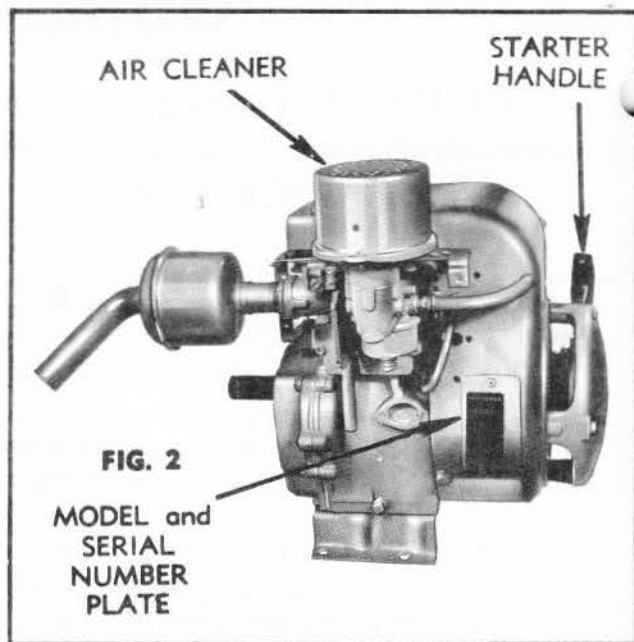
TO START ENGINE

CAUTION: Keep hands and feet clear of blades and all moving parts.

- 1 To start cold engine, move choke lever to "FULL CHOKE" position.

HOW TO USE STARTER

- 1 Grasp recoil starter handle and pull sharply. Do not allow starter rope to snap back. Rewind slowly keeping hold of the starter handle at all times.
- 2 After engine starts, move choke lever to open position. Note: If engine is warm do not choke to start.
- 3 To stop your engine, move the throttle control to the "OFF" or "STOP" position.



SERVICE INSTRUCTIONS

To obtain longest life and trouble free use of your engine, certain normal maintenance must be performed as outlined below:

Disconnect spark plug wire at spark plug before performing any maintenance to prevent accidental starting of engine.

CHANGE OIL

- 1 Change oil in engine crankcase after first 2 hours of operation. Unscrew oil drain plug located on end of engine base. (See Fig. 1)
- 2 Replace oil drain plug and refill engine crankcase with oil as per instructions in Figure 1.
- 3 Thereafter check oil level often, before each using, at each eight hours of operation and add oil if necessary to bring up to proper level. (See Fig. 1)
- 4 Change oil at each 25 hours of operation.

PROPER FUEL

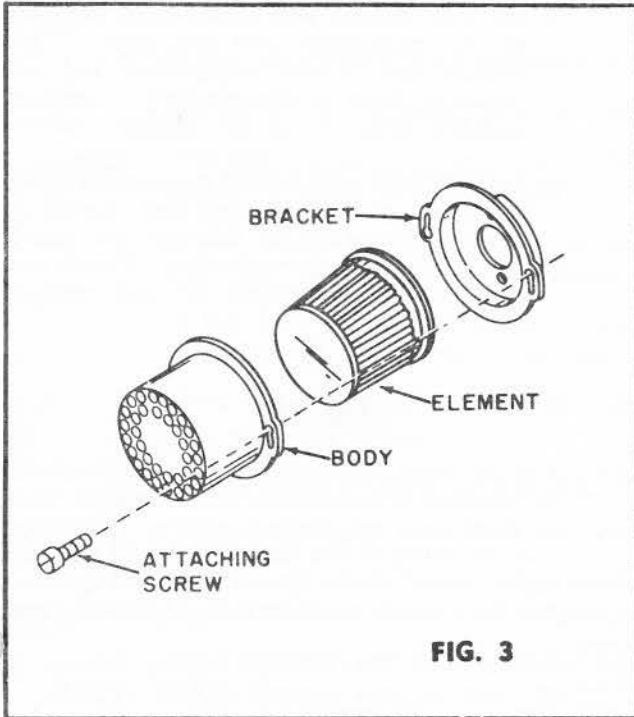
- 1 Use a good grade of fresh CLEAN Regular gasoline.

CLEAN ENGINE

- 1 Wipe off all spilled fuel and oil.
- 2 Keep engine clean of foreign matter at all times. Be sure air fins on Cylinder are kept clean to permit proper ventilation. Remember, this is an air cooled engine and free air flow is important for proper engine performance and life.

SERVICE AIR CLEANER

Your engine is equipped with a dry type air cleaner and must be periodically removed and cleaned to maintain maximum engine performance.



To clean, loosen screws that hold air filter body to bracket. Twist body and lift body from bracket, then proceed as follows:

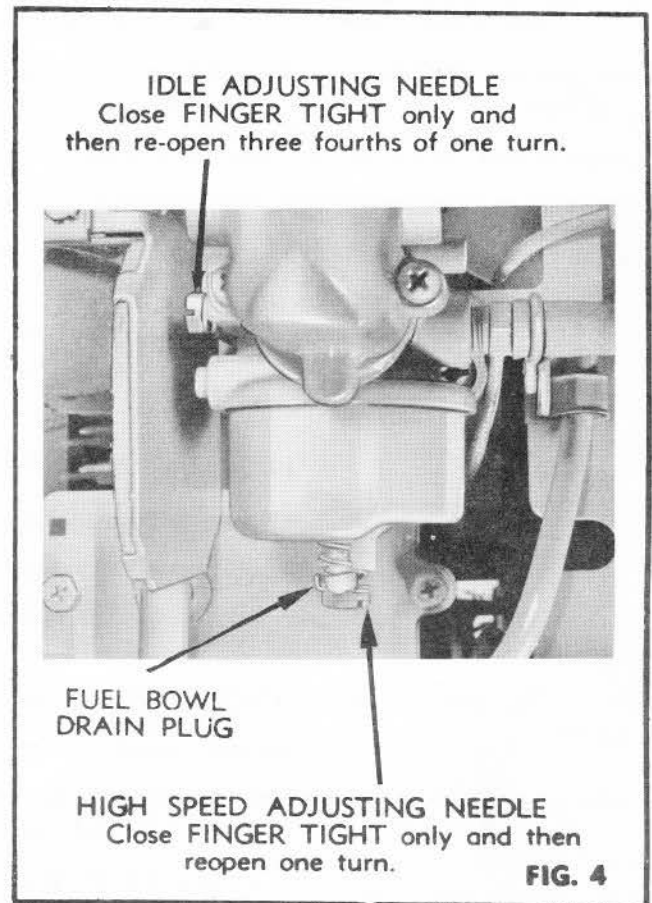
- 1 Pull element out of the body.
- 2 Tap element lightly to dislodge accumulated dirt and brush dirt from element.
Do not wash element in gasoline or other solvent.
- 3 Clean the body and bracket with gasoline or any solvent.
- 4 Reassemble (See Fig. 3.)
 - (a) Insert element into body with smaller diameter end first.
 - (b) Place body into bracket. Twist body, tighten screws.
- 5 It is recommended that a new air cleaner element be purchased and installed at beginning of each mowing season. This is your best protection against excessive engine wear.

NEVER RUN YOUR ENGINE WITHOUT AIR CLEANER COMPLETELY ASSEMBLED.

CARBURETOR ADJUSTMENT

Do not make unnecessary adjustments. Factory settings are correct for most applications. If adjustments are needed proceed as follows:

- 1 After making initial adjustments as shown below (Fig. 4) start engine.
- 2 Turn "High Speed Adjusting Needle" forward or back $\frac{1}{8}$ turn at a time until engine runs smoothly. If engine tends to stall when unit is in use open needle $\frac{1}{8}$ turn.
- 3 Hold throttle lever in idle position.
- 4 Turn "Idle Adjusting Needle" forward or back $\frac{1}{8}$ turn at a time until engine runs smoothly.



- 5 Allow several seconds between each adjustment for engine carburetor to react to the new setting.

CAUTION: Never attempt to change maximum engine speed. This is preset at factory and can only be changed by a qualified Service repairman who has the necessary equipment.

CHECK SPARK PLUG

- 1** Remove the spark plug each time you change oil and inspect it.
 - a. The electrodes should be kept clean and free of carbon. The presence of carbon or excess oil will greatly deter proper engine performance.
 - b. If possible, check the spark plug gap (area between electrodes) using a wire feeler gauge. This specification should be .030.
- 2** If you need a new Spark Plug refer to the parts list for the proper replacement Spark Plug.
- 3** Before installing Spark Plug coat threads lightly with Graphite Grease if possible to insure easy removal next time the Spark Plug needs inspection.

STORAGE INSTRUCTIONS

- 1** If you are going to store your engine for any length of time (30 days or longer or at the end of the season) you must:
 - a. DRAIN THE GAS TANK.
 - b. DRAIN THE CARBURETOR by allowing engine to run out of gas. Gasoline left in your engine will leave gum deposits in the carburetor and gas tank. This makes fuel system inoperative and will result in hard or non-starting of engine.
 - c. CLEAN ENGINE of all foreign matter.
 - d. LUBRICATE CYLINDER by removing the spark plug and pouring one ounce of clean lubricating oil through the spark plug hole into the cylinder. Crank engine slowly to spread oil and replace Spark Plug.

GENERAL

- 1** Just as your automobile needs professional mechanical maintenance from time to time, so does your air cooled engine. Cleaning and adjusting of the Carburetor and periodic replacement of the Spark Plug and ignition points is made necessary by NORMAL use.
- 2** Professional Air Cooled Engine Service is as close as your nearest SEARS STORE.
- 3** A yearly check-up or tune-up by Sears is a good idea to avoid breakdowns or delay . . . do it at the end of the season, then you're ready for the next. We even prepare it for storage for you.

SERVICE TIPS

REFERENCE TO THIS SECTION MAY HELP AVOID A DELAY IN YOUR WORK OR SAVE THE EXPENSE OF A SERVICE CALL.

Q The engine won't start or is hard to start. What can I do?

- A**
1. You're not out of gas are you? It happens sometimes.
 2. Is the spark plug wire attached to the plug?
 3. Check the spark plug porcelain, maybe it is cracked.
 4. The spark plug may be fouled; clean the electrodes and reset the plug gap; instructions are under "CHECK SPARK PLUG" in this manual.
 5. Is the gas line obstructed? Remove fuel line at carburetor and check for obstruction. Drain gas tank and replace with clean, fresh gasoline.
 6. Is the fuel clean? You didn't use a dirty or rusty gas can did you? If you did, it might be better to let Sears check the fuel system and carburetor.
 7. Stale gas that has set around and lost its strength is a trouble maker . . . hard starting and loss of power results.
 8. Maybe there is water in the gas. Condensation in the tank or in your gas can sometimes happens.
 9. Carburetor could be out of adjustment . . . check "CARBURETOR ADJUSTMENT" in manual.
 10. Maybe you over-choked and flooded the engine. Put throttle in run or fast position and crank several times to clear out the excess gas.
 11. Your throttle control may be set so that it does not fully close the choke.
 12. Dirty or plugged air cleaner? See "SERVICE INSTRUCTIONS" in this manual.

Q My engine misses or lacks power under load. What might cause this?

- A**
1. Your throttle control could be set too close to choke position and flooding the engine.
 2. Spark plug? See under "HARD TO START". Maybe it needs cleaning or replacing.
 3. Water in the fuel does not help the engine to run very good and robs it of power. See under "HARD TO START".
 4. Improper carburetor adjustment. Check "CARBURETOR ADJUSTMENT" in this manual.
 5. Got enough oil in crankcase? Low oil level or dirty oil makes trouble.
 6. A partially plugged air cleaner will restrict the air flow to the carburetor and reduce power. See manual. The engine breathes through the air cleaner.
 7. Don't put oil in the gas. It reduces the efficiency of the engine.

Q The engine seems to overheat. What should I do?

- A**
1. Be sure you have plenty of oil in the crankcase and that it is clean. When did you change last?
 2. Check the oil level in your crankcase. Low oil level will cause overheating.
 3. Sometimes the muffler can get plugged. This causes back pressure, over-heating and loss of power.

CRAFTSMAN 4-CYCLE ENGINE

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BASIC ENGINE

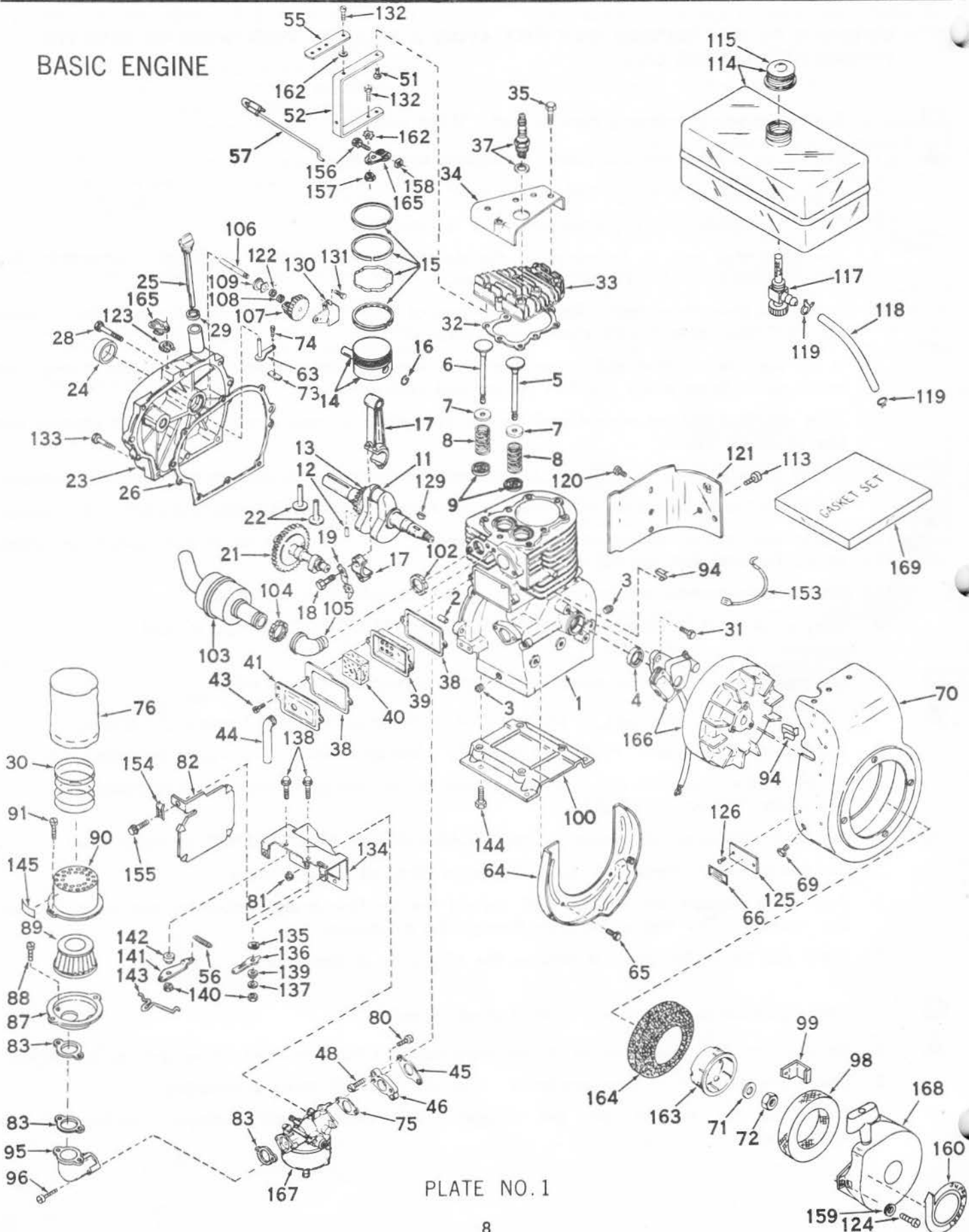


PLATE NO. 1

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PARTS LIST

CRAFTSMAN 4-CYCLE ENGINE

MODEL NUMBER: 143.596012

Ref. No.	Part No.	Part Name
1	32586	Cylinder Assembly (Incl. Nos. 2, 3 & 4)
2	27652	Pin, Dowel
3	27642	Plug, Sq. hd. pipe (oil drain)
4	*32630	Seal, Oil
5	32783	Valve, Intake (Standard) (Incl. No. 9)
5	32784	Valve, Intake (1/32" oversize) (Incl. No. 9)
6	27878A	Valve, Exhaust (Standard) (Incl. No. 9)
6	27880A	Valve, Exhaust (1/32" oversize) (Incl. No. 9)
7	27882	Cap, Upper valve spring
8	27881	Spring, Valve
9	32581	Cap, Lower valve spring
11	32587	Crankshaft Assembly (Incl. Nos. 12 & 13)
12	29783	Pin, Groove
13	27884	Gear, Crankshaft
14	32592	Piston & Pin Assembly (Standard) (Incl. 2 of No. 16)
14	32593	Piston & Pin Assembly (.010 oversize) (Incl. 2 of No. 16)
14	32594	Piston & Pin Assembly (.020 oversize) (Incl. 2 of No. 16)
15	32595	Ring Set (Standard)
15	32596	Ring Set (.010 oversize)
15	32597	Ring Set (.020 oversize)
16	27888	Ring, Piston pin retaining
17	32591	Rod Assembly (Incl. Nos. 18 & 19)
18	650662	Screw, Connecting rod
19	32590	Dipper, Oil
21	32115	Camshaft
22	27893	Lifter, Valve
23	31577B	Cover, Cylinder (Incl. Nos. 24 & 106)
24	*28427	Seal, Oil
25	29668	Dipstick, Oil (Incl. No. 29)
26	*30684	Gasket, Cylinder cover
28	650488	Screw, Hex hd. Sems, 1/4-20 x 1-1/4
29	*29673	Gasket, Dipstick
30	31667	Spring, Pre-cleaner bag
31	650489	Screw, Hex hd. Sems with flat washer, 1/4-20 x 3/4
32	*32631	Gasket, Cylinder head
33	30938A	Head, Cylinder
34	30939	Cover, Cylinder head
35	28261	Screw, Hex hd. cap, 5/16-18 x 2-1/2
37	21943	Plug, Spark (Allstate #60130 or equivalent)

Ref. No.	Part No.	Part Name
38	*27896	Gasket, Valve spring cover (2 required)
39	28423	Body Assembly, Breather
40	28424	Element, Filter
41	28425	Cover, Valve spring
43	650128	Screw, Fil. hd. Sems, 10-24 x 1/2
44	27627	Tube, Breather
45	*27915	Gasket, Intake
46	30195A	Flange, Carburetor
48	30196	Screw, Phil. fil. hd. mach., 5/16-18 x 3/4
51	30319	Rivet, Split
52	31709	Lever, Governor
55	30205	Bracket, Governor adjusting
56	30826	Spring, Extension
57	30824	Link, Governor-to-throttle
63	30699A	Rod Assembly, Governor
64	29536	Baffle, Blower housing
65	650561	Screw, Hex hd. Sems, 1/4-20 x 5/8
66	30592	Decal, Name & Instruction
69	29747A	Screw, Hex hd. cap, 5/16-24 x 3/4
70	31807A	Housing, Blower
71	650490	Washer, Belleville
72	8116	Nut, Crankshaft
73	30700	Yoke, Governor
74	650494	Screw, Phil. fil. hd. Sems, 6-40 x 5/16
75	*31688	Gasket, Carburetor
76	31668	Bag, Pre-cleaner
80	650572	Screw, Phil. flat hd. Sems, 1/4-28 x 1-1/8
81	29752	Nut, Hex, 1/4-28
82	30820	Baffle, Heat
83	*27272	Gasket, Air cleaner
87	31691	Bracket, Air cleaner
88	28820	Screw, Phil. fil. hd. Sems, 10-32 x 1-1/8
89	30727	Filter, Air cleaner
90	31692	Body Assembly, Air cleaner
91	650152	Screw, Fil. hd. Sems, 8-32 x 3/8
94	27275	Clip, Hi-tension
95	31988	Elbow, Air cleaner
96	28597	Screw, Phil. fil. hd. Sems, 10-32 x 3/4
98	32203	Cleaner, Starter air
99	32204	Bracket, Starter air cleaner
100	31757	Base, Engine
102	32862	Nut
103	31506	Muffler

* Indicates Parts Included in Gasket Set, Ref. No. 169.

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Ref. No.	Part No.	Part Name
104	28443	Nut, Conduit
105	29574	Elbow, Street
106	31845	Shaft, Mechanical governor
107	30591	Gear Assembly, Governor
108	29193	Ring, Retaining
109	30588A	Spool, Governor
113	30688	Screw, Hex hd. cap, 1/4-20 x 7/16
114	31758	Tank, Assembly Fuel (Incl. No. 115)
115	32387A	Cap, Fuel tank
117	29683	Strainer & Shut-off Valve, Fuel
118	30705	Line, Fuel
119	26460	Clamp, Fuel line
120	650128	Screw, Fil. hd. Sems, 10-24 x 1/2
121	30622	Extension, Blower housing
122	30590A	Washer, Flat
123	29642	Ring, Retaining
124	30513	Screw, Phil. fil. hd. mach., 1/4-28 x 1/2
125	31345	Plate, Identification
126	29309	Stud, Drive
129	32589	Key, Flywheel
130	31843A	Bracket, Governor
131	28763	Screw, Slotted hex hd., 10-24 x 7/16 thr'd cutting
132	650548	Screw, Hex slotted washer hd., 8-32 x 3/8
133	650493	Screw, Hex hd. Sems, 1/4-20 x 1-3/4
134	30821	Bracket, Speed control
135	28558	Washer, Wave
136	30314	Lever, Speed control
137	30369	Washer, Flat
138	**30312	Screw, Hex slotted washer hd. Sems, 10-32 x 1/2
139	30773	Bushing, Control lever
140	**30529	Nut, Lock, 10-32

Ref. No.	Part No.	Part Name
141	30823	Lever, Bellcrank
142	29530	Bushing, Bellcrank lever
143	30825	Link, R. P. M.
144	650542	Screw, Hex hd. cap, 5/16-18 x 7/8
145	31752	Decal, Air cleaner
153	31902	Wire Assembly, Ground
154	27793	Clip, Conduit
155	28942	Screw, Hex hd. Sems, 10-32 x 3/8
156	29826	Screw, Hex washer hd., 10-32 x 3/4
157	30322	Nut, Lock, 8-32
158	29216	Nut, Square, 10-32
159	650168	Washer, Flat
160	32179	Decal, "Super-Start"
162	29918	Lockwasher, No. 8 E. T.
163	32125	Hub, Starter
164	590417	Screen, Starter hub
165	29916	Clamp, Governor
166	610689A	Magneto (See Plate No. 2)
167	631454	Carburetor (See Plate No. 3)
168	590420	Starter, Rewind (See Plate No. 4)
169	32658	Gasket Set (Incl. items marked *)
	691932	Owners Parts List

* Indicates Parts Included in Gasket Set, Ref. No. 169.

** In original production rivets are used instead of the screws and nuts illustrated. Rivets can be removed and illustrated hardware used when replacing component parts.

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Magneto No. 610689A

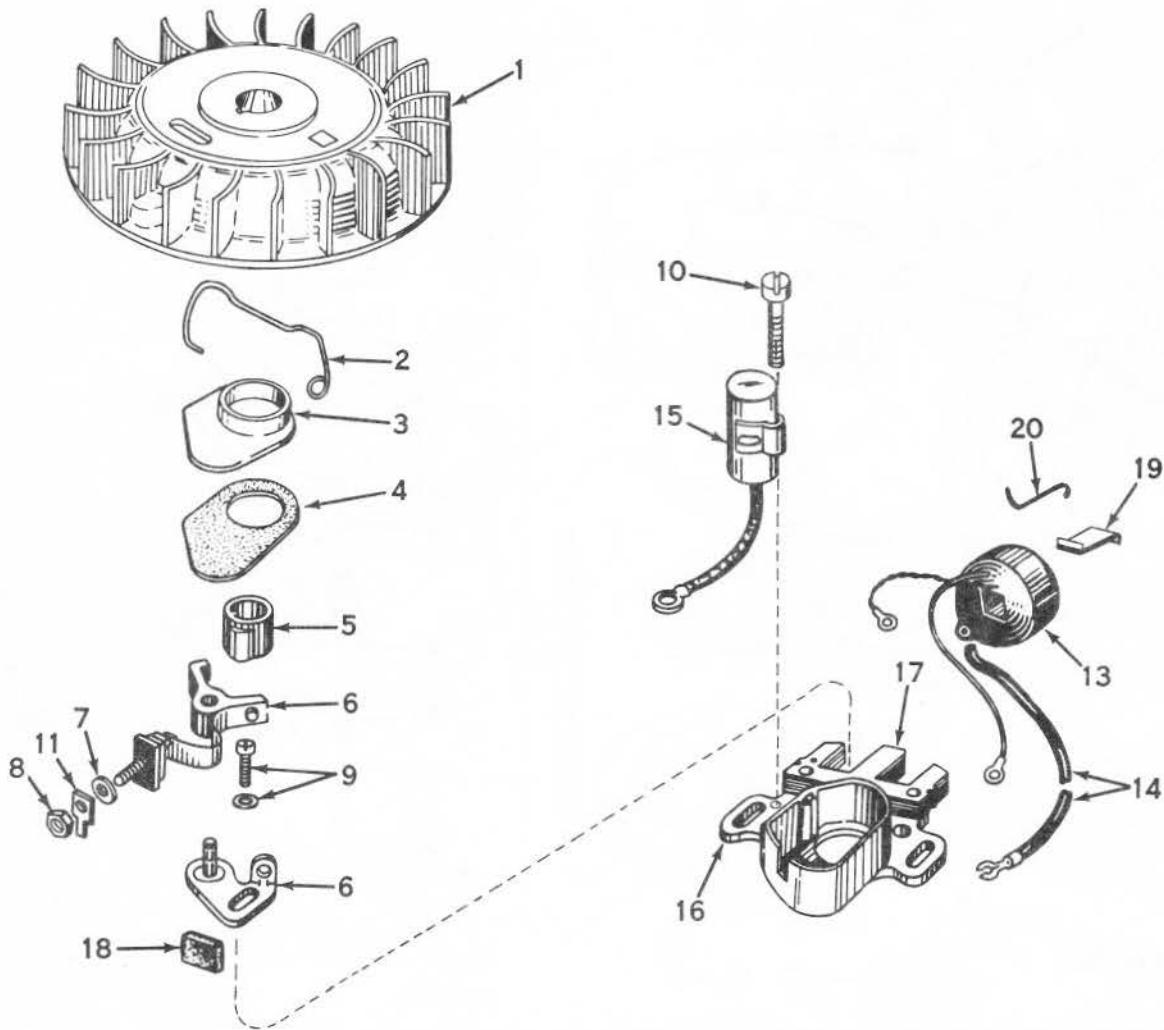


PLATE NO. 2

Ref. No.	Part No.	Part Name
	610689A	Magneto
1	30555	Flywheel
2	30551	Spring, Breaker box dust cover
3	30550	Cover, Breaker box dust
4	30883	Gasket, Dust cover
5	30992	Cam, Breaker
6	30547A	Breaker Assembly
7	610385	Washer, Terminal
8	610408	Nut, Terminal
9	29181	Screw and Washer Assembly, Breaker

Ref. No.	Part No.	Part Name
10	610593	Screw, Condenser fastening
11	30843	Tab, Ground terminal
13	30560	Coil Assembly (Incl. Ref. Nos. 14, 15 & 19)
14	30554	Wire, Ignition lead
15	30548A	Condenser
16	30545	Core and Plate Group
17	30561A	Stator Assembly
18	30549	Felt, Cam wiper
19	29629	Spring, Coil wedge
20	31311	Clip, Coil locking

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Carburetor No. 631454

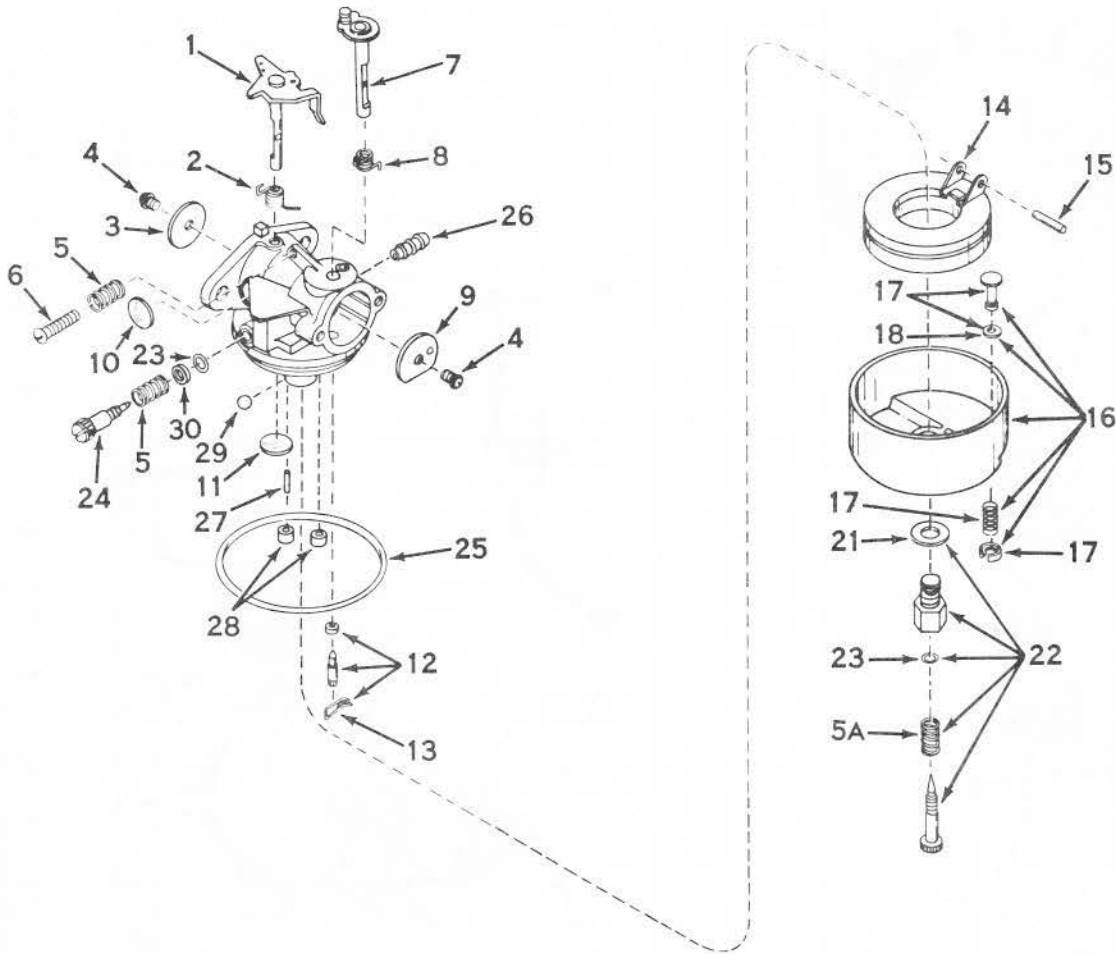


PLATE NO. 3

Ref. No.	Part No.	Part Name
1	631454 31834	Carburetor Shaft & Lever Assembly, Throttle
2	630731	Spring, Throttle return
3	631036	Shutter, Throttle
4	650506	Screw, Rd. hd. 4-40 x 3/16
5	630766	Spring, Idle regulating screw
5A	630738	Spring, Main adjustment screw
6	650417	Screw, Idle regulating
7	31842	Shaft & Lever Assembly, Choke
8	630757	Spring, Choke return
9	31837	Shutter, Choke
10	630748	Plug, Welch
11	631027	Plug, Welch
12	*631021	Inlet Needle, Seat & Clip Assy. (Incl. No. 13)
13	631022	Clip, Inlet needle
14	631023	Float, Carburetor

Ref. No.	Part No.	Part Name
15	*631024	Shaft, Float
16	631025	Bowl & Drain Assy., Float (Incl. No. 17)
17	27136A	Plunger Assembly, Drain (Incl. No. 18)
18	27554	Gasket, Drain plunger
21	*27110	Gasket, Bowl-to-body
22	*31839	Adjustment Screw Assy., Main (Incl. Nos. 5A, 21 & 23)
23	630740	"O" Ring, Adjustment screw
24	*631078	Screw, Idle adjustment
25	*631028	"O" Ring, Bowl-to-body
26	31838	Fitting, Fuel inlet
27	631039	Pin
28	630747	Plug, Cup
29	631081	Ball, Aluminum
30	630739	Washer, Flat
31	31840	Repair Kit (Incl. items marked *)

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Rewind Starter No. 590420

NOTE: No-Pull Starter #590365 can be installed in place of original equipment starter if desired.

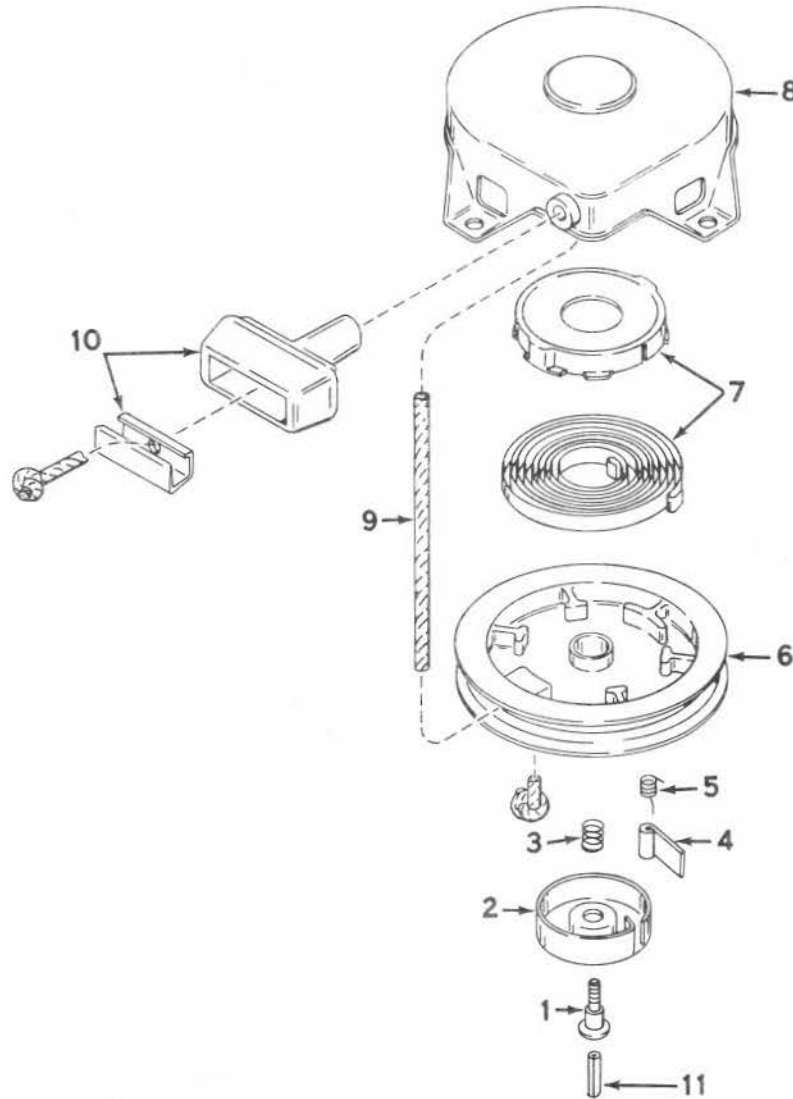


PLATE NO. 4

Ref. No.	Part No.	Part Name
1	590409	Screw, Retainer
2	590410	Retainer, R.H.
3	590411	Spring, Brake
4	590148	Dog, Starter
5	590412	Spring, R.H. dog
6	590413A	Pulley

Ref. No.	Part No.	Part Name
7	590414	Spring & Keeper Assy.
8	590415	Housing Assy., Starter
9	590386	Rope, Starter
10	590387	Handle Assy., Starter
11	590459	Pin, Centering

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COAST TO COAST NATION-WIDE

SERVICE FROM SEARS

FOR YOUR CRAFTSMAN ENGINE



SEARS, ROEBUCK AND CO. and SIMPSONS-SEARS, LIMITED in Canada back up your investment with quick mechanical service and genuine replacement parts.

If and when you need repairs or service, call on us to protect your investment in this fine piece of equipment.

ENGINE MODEL NUMBER

The Model Number shown on the cover page will be found on a plate attached to the cylinder. Always mention the model number in all correspondence regarding the Craftsman engine.

EQUIPMENT MODEL NUMBER

For Equipment Parts List see owners manual.

HOW TO ORDER REPAIR PARTS

All parts listed herein may be ordered through SEARS, ROEBUCK AND CO. or SIMPSONS-SEARS, LIMITED. When ordering parts by mail from the catalog sales unit which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER.
2. The PART NAME.
3. The MODEL NUMBER OF THE ENGINE.

SEARS, ROEBUCK AND CO. - U.S.A.

SIMPSONS-SEARS LIMITED, CANADA