

**Manual
Motor / Power Unit
Kohler Engines
Model K141T
Engine Specs 29287C**

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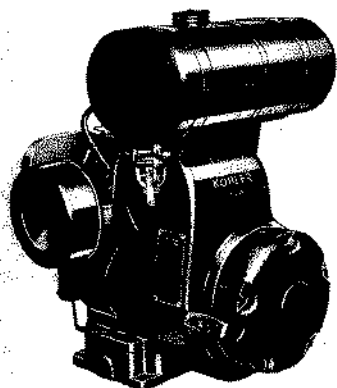
KOHLER CO.

KOHLER, WIS., U.S.A.

VER

MODEL K141T

SPEC. 29287C



3.7 HP at 1800 RPM
 5.0 HP at 2400 RPM
 5.9 HP at 3000 RPM
 6.25 HP at 3600 RPM

This booklet is designed to provide you with information on the proper care of your Kohler engine. Read it carefully to ensure trouble-free operation and long engine life.

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1. Before Starting

- a. Remove oil filler cap and fill crankcase with 2½ pints of oil (new engines). If engine has been operated previously, check oil level and add clean oil to mark indicated on dipstick. Use chart below to determine oil weight. Oil should have an American Petroleum Institute (API) classification of service MS.

OIL CHART
API Service MS

Air Temperature	Oil Viscosity
Above 30° F	SAE 30
30° F - 0° F	SAE 10W-30
Below 0° F	SAE 5W-20

- b. Fill the fuel tank with clean, fresh regular grade gasoline (octane rating of 90 or higher). *Do not mix oil with gasoline. Be sure that vent hole in cap is open.*

2. To Start

- a. Open valve on sediment bowl.
- b. Close choke lever. More or less choking may be necessary due to variations in temperature, grade of fuel, etc. Little or no choking will

be needed when engine is warm. Experience will teach you the degree of choking necessary under varying conditions. Set throttle in start position. After engine has started, set throttle at desired speed. Allow engine to warm up before applying load.

3. To Stop

Whenever possible, it is recommended to remove load and let engine idle before stopping.

- a. Press breaker point "STOP" button and hold until engine is *completely* stopped.

4. Safety Precautions

- Do not add fuel while engine is running. Stop engine and, if possible, allow cooling period to prevent spilled fuel from igniting on contact with hot engine parts.
- Always disconnect spark plug cable to prevent unintentional starting before making any adjustments on equipment powered by engine.
- Make sure all safety guards on engine and driven equipment are in proper position and secure.
- Make sure hands, feet, and clothing are at a safe distance from any movable parts prior to starting.
- Do not tamper with governor settings. The governor establishes safe operating limits. These limits must not be exceeded.

MAINTENANCE

1. Each Day

- a. Check fuel supply and oil level in crankcase. Add oil only as needed to keep the level between the marks on the dipstick. (Use type of oil specified on engine instruction plate.)
- b. Clean oil and dirt from external surfaces of power unit. On air cooled engines it is especially important that the rotating air screen, flywheel fins and cooling fins on the cylinder head and block are maintained in clean condition at all times to ensure proper air circulation.

2. Every 25 Operating Hours

- a. Change oil in crankcase. (Change more often under extremely dusty conditions). Be sure there are no air leaks at gasket joints between air cleaner, carburetor and cylinder block.
- b. Remove, clean and replace sediment bowl.
- c. Wipe oil and dirt from engine block, spark plug and oil fill.

3. Every 100 Operating Hours

In addition to regular 25 hour inspection and maintenance:

- a. Check spark plug and reset gap to .025. Set radio shielded spark plugs at .020.
- b. Remove, clean and replace sediment bowl.

4. Every 500 Operating Hours

Perform regular 25, and 100, hour service and in addition:

- a. Check ignition timing.
- b. Check valve tappet clearance and clean carbon from valve stems.
- c. Remove head and clean out deposits.
- d. Check magneto.
- e. Clean carburetor.
- f. Check engine compression.

INSTRUCTIONS FOR STORING

If engine is to be out of service for a considerable length of time the following is recommended:

- a. Drain oil from crankcase while engine is still hot and flush with clean, light oil. Refill crankcase.
- b. Drain fuel tank and carburetor.
- c. Remove, clean and replace sediment bowl.
- d. Clean exterior of engine.
- e. Spread a light film of oil over any exposed surfaces of engine subject to corrosion.
- f. Pour tablespoon of oil into spark plug hole, crank engine slowly by hand and replace spark plug.
- g. Store in dry place.

Following is a list of troubles which may occur from average use and normal wear.

1. Hard Starting or Loss of Power**a. Faulty Ignition**

- (1) Loose or grounded high tension or breaker point leads.
- (2) Incorrect spark timing.
- (3) Improper breaker point gap.
- (4) Defective breaker points.
- (5) Faulty spark or improper gap.
- (6) Faulty condenser or coil.

b. Faulty carburetion.

- (1) Gasoline not getting to carburetor.

(a) Dirt or gum in fuel line.

- (2) Dirt in carburetor.
- (3) Carburetor improperly adjusted.

c. Compression loss.

- (1) Valves leaking or sticking.
- (2) Rings worn.
- (3) Head gasket leaking.

2. Overheating

- a. Insufficient available cool air.
- b. Dirty air intake screen, shroud or cooling fins.
- c. Improper fuel.
- d. Fuel mixture too lean.
- e. Improper ignition timing.

3. Backfiring

- a. Fuel mixture too lean.
- b. Sticky intake valve.
- c. Improper timing.

4. Occasional Missing at High Speed

- a. Spark plug gap too wide.
- b. Improper carburetor setting or lack of fuel.
- c. Wrong type spark plug. Use recommended spark plug.
- d. Improper timing.

5. Knocking

- a. Fuel octane rating too low.
- b. Overheated engine.

- c. Improper timing.
- d. Loose connecting rod.
- e. Excessive carbon in combustion chamber.

6. Operating Erratically

- a. Clogged fuel line.
- b. Water in fuel.
- c. Faulty choke control.
- d. Improper fuel mixture.
- e. Loose ignition system connections.
- f. Air leaks in manifold or carburetor connections.

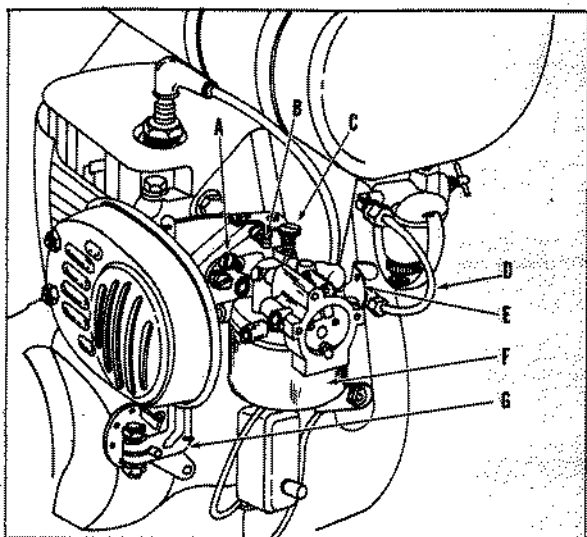
7. Engine Will Not Idle

- a. Improper carburetor idling adjustment.
- b. Carburetor jets clogged.
- c. Spark plug gap too small.
- d. Leaking carburetor or manifold gaskets.
- e. Sticking or leaking valves.
- f. Weak coil or condenser.

SERVICE PROCEDURE

1. Carburetor Adjustments

The carburetor is adjusted at the factory and under normal operating conditions will require no re-adjustments. In case adjustment is necessary, the following procedure is recommended:



A - Idle adjustment screw
B - Idle stop screw
C - High speed adjustment screw
D - Fuel line

E - Choke lever
F - Carburetor bowl
G - Governor arm

- a. Turn high speed needle (C) counter-clockwise two turns (from closed position), and start engine.
- b. When engine reaches normal operating temperature, accelerate and check response. Operate engine under full load and adjust the high speed needle for the leanest mixture which will allow satisfactory acceleration and steady governor operation.
- c. If the engine misses and backfires, the high speed mixture is too lean. The high speed adjustment screw must be turned counter-clockwise $\frac{1}{4}$ turn at a time to correct this condition.
- d. If the engine shows sooty exhaust and is sluggish, the mixture is too rich. To correct, the high speed adjustment screw should be turned clockwise until smooth running is reached.
- e. To make final check of the high speed adjustment, operate under full load and make any other corrections necessary.
- f. Idle screw (A) adjustments should be made at the same time as the high speed adjustments, as each one affects the other.
- g. The final idle adjustment should be made at a speed not less than 1000 RPM until smoothest idle is obtained.

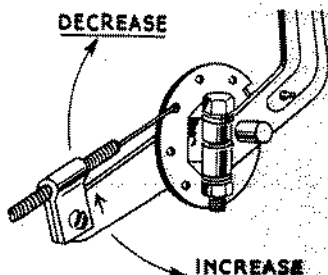
Warning: Do not use force on high speed adjustment screw or idle mixture screw—they will be damaged.

GOVERNOR ADJUSTMENT

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All Kohler engines are equipped with governors and operating speed is determined by throttle control setting. The governor maintains engine speed under varying loads and serves as a top speed limiting device. To prolong engine life and for safety's sake, never allow an engine to operate at speeds in excess of recommended maximum or run continuously at wide open throttle.

Governors are set when the engines are assembled, however, minor adjustments may be necessary. To adjust the speed range use the following procedure:

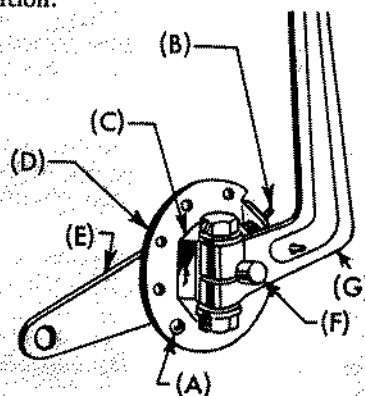


- Bend end of throttle wire.
- With control handle in an open position, insert throttle wire into speed control disc hole nearest throttle bracket.
- Install cable clamp and bolt to throttle bracket.
- Remove drive pin (A) from speed control disc (D) and operate control handle, rotating disc from idle to full speed.
- Operating speed range can be changed by moving throttle.

In many cases a drive pin is used as a maximum speed stop on the governor.

To adjust this type of governor:

- Turn the speed control disc all the way to the left—drive pin will strike throttle bracket.
- Attach throttle cable to disc and fasten cable clamp to throttle bracket.
- Bring control handle to full throttle position and adjust cable length so that drive pin continues to touch throttle bracket. This is full throttle position.



- | | |
|---------------------|------------------------|
| A - Drive pin | D - Speed control disc |
| B - Governor spring | E - Throttle bracket |
| C - Bushing nut | F - Governor shaft |
| | G - Governor arm |

AIR CLEANER

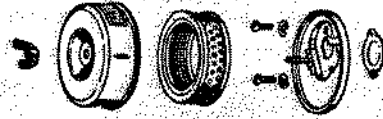
The air cleaner is one of the most important parts of the engine from the standpoint of engine life. If dirty air gets into the engine, it can wear out a set of piston rings within a few operating hours.

Dry paper element type cleaners can be cleaned by removing the element and tapping lightly, causing loose dirt to fall off. The element should be replaced if dirt does not drop off easily.

The paper element should be handled with care to avoid perforations. Removing the dirt with compressed air can rupture the paper element.

Check to ensure that gasket surfaces of element are not bent or damaged in any way. Gasket surfaces must seal tightly at top and bottom of cleaner shell to prevent foreign matter from entering the carburetor.

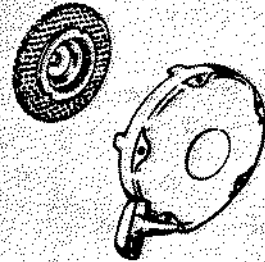
Whenever air cleaner is removed, cover air intake hole to prevent dirt from falling into carburetor. The gasket must fit tightly to prevent unfiltered air from entering carburetor.

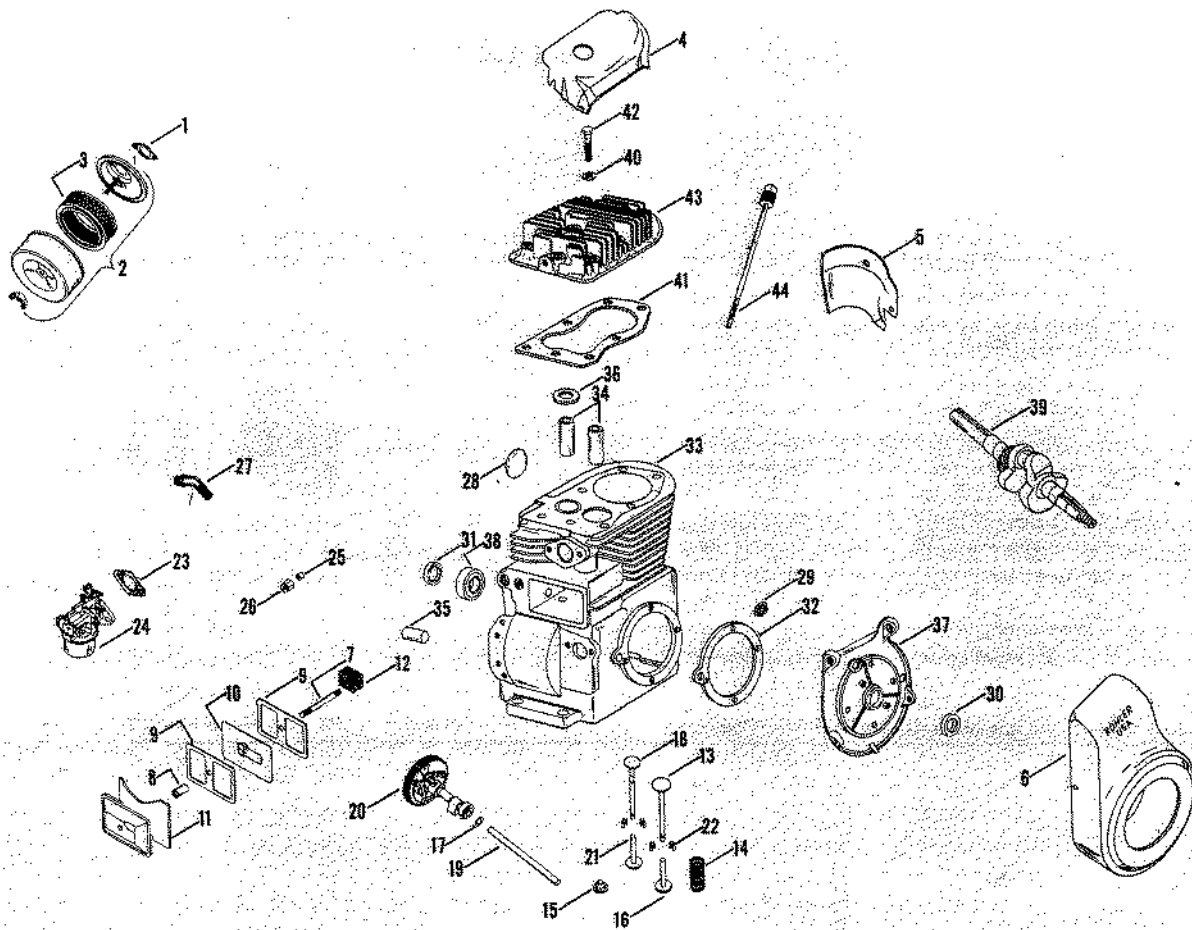


- a. *Be sure starter screen is kept clean when operating engine* or serious engine damage can result from lack of cooling air.
- b. After engine has started, do not allow starter cable to snap back into starter housing. Continue to hold handle and allow starter cable to rewind slowly.

Note: Releasing handle when starter cable is extended will shorten life of starter.

- c. Do not use starter in a rough manner, such as jerking or pulling starter cable all the way out. A smooth, steady pull will start engine under normal conditions.
- d. Always pull starter handle straight out so that cable will not receive excessive wear from friction against guide. Proper procedure will prevent unnecessary wear.
- e. If recoil starter should ever fail, starter assembly can be removed and engine cranked with a rope. The starter drive cup will serve as a pulley for emergency purposes.





K141T ENGINE PARTS LIST

Covers K141T engine, SPEC. 29287C

AS MANUFACTURED FOR
HOWARD ROTAVATOR CO. LTD.

K141T

SPEC. 29287C

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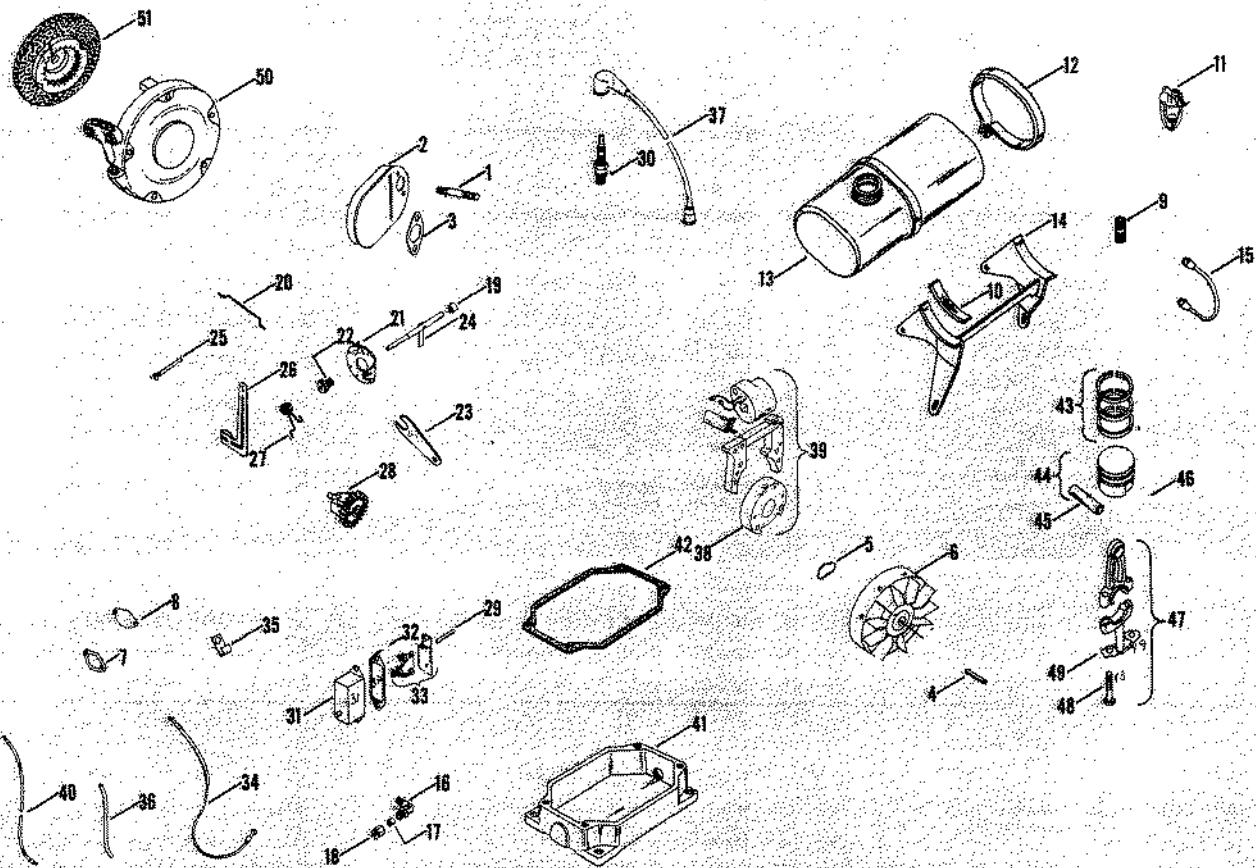
Item No.	Quantity	Part No.	Description
<u>AIR INTAKE GROUP</u>			
1	2	X-18-2	Washer, lock #8
2	2	X-51-12	Screw, R.H.M. 8 - 32 x 3/8
3	1	220537	Gasket
4	1	A-230837	Cleaner, dry type - assembly
5	1	230840	Element
<u>BAFFLES & SHROUD GROUP</u>			
1	1	X-132-1	Screw, H.C. 1/4 - 20 x 3/8
2	1	X-132-2	Screw, H.C. 1/4 - 20 x 3/4
3	1	X-134-1	Screw, sltd. hd. 1/4 - 20 x 3/4
4	1	230049	Baffle, head
5	1	230054	Baffle, cylinder
6	1	232695	Housing, blower
<u>BREATHER & VENT GROUP</u>			
1	1	X-20-1	Washer, lock 1/4
2	1	X-81-1	Nut, hex. 1/4 - 20
3	1	230043	Stud, valve cover
4	1	230046	Seal, breather
5	2	230048	Gasket, valve cover
6	1	A-230066	Breather - assembly
7	1	A-230774	Cover, valve - assembly
8	1	231419	Filter

Item No.	Quantity	Part No.	Description
<u>CAMSHAFT & VALVES GROUP</u>			
13	1	230008	Valve, intake
14	2	230010	Spring, valve
15	2	230011	Retainer, spring
16	1	230013	Tappet, intake valve
17	A.R.	230293	Spacer, camshaft .005
18	A.R.	230294	Spacer, camshaft .010
19	1	230710	Valve, exhaust
20	1	230053	Pin, camshaft
21	1	A-232776	Camshaft - assembly
22	1	232777	Tappet, exhaust valve
23	4	240013	Keeper, spring
<u>CARBURETOR GROUP</u>			
24	2	X-140-1	Screw, sltd. hd. 1/4 - 20 x 3/4
25	1	210223	Gasket, carburetor
26	1	F-220517	Carburetor - assembly
27	1	220547	Sleeve
28	1	220786	Nut
29	1	231668	Elbow
<u>CRANKCASE GROUP</u>			
30	4	X-5-B	Screw, H.C. 1/4 - 20 x 3/4
31	4	X-25-55	Washer 1/4

Item No.	Quantity	Part No.	Description
28	1	X-230-11	Plug, expansion
29	1	X-301-1	Button, plug
30	1	X-583-1	Seal, front oil
31	1	X-583-2	Seal, rear oil
32	1	230071	Gasket, bearing plate
33	1	A-231342	Block, cylinder - assembly
34	2	230007	Guide, valve
35	1	230125	Shaft, governor
36	1	230170	Insert, exhaust seat
37	1	A-231660	Plate, bearing - assembly
38	1	231625	Bearing, ball
<u>CRANKSHAFT GROUP</u>			
39	1	A-231561	Crankshaft
<u>CYLINDER HEAD GROUP</u>			
40	7	220534	Washer
41	1	230024	Gasket, head
42	7	230175	Screw, H.C. 5/16 - 18 x 1-1/2
43	1	230402	Head, cylinder
<u>DIPSTICK GROUP</u>			
44	1	A-231271	Dipstick - assembly

A.R. As required

Indented part numbers and descriptions are components of preceding assembly.



Item No.	Quantity	Part No.	Description
			<u>EXHAUST GROUP</u>
1	2	X-82-2	Nut, hex. 5/16 - 18
2	2	230909	Stud, muffler
3	1	A-230943	Muffler
	1	231090	Gasket, muffler
			<u>FLYWHEEL GROUP</u>
	1	X-24-2	Washer, lock 5/8
4	1	X-85-1	Nut, hex. 5/8 - 18
5	1	X-286-10	Key
6	1	230148	Washer, tension
	1	231638	Flywheel
			<u>FUEL PUMP DR. PAD COVER GROUP</u>
	2	X-132-6	Screw, H.C. 1/4 - 20 x 1/2
7	1	240281	Gasket, fuel pump pad
8	1	240282	Cover, pump pad
			<u>FUEL TANK & FITTINGS GROUP</u>
	2	X-5-4	Screw, H.C. 1/4 - 20 x 1-1/4
9	1	X-101-8	Nut, elastic stop
10	2	X-217-6	Nipple
11	1	X-295-2	Webbing
12	1	A-210301	Filter, fuel
13	2	230160	Strap, tank
14	1	230164	Tank, fuel
15	1	A-230752	Bracket, tank
16	1	231292	Line, fuel
17	1	231510	Elbow
	1	220647	Sleeve

Item No.	Quantity	Part No.	Description
18	1	220786	Nut
			<u>GOVERNOR GROUP</u>
	1	X-5-7	Screw, H.C. 1/4 - 20 x 1
	1	X-25-12	Washer
	1	X-25-13	Washer, brass
	1	X-25-68	Washer
	2	X-25-72	Washer 1/4
	1	X-67-5	Screw, drive 2 x 3/16
	1	X-67-46	Screw, self tapping
	1	X-81-1	Nut, hex. 1/4 - 20
19	1	X-293-4	Bearing, needle
20	1	230078	Linkage, governor
21	1	230149	Disc, regulating
22	1	230476	Bushing, governor
23	1	230477	Bracket, speed control
24	1	A-230540	Shaft, gov. cross - assembly
25	1	231355	Pin, governor stop
26	1	232614	Lever, governor
27	1	232617	Spring, governor
28	1	A-235157	Gear, governor
			<u>IGNITION GROUP</u>
	4	X-131-1	Screw, F.H.M. 10 - 24 x 3/8
29	1	X-132-4	Screw, H.C. 1/4 - 20 x 1
30	1	X-389-2	Rod, breaker
31	1	270321	PTUG, spark
32	1	A-220136	Cover, breaker - assembly
	1	220174	Gasket, cover

Item No.	Quantity	Part No.	Description
33	1	A-220474	Breaker - assembly
	1	220475	Points, breaker
34	1	A-232543	Lead, ground
35	1	230249	Clip, cable
36	1	230334	Sleeve, cable
37	1	A-230783	Cable
38	1	231631	Rotor
39	1	231632	Stator - assembly
40	1	A-231797	Lead, breaker
			<u>OIL PAN GROUP</u>
	1	X-75-28	Plug, pipe 1/2
41	4	X-154-3	Screw, H.C. 5/16 - 18 x 1-1/8
42	1	230021	Pan, oil
	1	230057	Gasket, pan
			<u>PISTON & ROD GROUP</u>
	1	230457	Ring set - std.
43	1	231424	Ring set (service)
44	1	A-230103	Piston - assembly - std.
45	1	230003	Pin, piston - std.
46	2	230004	Retainer, pin
47	1	B-230039	Rod, connecting
48	2	230526	Screw, connecting rod
49	1	230525	Lock, screen
			<u>RETRACTABLE STARTER GROUP</u>
	5	X-136-2	Screw, R.H.M. 10 - 24 x 1-3/4
50	1	A-231643	Starter, recoil - assembly
51	1	A-231644	Cup, drive w/screen
		230165	Gasket Set

SPECIFICATIONS

- BORE AND STROKE: $2\frac{1}{8} \times 2\frac{1}{2}$ inches.
- PISTON DISPLACEMENT: 16.22 cubic inches.
- IGNITION: High voltage flywheel magneto. Spark plug 14 mm.
- OIL CAPACITY: $2\frac{1}{2}$ pints.
- MAIN BEARING: Anti-friction ball bearing on power take-off end of crankshaft. Copper lead backed sleeve bearing on front end.
- CRANKSHAFT: Heat treated ductile iron casting with integral counterweights and induction hardened crankpin.
- CONNECTING ROD: Aluminum alloy with large bearing area.
- PISTON: Low expansion aluminum alloy.
- PISTON RINGS: Two compression, one oil control.
- VALVES: High heat resistant, one piece, steel alloy.
- CYLINDER HEAD: Aluminum alloy with deep fins closely spaced for efficient cooling.
- DIRECTION OF ROTATION: Counterclockwise viewed from power take off side.
- FUEL TANK: $1\frac{1}{4}$ gallon capacity.

NOTE: Kohler Co. manufactures only the engine used to power the equipment you have purchased. For repairs and service on the unit, other than engine, please contact dealer from whom unit was purchased. They will arrange to give satisfactory service.

PARTS ORDERING INSTRUCTIONS

Order parts from your Kohler dealer. Always refer to the nameplate for the model, serial, and specification number. A typical nameplate is shown in the illustration below.

