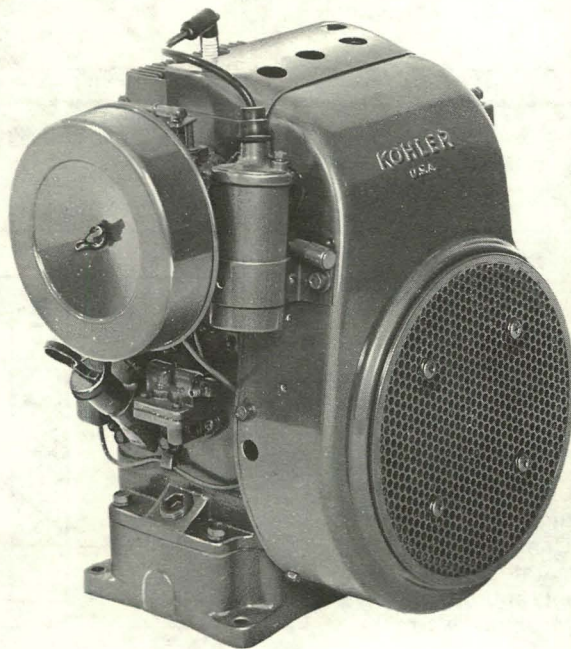




# OWNER'S MANUAL



## MODELS

K241, K301

(10 hp)

(12 hp)

K321, & K341

(14 hp)

(16 hp)

HAUSE EQUIPMENT, INC.  
4444 Morrison Road Denver, CO 80219  
Between Federal and Sheridan  
Colorado Toll Free 1 - 800 - 792-3900  
Denver Metro Area (303) 934-5488

## operating & maintenance instructions

**CONGRATULATIONS**—You have selected one of the finest four-cycle engines that money can buy. Kohler designs long-life strength into its engines, and builds them to give you on-the-job durability . . . making this one of the most dependable single cylinder engines available.

Parts subject to the most wear and tear (like cylinders, crankshafts, and camshafts) are made from precision-formulated cast iron . . . and because

the cast iron cylinders can be rebored, these engines can last even longer.

Kohler engines are easy to service, all routine service parts—points, condenser, spark plug, air filter, carburetor—are easily and quickly accessible.

To keep your engine in top operating condition, follow the simple maintenance procedures given in this manual.

ENGINE DIVISION, KOHLER CO., KOHLER, WISCONSIN 53044

[BrentChalmers.com](http://BrentChalmers.com)

1P-1346-A



## FUEL

For best results, use regular grade, unleaded gasoline with pump sticker octane rating of 87 or higher.

Unleaded is recommended since it leaves less combustion chamber deposits. However, leaded regular grade may also be used. See service frequency footnote under the Service Procedures table on page 5.

Fresh gasoline ensures a fuel blended for the season and reduces the possibility of gum deposits forming and clogging the fuel system. Do not use gasoline left over from the previous season.

Do not add oil to the gasoline.

Do not use gasoline/alcohol blends (gasohol) as fuel for Kohler engines.

Do not overfill fuel tank—leave some room for fuel to expand.

**WARNING:** Gasoline is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in unoccupied buildings, away from sparks or flames. Do not add gasoline while engine is hot or running or start engine around spilled fuel. Never use gasoline as a cleaning agent.

## OIL

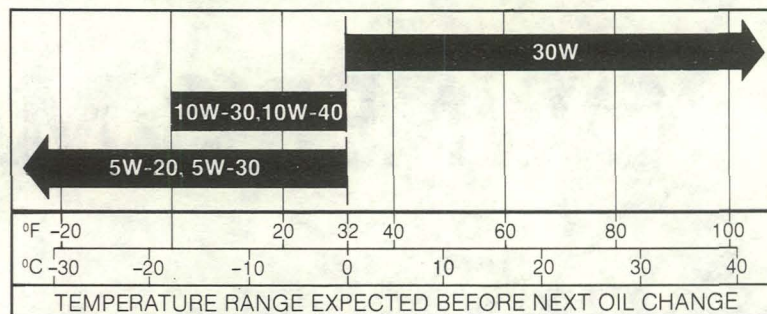
Before starting engine, fill the crankcase with the proper type and quantity of oil.

Use high quality detergent oil of service class SF, SE, SD, or SC. Select viscosity based on air temperature at time of operation.



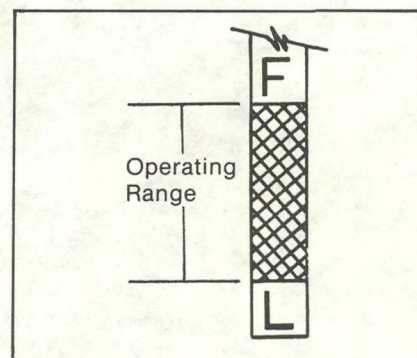
A logo or symbol on oil containers identifies the viscosity grade and API designation.

## RECOMMENDED SAE VISCOSITY GRADES



Straight 30 weight oil is preferred. If multi-viscosity oil is used, be aware of resulting increase in oil consumption and in combustion deposits when used in temperatures above 32° F (0° C).

Using oil other than the service classes listed, or oil change intervals longer than recommended, could reduce engine life. Damage to engines due to improper maintenance or use of incorrect oil quality and/or viscosity is not covered by the engine warranty.



**CAUTION:** Do not operate engine with oil level below "L" mark or over the "F" mark.

## CHECKING OIL

The importance of checking and changing crankcase oil cannot be overemphasized. Insufficient oil, or dirty oil causes premature engine wear and failure.

Check oil before each use when the engine is cool and the oil has drained back into the sump. Add oil, if low, to bring level up to, but not over, the "F" mark on the dipstick.

Oil should always be checked while engine is off and on a level surface.

With threaded plug-type dipstick, remove and wipe oil off—reinsert, but do not turn plug in. To check oil level, shoulder plug on top of hole. After checking, again turn plug all the way into crankcase.

With extended oil fill tube and dipstick, push dipstick all the way down in tube then take reading.

## OIL CHANGE

On a new engine, change oil after the first 5 hours of operation and then every 25 operating hours thereafter.

Complete drainage will better be achieved if engine can be tilted slightly toward oil drain.

Drain oil while engine is still warm from operation—it flows freely and carries away more impurities. (See Engine Identification illustration for location of drain plug.) After draining, reinstall drain plug. Fill with proper viscosity oil to "F" mark on dipstick. Always check level on dipstick before adding more oil.

Engine must be on a level surface when filling and checking oil.



## OPERATING INSTRUCTIONS

ALSO READ THE OPERATING INSTRUCTIONS OF THE EQUIPMENT  
THIS ENGINE POWERS

### PRE-START CHECKLIST

- ✓ Check oil. Add oil if low.
- ✓ Check fuel. Fill if low.
- ✓ Check air intake areas—make sure they are clean and unobstructed.
- ✓ Check that all shrouds, equipment covers, and guards are in place.

**WARNING:** Engine exhaust gases contain poisonous carbon monoxide. Avoid inhaling exhaust fumes and never run the engine in a closed building or confined area.

### STARTING

If engine is equipped with a clutch, make sure it is disengaged before starting, and if equipped with a transmission, make sure it is in neutral before starting.

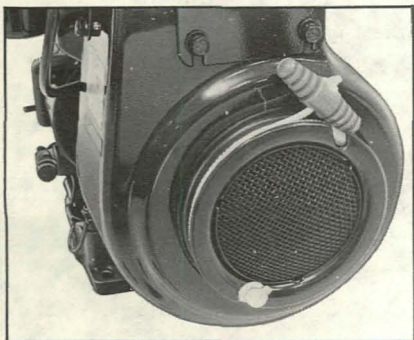
Be especially careful on equipment with hydro-static drive. Shift lever must be exactly in NEUTRAL position or resistance will be placed on the normal rotation of the engine and prevent it from starting.

Move the throttle control lever to mid point of travel.

Move choke lever into full choke position and gradually return to OFF position after engine starts and warms up.

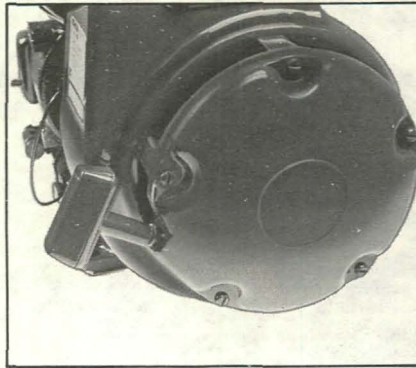
#### Rope Start

Pull starter handle straight out. A smooth steady pull will start engine.



#### Retractable Start

A smooth steady pull will start engine. Pull starter handle straight out to avoid excessive rope wear from starter rope guide.



While retractable starters do not require servicing, the rope should be checked occasionally to make sure it is in good condition. If frayed, have it replaced immediately by your Kohler Engine Service Dealer.

**WARNING:** Before checking rope, remove spark plug lead to prevent engine from starting—and make certain equipment is in neutral.

#### Electric Start

Activate starter switch. As soon as engine starts, release switch.

Do not crank engine continuously for more than 10 seconds at a time.

A 60 second cool-down period must be allowed between cranking attempts if the engine does not start. Failure to follow these guidelines may result in burn-out of the starter motor.

**CAUTION:** In the event of "false start," that is, if the engine develops sufficient speed to disengage the starter, but fails to continue running, the engine must be allowed to come to a complete stop before a restart attempt is made. (If starter is engaged while flywheel is still rotating, the starter pinion and flywheel ring gear may clash, resulting in damage to the starter.)

If starter does not turn the engine over, shut off starter immediately and make no further attempt to start engine until the condition is corrected. For trouble analysis see your Kohler Engine Service Dealer.

Starter motors are prelubricated. Brushes normally will require attention only after extended use.

#### Battery

Normally a 12-volt battery with a rating of approximately 32-amp hours should be used. Refer to operating

instructions of the equipment this engine powers for specific information.

If battery charge is not sufficient to turn starter motor over, recharge the battery. Do not attempt to jump start the engine with another battery—batteries larger than those recommended can cause starter motor burn-out.

Also refer to Battery Charging.

### OPERATING

**NOTE:** Check your local laws and statutes regarding engine spark arrestor muffler requirements. See your Kohler Engine Service Dealer for optional spark arrestor muffler.

**CAUTION:** Do not operate engine continuously at an angle exceeding 30° in any direction—as engine damage may result from lack of sufficient lubrication.

Also refer to operating instructions of the equipment this engine powers—it may have more stringent guidelines as to angle of operation due to equipment design.

If debris builds up on air intake area and air screen during engine operation, STOP engine immediately and clean off. An obstructed screen can cause engine overheating.

**WARNING:** The engine and the exhaust system get extremely hot from operation. Do not operate equipment with shrouds, equipment covers, or guards removed. Keep hands, feet, clothing, and hair away from all moving parts.

Do not allow equipment to run unattended.

**WARNING:** Do not tamper with the governor setting—overspeed is hazardous and could void warranty.

### STOPPING

Turn ignition switch OFF. On engines so equipped, press and hold STOP button until engine comes to a complete stop.



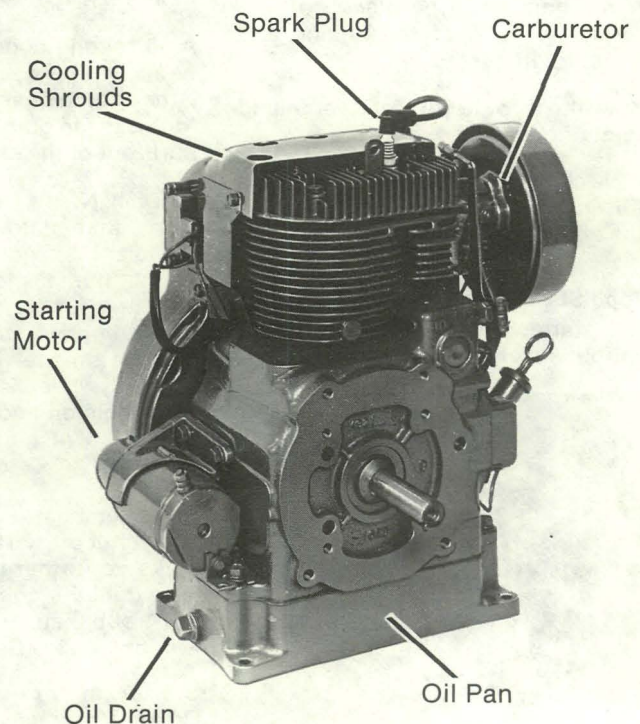
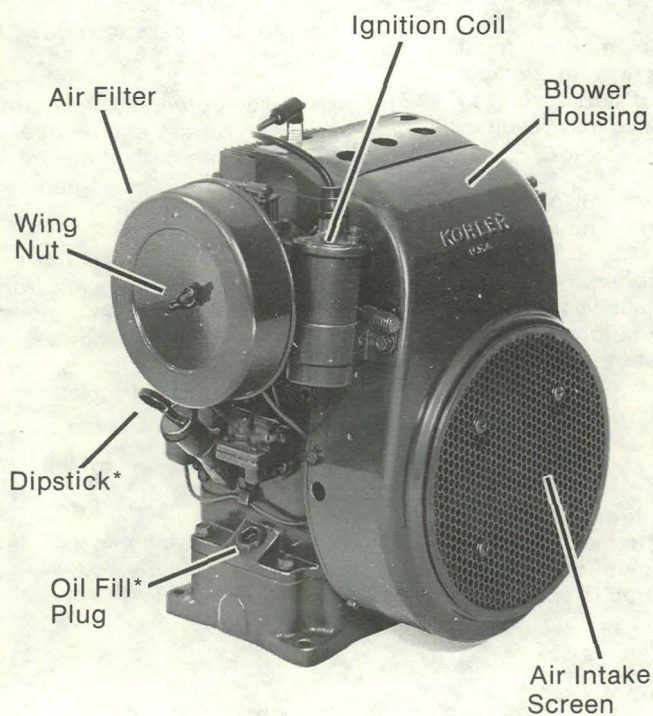
## TROUBLESHOOTING

Do not attempt to service or replace major items or any items that call for special timing or adjustment procedures (governor, breaker points, etc.) - have this work done by a Kohler engine specialist.

When a problem occurs, do not overlook the simple causes. A starting problem could be caused by an empty fuel tank. The table lists some common causes of troubles.

Problem	No Fuel	Improper Fuel	Dirt In Fuel Line	Dirty Air Screen	Incorrect Oil Level	Engine Over-Loaded	Dirty Filter Element	Faulty Spark Plug
Will not start	X		X			X	X	X
Hard starting	X	X	X			X	X	X
Stops suddenly	X		X	X	X	X	X	
Lacks power		X	X	X	X	X	X	X
Operates erratically		X	X	X		X	X	X
Knocks or pings		X		X		X		X
Skips or misfires		X	X	X			X	X
Backfires			X			X	X	X
Overheats			X	X	X	X	X	
High fuel consumption							X	X

## ENGINE IDENTIFICATION



\*NOTE: Dipstick or oil fill plug is optional and may vary depending on engine specification.



## MAINTENANCE INSTRUCTIONS

NOTE: These service procedures should also be performed as part of any seasonal tune-up.

**WARNING:** Before servicing engine or equipment, always remove the spark plug lead to prevent engine from starting accidentally. Ground the spark plug lead to prevent sparks that could cause fires.

If engine is operated under dirty, dusty conditions, maintenance procedures should be performed more frequently than stated.

MAINTENANCE PROCEDURES	FREQUENCY
Clean Air Intake Screen ✓	DAILY
Check Oil Level	DAILY
Replenish Fuel Supply	DAILY
Service Precleaner ✓	25 Hrs.
Change Oil	25 Hrs.
Check Reduction Gear Unit	50 Hrs.
Clean Cooling Fins and External Surfaces ✓	50 Hrs.
Check Air Filter ✓	50 Hrs.
Check Spark Plug	100 Hrs.
Have Breaker Points Checked*	500 Hrs.
Have Ignition Timing Checked*	500 Hrs.
Have Valve and Tappet Clearance Checked*	500 Hrs.
Have Cylinder Heads Serviced*	500 Hrs.●
Have Starter Motor Drive Serviced*	500 Hrs.

\*Have these services done only by a Kohler engine specialist.

- 250 hours when leaded gasoline is used.

### COOLING SYSTEM

Every 50 operating hours (more often if conditions require) remove cooling shrouds and clean cooling fins. Also clean dust, dirt, and oil from external surfaces of engine, which can contribute to improper cooling. Operating engine with cooling shrouds removed will cause overheating and engine damage.

2. Remove precleaner from paper element. Wash precleaner in warm water with detergent.

3. Rinse thoroughly until all traces of detergent are eliminated. Squeeze away excess water. Air dry. (Do not wring precleaner.)

4. Saturate in fresh, clean engine oil and squeeze out excess.

5. Reinstall precleaner over paper air filter element.

to dislodge dirt. Do not wash paper element or use pressurized air, as this may puncture filter element.

When dirty or damaged, replace with genuine Kohler filter element. Carefully handle new element—do not use if surfaces are damaged.

With air filter disassembled, also check the base plate to make sure it is secure and not bent or damaged. Damaged components could allow unfiltered air into engine causing premature wear and failure.

Install the air filter cover. Wing nut must be finger tightened 1/2 to 1 full turn after nut contacts cover. Do not overtighten.

#### Paper Element

Every 100 operating hours, more often under extremely dusty or dirty conditions, clean the paper element. Remove the precleaner and the element. Gently tap the flat side of the element

### AIR FILTER

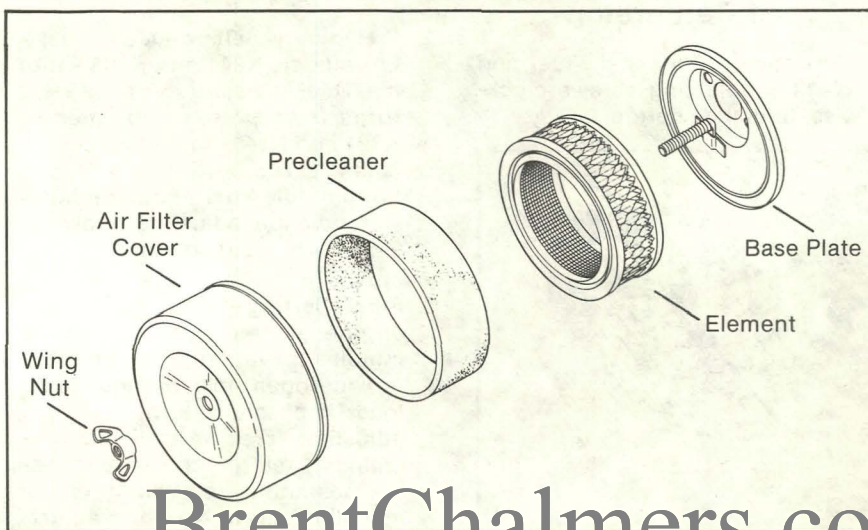
This engine is equipped with a large capacity dry-type air filter element.

Some models are equipped with a precleaner. Precleaners extend the useful life of the paper air filter element by removing coarse particles.

#### Precleaner

Every 25 operating hours, more often under extremely dusty or dirty conditions, wash and re-oil the precleaner, as follows:

1. Remove wing nut and air filter cover.





## SPARK PLUG

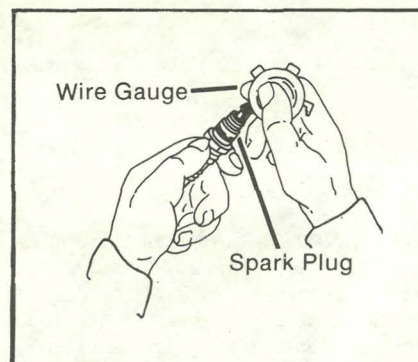
Clean area around spark plug before removing to prevent dirt from entering engine. Every 100 operating hours remove plug, check condition and reset gap to 0.035 in. (0.90 mm), or replace plug if necessary. See Specifications.

Carefully note spark plug appearance—it can indicate ignition trouble.

If heavy black, or blistered white, deposits are noted, see your Kohler Engine Service Dealer for analysis. An incorrect spark plug, cracked porcelain, or improper spark gap can cause the engine to misfire.

Do not clean spark plug in machine using abrasive grit. Replace plug when dirty.

Torque plug to 18-22 ft. lbs. (24-30 Nm) (2.5-3.0 kgm).



## CARBURETOR ADJUSTMENT

*Carburetor adjustments should be made only after engine has warmed up.*

The carburetor is designed to deliver the correct mixture of fuel and air to the engine for all operating conditions. Carburetors are set at the factory and normally should not have to be adjusted. If your engine exhibits conditions similar to those found in the table, it may be necessary to adjust your carburetor.

Turning adjusting screws in (clockwise) decreases the supply of fuel to the carburetor giving a leaner fuel-air mixture. Turning adjusting screws out (counterclockwise) increases the supply of fuel to the carburetor giving a richer fuel-air mixture.

An incorrect setting can lead to a fouled spark plug, overheating, excessive valve wear, or other problems. See your Kohler Engine Service Dealer for assistance.

Condition	Possible Cause/Probable Remedy
1. Black, sooty exhaust smoke*, engine sluggish.	1. Mixture too rich - turn main fuel adjusting screw clockwise.
2. Engine misses and backfires at high speed.	2. Mixture too lean - turn main fuel adjusting screw counterclockwise.
3. Engine starts, sputters and stops under cold weather starting.	3. Mixture too lean - turn main fuel adjusting screw counterclockwise.
4. Engine runs rough or stalls at idle speed.	4. Idle speed too low or improper idle mixture - turn idle speed adjusting screw, then idle fuel adjusting screw if needed.

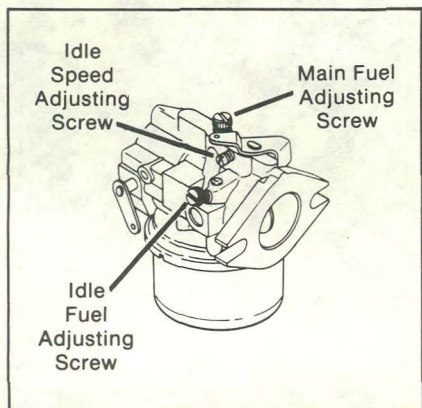
\*If black exhaust smoke is noted, check the air filter first - an apparent "overrich" mixture can actually be a clogged air filter element. If, after element is replaced, black smoke or other problems continue, adjust carburetor immediately.

**CAUTION:** Main fuel and idle fuel adjusting screws are screw-type needle valves which taper to critical dimensions. Damage to these screws will result if they are turned in forcefully.

may first increase, then it will decrease as the adjusting screw is turned. Note the position of the adjusting screw when engine speed starts to decrease. Set the adjusting screw midway between the two points noted.

### To Adjust Carburetor:

1. Stop engine, turn main fuel and idle fuel adjusting screws clockwise, until they bottom *lightly*.



2. **Preliminary Setting—Main Fuel—**For models K241 and K301 - turn main fuel adjusting screw out 1-1/2 turns from bottom. For models K321 and K341—turn main fuel adjusting screw out 2-1/2 turns from bottom. **Idle Fuel** - For all models—turn idle fuel adjusting screw out 2-1/2 turns from bottom.

3. **Final Setting—Main Fuel—**Run engine at half-throttle for 5-10 minutes to warm up. With throttle in wide open position and under load, if possible, turn main fuel adjusting screw in from the preliminary setting until speed decreases and note position of the adjusting screw. Now turn idling screw out—the engine speed

4. **Final Setting—Idle Fuel—**Run engine at half-throttle for 5-10 minutes to warm up. Allow engine speed to fall to idle, or put throttle into idle position. Make adjustment using the same procedure as in step 3.

**NOTE:** Idle speed should not exceed 1500 RPM. Recommended idle speed is 1200 RPM—see Step 5.

5. **Idle Speed Setting—**Run engine at half-throttle for 5-10 minutes to warm up. Allow engine speed to fall to idle, or put throttle into idle position. Set engine speed to 1200 RPM (±75 RPM) by turning the idle speed adjusting screw in or out



## BATTERY CHARGING

**WARNING:** Batteries contain sulfuric acid—avoid contact with skin, eyes or clothing. Batteries produce explosive hydrogen gas when being charged. Ventilate area when charging battery. Keep cigarettes, open flame and sparks away from battery at all times. Keep batteries and acid out of the reach of children. Remove all jewelry when working on battery.

Do not leave ignition switch "ON" when charging battery—a switch left "ON" can cause the ignition coil to overheat and possibly explode. When removing the battery from equipment always disconnect the negative (-) (ground) cable first. When replacing battery connect the negative (-) ground cable last.

## REDUCTION GEAR UNITS

On engines equipped with a reduction gear unit, remove the oil plug on lower part of cover every 50 hours to check oil level. With the engine level, the oil level of the unit should be up to the bottom of the oil plug hole. To add oil, remove the vented plug at the top of the unit. Use the same weight and grade of oil as used in the engine crankcase.

## MODEL DESIGNATION

The Model number designates the cubic inch displacement and the number of cylinders—Model K241A, for example, designates 24 cubic inch displacement, 1 designates single cylinder. The letter suffix designates a specific version as follows:

Suffix	Designation
A	Oil Pan Type
EP	Generator Set
P	Pump Model
Q	Quiet Model
R	Gear Reduction
S	Electric Start
T	Retractable Start

## PARTS ORDERING

The engine SPECIFICATION, MODEL, and SERIAL numbers on the identification plates are required when ordering replacement parts from your Kohler Engine Service Dealer. Identification plates are located on the engine shrouding. Include letter suffixes if there are any.

Record your engine identification numbers on the identification plates at the right for future reference.

## KOHLERengine HP

Spec. no.

Model no.

Refer to owners manual for operation and maintenance instructions.

**K** KOHLER COMPANY  
KOHLER WISCONSIN USA

Serial  
No.

## SPECIFICATIONS

### K241

Power Rating at 3600 RPM ... 10 hp  
(7.5 kW)  
Displacement .... 23.9 in<sup>3</sup> (391 cm<sup>3</sup>)  
Bore ..... 3.25 in (82.6 mm)  
Stroke ..... 2.88 in (73.0 mm)  
Approx. Weight .... 118 lb. (53.5 kg)  
Oil Capacity ..... 4 U.S. pints (1.9 L)  
Spark Plug Gap  
Magnet Ignition ..... 0.025 in  
(0.65 mm)  
Battery, Breakerless ..... 0.035 in.  
(0.90 mm)  
Gaseous Fueled  
Engines ..... 0.018 in.  
(0.45 mm)  
Spark Plug Size ..... 14 mm  
Spark Plug Type ..... Champion  
RH-10 or equivalent  
Breaker Point Gap  
(Nominal) ..... 0.020 in.  
(0.50 mm)

### K301

Power Rating at 3600 RPM ... 12 hp  
(9.0 kW)  
Displacement .... 29.1 in<sup>3</sup> (476 cm<sup>3</sup>)  
Bore ..... 3.38 in (85.7 mm)  
Stroke ..... 3.25 in (82.6 mm)  
Approx. Weight .... 118 lb. (53.5 kg)  
Oil Capacity ..... 4 U.S. pints (1.9 L)  
Spark Plug Gap  
Magnet Ignition ..... 0.025 in  
(0.65 mm)  
Battery, Breakerless ..... 0.035 in.  
(0.90 mm)  
Gaseous Fueled  
Engines ..... 0.018 in.  
(0.45 mm)  
Spark Plug Size ..... 14 mm  
Spark Plug Type ..... Champion  
RH-10 or equivalent  
Breaker Point Gap  
(Nominal) ..... 0.020 in.  
(0.50 mm)

### K321

Power Rating at 3600 RPM ... 14 hp  
(10.4 kW)  
Displacement .... 31.3 in<sup>3</sup> (512 cm<sup>3</sup>)  
Bore ..... 3.50 in (88.9 mm)  
Stroke ..... 3.25 in (82.6 mm)  
Approx. Weight .... 118 lb. (53.5 kg)  
Oil Capacity ..... 4 U.S. pints (1.9 L)  
Spark Plug Gap  
Magnet Ignition ..... 0.025 in  
(0.65 mm)  
Battery, Breakerless ..... 0.035 in.  
(0.90 mm)  
Gaseous Fueled  
Engines ..... 0.018 in.  
(0.45 mm)  
Spark Plug Size ..... 14 mm  
Spark Plug Type ..... Champion  
RH-10 or equivalent  
Breaker Point Gap  
(Nominal) ..... 0.020 in.  
(0.50 mm)

### K341

Power Rating at 3600 RPM ... 16 hp  
(11.9 kW)  
Displacement .... 35.9 in<sup>3</sup> (588 cm<sup>3</sup>)  
Bore ..... 3.75 in (95.3 mm)  
Stroke ..... 3.25 in (82.6 mm)  
Approx. Weight .... 122 lb. (55.4 kg)  
Oil Capacity ..... 4 U.S. pints (1.9 L)  
Spark Plug Gap  
Magnet Ignition ..... 0.025 in  
(0.65 mm)  
Battery, Breakerless ..... 0.035 in.  
(0.90 mm)  
Gaseous Fueled  
Engines ..... 0.018 in.  
(0.45 mm)  
Spark Plug Size ..... 14 mm  
Spark Plug Type ..... Champion  
RH-10 or equivalent  
Breaker Point Gap  
(Nominal) ..... 0.020 in.  
(0.50 mm)



## STORAGE

If the engine is to be out of service for approximately two months or more, use the following storage procedure:

Drain oil from crankcase while engine is still warm from operation. Refill engine to "F" mark on dipstick with proper viscosity oil.

Drain reduction gear unit, if so equipped, and refill with same oil as used in engine for season of operation.

Drain fuel tank and carburetor (or run engine until tank is empty).

Remove spark plug and add a table-

spoon of engine oil into spark plug hole. Install plug, but do not connect plug lead. Crank engine 2 or 3 revolutions.

Remove plug, cover hole with thumb and turn engine over until piston is at top of stroke—determined when pressure against thumb is greatest.

Install plug but do not connect plug lead.

Clean exterior surfaces of engine.

Spread a light film of oil over any exposed metal surfaces of engine to prevent rust.

Store in a clean, dry place.

## MAJOR REPAIR

Major repair information is provided in the Kohler Single Cylinder Service Manual, available from your Kohler Engine Service Dealer. However, major repair generally requires the attention of a trained mechanic and the use of special tools and equipment. Your Kohler Engine Service Dealer has the facilities, training, and genuine replacement parts necessary to properly perform the service. Check the Yellow Pages under ENGINES, GASOLINE.

### LIMITED 1 YEAR ENGINE WARRANTY

We warrant to the original consumer that each new engine sold by us will be free from manufacturing defects in materials or workmanship in normal service for a period of one (1) year from date of purchase, provided it is operated and maintained in accordance with Kohler Co.'s instructions and manuals.

Our obligation under this warranty is expressly limited, at our option, to the replacement or repair at Kohler Co., Kohler, Wisconsin, 53044, or at a service facility designated by us, of such part or parts as inspection shall disclose to have been defective.

#### EXCLUSIONS:

This warranty does not apply to defects caused by casualty or unreasonable use, including faulty repairs by others and failure to provide reasonable and necessary maintenance.

The following items are not covered by this warranty:

Engine accessories, such as fuel tanks, clutches, transmissions, power drive assemblies, and batteries, unless supplied or installed by Kohler Co. These are subject to the warranties, if any, of their manufacturers.

WE SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND, including but not limited to labor costs or transportation charges in connection with the replacement or repair of defective parts.

ANY IMPLIED OR STATUTORY WARRANTIES, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. We make no other express warranty, nor is anyone authorized to make any in our behalf.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

#### TO OBTAIN WARRANTY SERVICE:

Purchaser must bring the engine to an authorized Kohler service facility. For the facility nearest you, consult your Yellow Pages or write Kohler Co., Attn: Engine Warranty Service Dept., Kohler, Wisconsin 53044.

ENGINE DIVISION, KOHLER CO., KOHLER, WISCONSIN 53044

ENGINE DIVISION, KOHLER CO., KOHLER, WISCONSIN 53044

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